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"A Quasi-Experimental Study To Assess The Effectiveness Of Information Booklet On Knowledge Regarding Household Waste Management Among Housewives Of Selected Rural Area Of Nerchowk, Mandi. (H.P) 2023"

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ABSTRACT

Waste is something that we don't need any more and discard because it's no longer useful to us. These materials are produced by human beings during preparation of food, manufacturing, packing, repacking apart from this industrial waste generate by mining operations and constructions.

Aim: The main aim of the study was to assess the effectiveness of information booklet on knowledge regarding household waste management among housewives

Methodology: A Quasi-Experimental research design (one group pre-test post-test design) was used to assess the effectiveness of information booklet on knowledge regarding household waste management among housewives. Total 60 housewives were selected by using Non probability convenient sampling technique. Data was collected by using selected sociodemographic variables (9 items), Self- Structured knowledge questionnaire (30 items) regarding household waste management. Tool was validated by team of experts. Pilot study was done on 10% of total population that is 6 housewives. Reliability of tool was checked by using Karl Pearson correlation coefficient formula that is r= 0.8. Data was analysed by using descriptive and inferential statistics.

Result: In the present study, mean pre-test score was 10.90±1.684 which was significantly improved after an intervention. So, mean post-test score was 22.05±1.478 highlighting the effectiveness of intervention in enhancing the level of knowledge towards household waste management. A significant difference was

found between pre-test and post-test knowledge score. However, there was a significant association between knowledge and sociodemographic variables.

Conclusion: The present study revealed that the information booklet was effective to increase the knowledge regarding household waste management

Key words: Assess, Effectiveness, Information Booklet, Household Waste Management and Housewives.

INTRODUCTION

BACKGROUND OF THE STUDY

"It's not sufficient to only have knowledge; we must also take action. Similarly, being willing to do something isn't enough; we must actually do it."

Johann Wolfgang von Goethe, German poet (1749-1832)

The Swachh Bharath mission led by the Government of India seeks to make India a clean country. This campaign was launched officially to achieve the goal of cleanliness and sanitation. It plays an important role in maintaining health by preventing human contact from hazards of wastes. An environmental sanitation is a set of actions geared towards improving the quality of the environment and reducing the amount of disease. The environmental sanitation plans promotion of health of the community by providing clean environment and breaking the cycle of disease. A healthy environment is influenced by factors like clean surroundings, areas free from open defecation, good personal hygiene, proper waste management, and access to enough safe drinking water. As per the reports both urban and rural environment polluted and bring danger to health of the individual and community

Waste is something that we don't need any more and discard because it's no longer useful to us. It is an unwanted and discarded material produced by the user which is no longer used. These materials are produced by human beings during preparation of food, manufacturing, packing, repacking apart from this industrial waste generate by mining operations and constructions. Most things that people throw away are called "waste," but many of these things could actually be useful to someone else or a business. Even things that seem like they have no value can often be turned into something valuable. So, instead of thinking of something as just "trash," it's important to consider how it might be reused or re purposed to benefit others

Maintaining good health is a responsibility that falls on every individual. The Sustainable Development Goals include Global Waste Management Goals, which aim to reduce waste and promote sustainability. The International Solid Waste Association (ISWA) is working to help poorer countries by increasing funding for waste management. The amount of waste produced globally is on the rise as a result of the growing population and urban development. In India, the amount of waste generated is growing rapidly and is mostly disposed of improperly. By 2041, the amount of waste in India is predicted to increase five times over. This issue poses a significant challenge to both the environment and our wellbeing

In a normal town in India, each person makes around 300 to 400 grams of trash every day. But in bigger cities like Delhi and Mumbai, people produce more garbage, between 500 to 800 grams per day per person.

