



Determinants of Household Food Waste in Varanasi: A Socio-Behavioural Analysis

Preksha Porwal, Neeral Gupta, Radhika Rateria, Dharmapuri Raghunatha Rao, Anusha Priyadarsini K

Abstract: Food waste is an increasingly critical issue, particularly in urban households, where it intersects with concerns of food security, environmental sustainability, and public health. In Varanasi, India, a densely populated and culturally diverse city, household food waste presents a unique challenge due to varying socio-economic conditions and traditional food practices. This study focuses on the role of women in managing household food, aiming to understand the types and quantity of food wasted and the socio-behavioural factors contributing to this issue. It further explores how targeted educational interventions can help reduce food waste. The primary objective is to analyse patterns of food waste in Varanasi households and investigate the socio-economic and dietary factors influencing waste generation. Additionally, the study evaluates the effectiveness of educational interventions in reducing food waste and fostering behavioural change. To assess the pre- and post-KABP (Knowledge, Attitudes, Beliefs, and Practices) on food waste among the women in the households (HH) 2. To measure food waste in households. To educate the women of the household on the interconnection between food waste, climate change, food insecurity, and malnutrition. The study involved women aged 18 to 49, including those who were pregnant or lactating, from diverse socioeconomic backgrounds. The Kuppaswamy socio-economic scale was used to classify participants, while a structured KABP questionnaire was administered both before and after the intervention. Food waste was measured over three consecutive days using labelled trash bags provided to each household. Participants were then provided with practical information on portion control, reuse of leftovers, and sustainable food practices through handouts and discussions. The Statistical Package for the Social Sciences (SPSS) was used to analyse changes in behaviour and food waste patterns before and after the intervention. The study found an average household food waste of 1 kg per day in Varanasi, with lower-middle-class households generating the most due to poor food management. Following the intervention, food waste decreased by 20%, with over 80% of participants showing a decrease improvement in

portion control and the reuse of leftovers. However, behavioural changes related to meal planning and composting remained limited, indicating a need for ongoing support and infrastructure development. Socio-economic status emerged as a significant determinant of food waste patterns. Educational interventions effectively increased awareness and reduced food waste by approximately 20%, underscoring the importance of community-based efforts. Socio-economic challenges and infrastructural limitations remain barriers. Scalable policies and sustained educational campaigns are necessary for the broader adoption of sustainable practices.

Keywords: Food Waste, Household Women, Socio-Economic Factors, Educational Intervention, Behavioral Change, Environmental Impact.

Abbreviations:

FW: Food Waste
GHG: Global Greenhouse Gas
SES: Socio Economic Status
PIS: Participant Information Sheet
KABP: Knowledge, Attitude, Belief, and Practice
FAO: Food and Agriculture Organization
HH: Household
SD: Standard Deviation

I. INTRODUCTION

Food waste (FW) is a significant global issue with far-reaching environmental, social, and economic consequences [1]. Approximately one-third of all food produced globally, amounting to 1.3 billion tonnes annually, is wasted, exacerbating climate change, food insecurity, and resource depletion. The FAO's Sustainable Development Goal Target 12.3 emphasizes halving per capita FW at the consumer and retail levels by 2030 while reducing food loss across production and supply chains [2]. Food waste accounts for approximately 8-10% of global greenhouse gas (GHG) emissions, with methane from decomposing food in landfills being a major contributor, given its potency as a greenhouse gas, trapping 28 times more heat than carbon dioxide. Globally, households and consumer-facing businesses are primary contributors to FW [1]. For instance, the EU-28 reports 57 million tonnes of annual food waste (FW), with 65% stemming from households and food services. In comparison, the United States sees 24.5 million tonnes of household waste alongside 22.7 million tonnes from consumer-facing businesses [3]. Nordic countries, such as Finland, Denmark, and Sweden, waste 20-30% of the food they purchase, and Switzerland discards one-third of its edible calories, with households being the most significant contributors. In India, research on household-level food waste (FW) is limited. However, substantial amounts of garbage are observed during social events, such as weddings, with buffet systems contributing more waste than served meals [4]. Estimates reveal high-income Indians discard 90 kg of food per capita annually, compared to 68 kg and 63 kg for middle- and low-income groups, respectively. Food

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waste has a severe impact on food security, reducing the availability of affordable, nutritious food, increasing prices, and exacerbating hunger and malnutrition, particularly among vulnerable populations. Moreover, FW undermines resource efficiency by wasting land, water, energy, fertilizers, and labour, with no corresponding benefits. Addressing food waste through sustainable practices, such as food donations, composting, and mindful consumption, can enhance resource efficiency, reduce greenhouse gas (GHG) emissions, and improve food security by redistributing edible food to those in need. This is critical, as over 795 million people globally faced chronic hunger between 2014 and 2016, highlighting the stark contrast between food waste and widespread food scarcity [3]. At the household level, FW in industrialised nations primarily arises from consumer behaviour, such as over purchasing and poor portion control, whereas in developing countries, infrastructural inefficiencies contribute significantly. Reducing food waste (FW) has multiple benefits, including mitigating climate change by lowering emissions, improving food security by increasing the availability of affordable food, and enhancing sustainability by conserving resources such as water and energy [5]. For example, strategies such as composting food waste improve soil quality and agricultural productivity, while educational campaigns can shift consumer behaviour