The population of Himachal Pradesh, as per the 2011 census, is around 6.8 million people, which is only 0.57% of the total population of India. Out of this, around 6.88 lakh people live in urban areas, and around 61.76 lakh people live in rural areas. In 2011, the amount of waste produced in the state of Himachal Pradesh was around 304 tonnes per day, and each person in the state generates around 0.4 kilograms of waste every day. Unfortunately, around 60% of the waste produced in Himachal Pradesh is dumped in landfills, which creates harmful conditions and leads to the uncontrolled release of greenhouse gases like methane. The amount of waste generated in Himachal Pradesh is expected to increase by around 133% by 2041, which is a big problem for the state's urban local bodies. Even today, waste management is a challenge in Himachal Pradesh, and the situation is expected to worsen in the coming years

Many people don't know how to properly dispose of household waste, and this can have harmful effects on health and the environment. It's important to educate communities, especially women, about managing waste and keeping their homes and surroundings clean to promote good health. Waste is a natural part of our environment, but improper waste management can contaminate the air, soil, and water, leading to various health problems. Waste management is a global issue that affects everyone, and it's now considered a basic human right.

NEED OF THE STUDY

Household waste is the stuff we throw away at home every day, like paper, cardboard, grass clippings, wood, and other similar things. It's the garbage that comes from our regular activities around the house, like cooking, cleaning, and using a lot of plastic bags. This waste is a part of our daily lives, and it includes things we no longer need or use. When we put these things in the trash, they become part of what we call municipal solid waste, which is a mixture of household, commercial, and public street waste.

The need for studying household waste management globally is crucial due to the immense impact waste generation has on the environment and public health worldwide. According to the United Nations, waste generation is projected to rise by 70% by 2050, and inadequate waste management practices can cause significant harm to the environment and human health. Therefore, understanding and developing effective waste management strategies globally is necessary to mitigate the negative impacts of waste generation and promote a sustainable future.

This study can help identify where housewives may need more knowledge about waste management practices. This information can be used to create educational programs that are targeted towards increasing awareness and promoting sustainable waste management practices. By promoting environmental awareness and encouraging households to adopt sustainable waste management practices, proper household waste management can bring positive impacts on both the environment and public health. Identifying ways to reduce waste is an important aspect of studying household waste management. Proper household waste management can help to reduce the amount of waste generated by households, which can in turn reduce greenhouse gas emissions, conserve resources, and minimize landfills.

In addition to these environmental benefits, proper household waste management can also have economic and social benefits. Sustainable waste management can create jobs, generate income, and save money. Moreover, promoting sustainable waste management practices can encourage community engagement, behaviour change, and a sense of responsibility towards the environment. As nursing professionals, it is our responsibility to disseminate knowledge about household waste management to improve both the environment and health conditions. By educating individuals on proper waste management practices, we can contribute to a healthier environment and overall well-being.

PROBLEM STATEMENT:

"A Quasi Experimental Study to Assess the Effectiveness of Information Booklet on Knowledge Regarding Household Waste Management Among Housewives of Selected Rural Area of Nerchowk, Mandi. (H.P)2023 "

OBJECTIVES

1. To assess the pre-test knowledge regarding household waste management among housewives of selected rural area of Nerchowk, Mandi. (H.P)2023
2. To develop and implement informational booklet regarding household waste management among housewives of selected rural area of Nerchowk, Mandi (H.P)2023
3. To assess the effectiveness of informational booklet regarding household waste management among housewives of selected rural area of Nerchowk, Mandi (H.P)2023
4. To find out the association between knowledge regarding household waste management among housewives of selected rural area of Nerchowk, Mandi with their selected socio demographic variables.

HYPOTHESIS

H_1: There will be significant difference in knowledge after giving information booklet about household waste management among housewives

H_2: there will be significant association of post-test knowledge score with their selected sociodemographic variables

OPERATIONAL DEFINITION

1. **ASSESS:** It is examined something or someone closely and gather information in order to make a judgment or decision based on specific standards or criteria.
2. **KNOWLEDGE:** Knowledge refers to the information, understanding, and skills related to household waste management that individuals have acquired through their learning or experiences.
3. **HOUSEWIVES:** A housewife is a married woman who stays at home to take care of household chores and family responsibilities, instead of working outside the home.

4. **HOUSEHOLD WASTE**: Household waste is the term used to describe the waste or disposable material that is produced in homes or residential areas. This type of waste typically includes items such as food scraps, packaging materials, and other discarded household items.
5. **HOUSEHOLD WASTE MANGEMENT**: Household waste management refers to the strategies and practices used by individuals, particularly housewives, to handle and control the waste produced in their homes. These actions may include waste reduction, reuse, recycling, and proper disposal, among others.
6. **INFORMATION BOOKLET:** An informational booklet is a type of printed material that contains information regarding household waste management.

CONCEPTUAL FRAMEWORK

The present study aims to assess the effectiveness of information booklet on knowledge regarding household waste management among housewives of selected rural area of Nerchowk, Mandi. The conceptual framework for the present study was based on **Nola J Pender's Health Promotion Model (1982)**. The model focuses on cognitive, perceptual and modifying factors and participation in health promotion behavior. The model also identifies factors that influence the health promotion activities.

REVIEW OF LITERATURE

The literature review of the study is organised under the following heading:

1. Literature related to knowledge regarding household waste management
2. Literature related to effectiveness of information booklet regarding household waste management
3. Literature related to disposal of waste
4. Literature related to health hazards of improper disposal of waste

LITERATURE RELATED TO KNOWLEDGE REGARDING HOUSEHOLD WASTE MANAGEMENT:

Asnake Desalegn, Fitsum Tigu (2023): A Cross sectional study was conducted at Gelemso town, Ethiopia among 390 households to assess the knowledge, attitudes and practices on household solid waste management and associated factors. A systematic random sampling technique was used to select 390 households and data was collected by using a structured questionnaire. The study found that most households (87.4%) strongly agreed that solid waste is a major environmental problem. Over 70% of them accepted the principle that solid waste can be reused. About 79% of households "strongly agreed" that proper solid waste management was important to create a healthy environment among the community[10]

Priyanka devi, Neha, Ekta (2023): A pre-experimental study was conducted at rural area Balduhak at Hamirpur among housewives to assess the effectiveness of structured teaching programme on knowledge regarding household waste management. Sample was selected by using non- probability convenience sampling technique and sample size was 60. Result revealed that Pre-test mean score was 7.58 and SD was 2.069. Post-test mean score was 19.93 and SD 2.201. So, there was significant difference of

knowledge score before and after the implementation of structured teaching programme on knowledge regarding household waste management. Conclusion: The recapitalization of the study suggests that before the structured teaching programme the housewife's were have 66.7% inadequate knowledge but after the teaching programme inadequate knowledge was 0%. So, there was increase in the level of knowledge among housewives[11]

LITERATURE RELATED TO EFFECTIVENESS OF INFORMATION BOOKLET:

Leena T. Lokhande, Sheetal Minin Kamble (Jan 2021): a descriptive study to identify the knowledge regarding household waste management among women residing in urban slums of Kolhapur in view to develop an information booklet. Non probability purposive sampling technique used to select sample of 60 women residing in urban slum of KasabaBawada, Kolhapur. Data were collected using a structured questionnaire. The results showed that among women living in urban slums, most had average knowledge about household waste management. Specifically, 28 women (46.67%) had average knowledge, 19 women (21.66%) had poor knowledge, and only 13 women (31.67%) had good knowledge. The mean was 11.11, median was 11, mode was13, standard deviation was 3.23, and range was 13of knowledge scores of women's residing in urban slums regarding household waste management. CONCLUSION: Overall findings of the shows that majority of the women 19 (21.66%) having poor knowledge, therefore it is necessary to provide adequate knowledge regarding household waste management25

Seeta Devi, Roya Nemati, Petronella Natah, Rheu Rajan, Sumit Rane (2020): A study was conducted in Pune to see if giving residents an information booklet could improve their knowledge, behaviour, and willingness to recycle solid household waste. The researchers randomly selected 100 residents for the study. They gave participants a questionnaire to measure their knowledge and then provided them with the booklet. After 15 to 20 days, they re-assessed the participants to see if the booklet made a difference. The results showed a significant improvement in knowledge, with a t-value of 27.4. This means that the booklet had a positive effect on the residents' understanding and willingness to practice better waste management at home. Overall, the intervention was successful in promoting better waste recycling practices among the residents.[26]

LITERATURE RELATED TO DISPOSAL OF WASTE:

Moghaddam Charkhtab Marzieh, Zeidi Mohammadi Isa, Hosseini Fatemeh conducted a quasi-experimental study to assess the effect of educational interventions based on an integrated social cognition model (ISCM) on waste recycling at the source among housewives in Lahijan City, Iran. a total of 144 women who sought health care services in Lahijan were selected using a multistage random sampling method. The participants were then evenly divided into intervention and control groups, with each group consisting of 72 women. The result revealed that the mean ± SD of the behaviour score increased from 17.25 ± 4.96 before the intervention to 25.78 ± 4.95 after the intervention ($P < 0.001$). Conclusions: The design and implementation of educational interventions based on ISCM have the potential to enhance

housewives' performance in waste management and recycling while also increasing their awareness levels.[30]

Nair V. Vijayasree, KK. Ajith (2023) A descriptive study was conducted to assess the knowledge regarding the disposal of kitchen garbage among housewives in selected community areas, in Kanakapura, Bangalore, Karnataka. A total sample of 100 housewives was selected using the non-probability purposive sampling technique. Data analysis was done using descriptive and inferential statistics. The findings of the study revealed that the knowledge score about the disposal of kitchen garbage was 46.89% and the mean knowledge score regarding disposal of kitchen garbage among housewives was 13.13±1.52. A significant association at 0.05 levels was observed between knowledge about educational status. Conclusion: The findings of the study confirmed that the knowledge regarding disposal of kitchen garbage is average among housewives.[31]

Literature related to health hazards of improper disposal of waste:

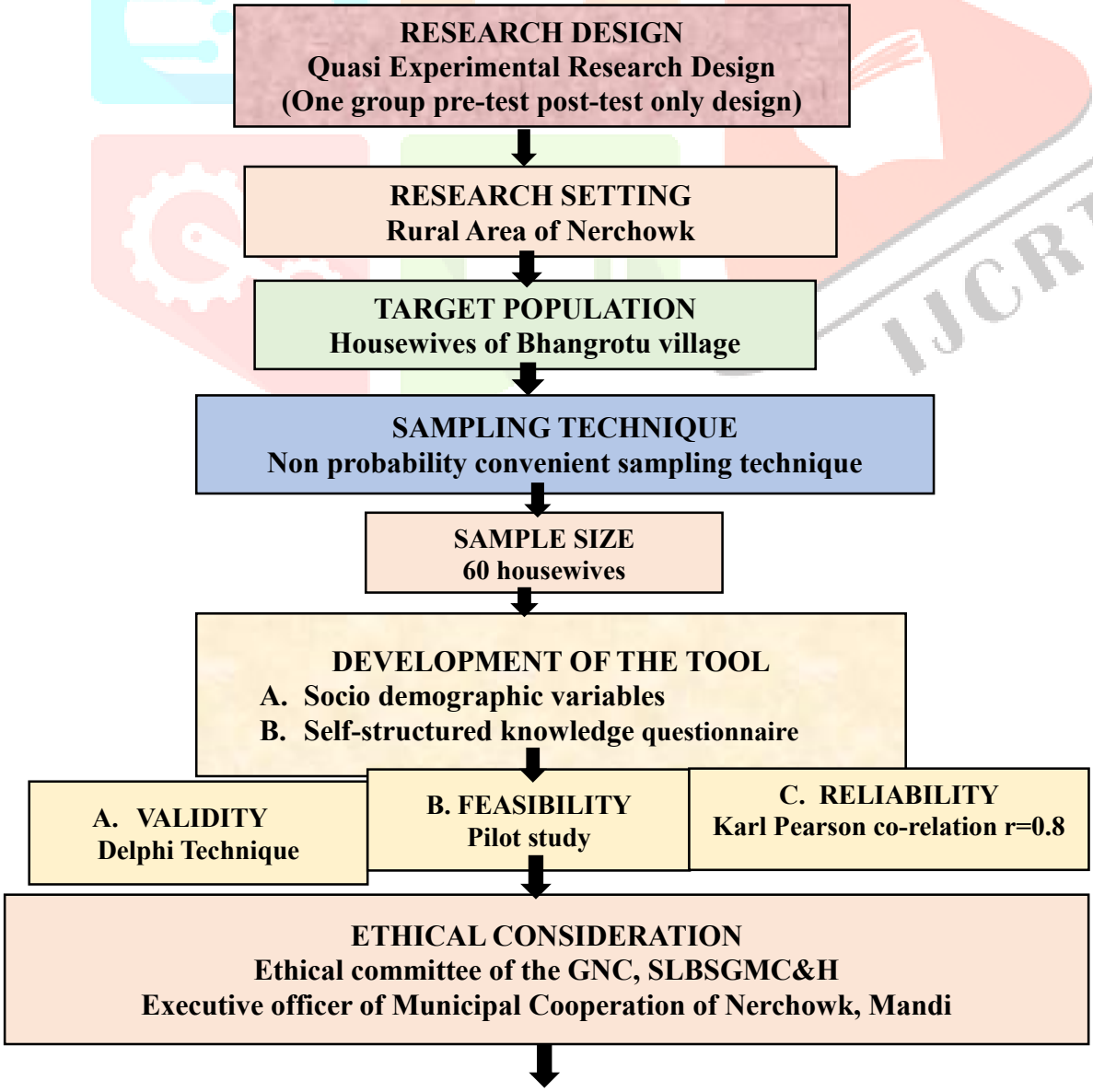
Mukherjee Deepa, Kumar Sunil, Vats Naveen (2023): A comparative study was conducted to evaluate the knowledge of environmental pollution among adults living in both rural and urban areas of Gurugram. Total 100 participants are selected from rural and 100 from urban area. The participants were selected by using purposive sampling technique. The results of the study revealed that there is significant difference in the mean knowledge score between rural (75.87 + 14.40) & urban area (109.85 + 21.85) by t value of 14.611. based upon the findings the study suggests that the development of information booklet focus on various components of the environment, and ways to prevent and control pollution. Conclusion: study shows the knowledge disparity regarding environmental pollution between rural and urban population in Gurugram. It emphasized the need for renewed knowledge through informational resources and community level interventions to address and prevent environmental pollution.[39]

Aminu Folasade, Ladapo H L(2020): The study investigated the impact of improper solid waste disposal on the environment and health in rural households in Ikenna Local Government Area, Ogun State. A sample of 120 households was selected using a multistage sampling approach, and data were collected through questionnaires given to the household member responsible for waste management. Analysis revealed that most respondents were female with an average age of 39. The study found that improper waste disposal led to significant environmental issues, including air pollution, fly breeding, and blocked drainage. It recommends adopting policies that encourage safe and eco-friendly waste disposal practices.[40]

MATERIAL AND METHODS

In this study, A **Quantitative Research Approach** was adopted to assess the effectiveness of information booklet on knowledge regarding household waste management among housewives of selected rural area of Nerchowk, Mandi. (H.P). In order to meet the aim and objective of the study an appropriate research design was selected that was Quasi Experimental Research Design. Three types of research variables were identified in this study. They are independent variables, Dependent variables & Extraneous variables. In the present study independent variable was Information booklet, Dependent variable was knowledge of

housewives regarding household waste management and Extraneous variable were age, education, type of family, monthly income, drainage system, waste management facility, previous knowledge, source of information. The research setting for the present study was Rural area of Nerchowk (MUNDRU), Mandi. (H.P). Housewives from the rural areas of Nerchowk who were available at the time of data collection were selected as the research population. A total of 60 housewives were selected as the sample using a non-probability convenient sampling technique. To assess the knowledge regarding household waste management, the tool was divided into two sections: Section A and Section B. Section A included 10 items related to socio-demographic information such as age, education, type of family, monthly income, prior knowledge about household waste management, source of knowledge, availability of waste management facilities, drainage system, and professional education. Section B was divided into two parts; Part A consisted of a self-structured knowledge questionnaire with 30 multiple-choice questions related to household waste management. Each question had four options, and participants were instructed to choose one correct answer. Each correct response was given a score of 1, while incorrect answers or "I don't know" responses were scored 0. The total possible score ranged from 0 to 30. Part B included an information booklet designed to provide knowledge and awareness about proper household waste management practices



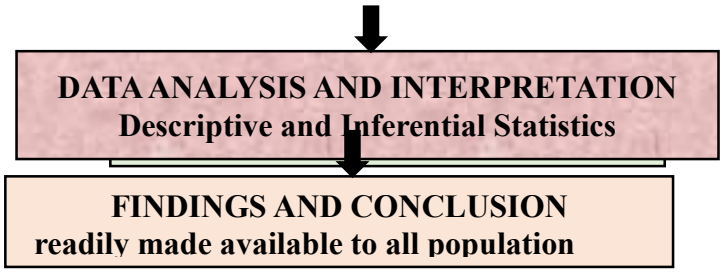


FIGURE: SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY

ANALYSIS AND INTERPRETATION OF DATA

Analysis and interpretation of data was done according to the objectives using descriptive and inferential statistics. The level of significance chosen was at $p \leq 0.05$.

Organization of Analyzed Data:

The analysed data was organized according to the objectives and presented under the following sections:

SECTION A

Findings related to Frequency(f) and percentage (%) distribution of housewives according to their sociodemographic variables.

SECTION B

Findings related to comparison of pre-test and post-test knowledge score

SECTION C

Findings related to association between knowledge score with their selected socio demographic variables of housewives on knowledge regarding household

SECTION -A

DESCRIPTION OF SOCIO DEMOGRAPHIC VARIABLES

This section describes the frequency and percentage distribution of socio demographic variables like Age in Years, Education, Type of Family, Monthly income, knowledge regarding household waste management, Source of knowledge, Waste Management Facility, Drainage System, Professional education regarding household waste management among housewives of rural area of Nerchowk.

TABLE 4.1: Frequency (f) and percentage (%) distribution of housewives according to their sociodemographic variables.

Variables	Options	Frequency (%)
Age in Years	21-30 Years	10 (16.7%)
	31-40 Years	**19 (31.7%)**
	41-50 Years	**19 (31.7%)**
	51-60 Years	12 (20.0%)
Education	**< 10^{th}**	**24 (40.0%)**
	12^{TH}	17 (28.3%)
	Graduate	12 (20.0%)
	Post graduate or above	7 (11.7%)
Type of Family	Nuclear family	13 (21.7%)
	Joint family	**45 (75.0%)**
	Extended family	2 (3.3%)
Monthly Income	<=10000	2 (3.3%)
	10001-20000	10 (16.7%)
	20001-30000	9 (15.0%)
	30001-40000	**30 (50.0%)**
	>=40000	9 (15.0%)
Knowledge regarding household waste management	**Yes**	**60 (100.0%)**
	No	0.00%
Source of Knowledge	Mass media	31.70%
	Peer group	25.00%
	Family members	**26 (43.3%)**
Waste Management Facility	**Available**	**40 (66.7%)**
	Not available	33.30%
Drainage System	Open	31.70%
	Closed	**41 (68.3%)**
Professional Education	Yes	0.00%
	No	**60 (100.0%)**

SECTION B

FINDINGS RELATED TO COMPARISON OF PRETEST AND POST TEST KNOWLEDGE SCORE

This section describes the frequency and percentage distribution of pre-test& post test scores of housewives.

Table 4.2: Comparison of frequency (f) and percentage (%) distribution of pre-test & post-test knowledge score of housewives regarding household waste management

Level of score	Pre-test f & %	Post test f & %
Inadequate	27 (45%)	0 (0%)
Moderate	33 (55%)	12 (20%)
Adequate	0 (0%)	48 (80%)

Table 4.3: Comparison of pre-test and post-test knowledge score of housewives

Descriptive Statistics	Mean ±S. D	Mean%	Range	Mean diff.	Paired T-test	P value	Table value at 0.05
Pretest knowledge	10.9±1.684	36.30	7-15	11.150	83.153 ***	<0.001	2.00
Post test knowledge	22.05±1.478	73.50	19-25				

Maximum Score= 30 **Minimum score=0**

Table 4.4 Effectiveness of information booklet on household waste management

EFFECTIVENESS OF INFORMATION BOOKLET						
Mean%	**Pre-Test Knowledge**	**Post Test Knowledge**	**Difference**	**Pre-Test Knowledge Score %**	**Post-test Knowledge Score %**	**Difference%**
Average	**10.90**	**22.05**	**11.15**	**36.33**	**73.50**	**37.17**

Maximum Score =30 **Minimum Score=0**

The data shows a notable improvement in knowledge after the test. On average, the pre-test knowledge score was 10.90, while the post-test knowledge score increased to 22.05, resulting in a difference of 11.15 points. This translates to a percentage increase from 36.33% pre-test to 73.50% post-test, with an overall effectiveness gain of 37.17%. This significant increase indicates that the intervention or learning method was highly effective in enhancing knowledge.

SECTION -C

Table 4.5 findings related to association between level of knowledge score with their selected socio demographic variables of housewives

Variables	PRE-TEST				POST- TEST			
	Chi Test	P Value	df	Table Value	Chi Test	P Value	df	Table Value
Age in years	14.784	0.001**	2	7.700	14.797	0.002**	3	7.815
Education	9.478	0.034**	4	7.340	9.403	0.024**	3	7.815
Type of family	7.300	0.018**	2	5.930	7.308	0.026**	2	5.991
Monthly income	3.400	0.455	4	9.400	3.611	0.461	4	9.488
Knowledge regarding household waste management	-	-	-	-	-	-	-	-
Source of knowledge	9.650	.006**	2	5.451	9.784	.008**	2	5.991
Waste management facility	0.350	.394	2	3.841	0.469	.494**	2	3.841
Drainage system	0.300	.450	1	3.678	0.308	.579	1	3.841

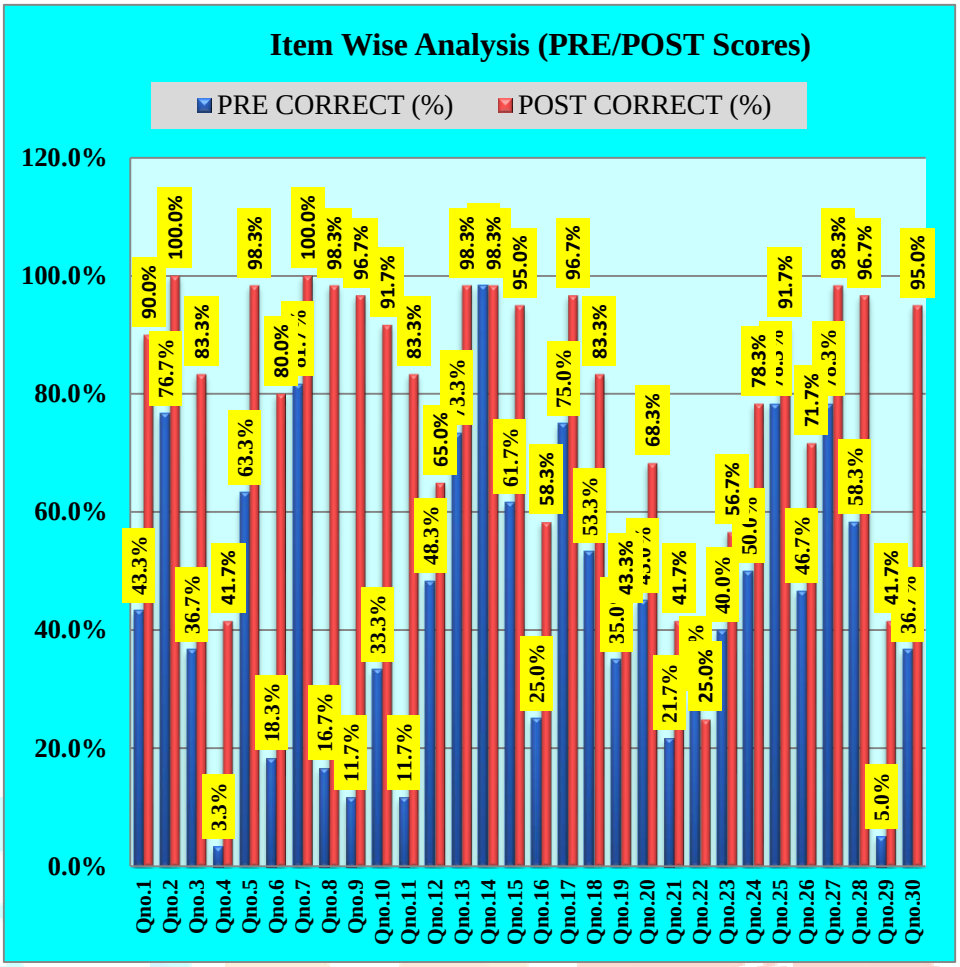


Figure: bar diagram representing item wise analysis of pre-test and post test level of knowledge score.

DISCUSSION

To assess the effectiveness of informational booklet regarding household waste management among housewives of selected rural area of Nerchowk, Mandi (H.P)2023

In present study, before the intervention mean score was 10.9 with standard deviation of 1.684. the median score was 11, with a minimum score of 7 and a maximum score of 15, resulting in a range of 7-15. After the intervention, the mean score increased significantly to 22.05 with a standard deviation of 1.478. The median score was improved to 22 with the minimum 19 and maximum score 25, yielding a range of 19-25. These results indicate a substantial improvement in housewives knowledge following the intervention. **Hence, research hypothesis H_1 was accepted and null hypothesis H_{01} was rejected.**

These findings were supported in the study conducted by Seeta Devi, Roya Nemati to assess the knowledge, behaviour, and willingness to recycle solid household waste. In these 100 participants were selected randomly. After 15 to 20 days, the results showed a significant improvement in knowledge, with a t-value of 27.4. This means that the booklet had a positive effect on the residents' understanding and willingness to practice better waste management at home. Overall, the intervention was successful in promoting better waste recycling practices among the residents

CONCLUSION

From the findings, present study concluded that the mean knowledge score in pre-test and post-test 10.9 (±1.684) and 22.05 (±1.478) respectively. Information booklet has been proven effective in enhancing the knowledge regarding household waste management. There is a significant association of level of knowledge with selected sociodemographic variables i.e. Age (in years), educational status, type of family and source of knowledge.

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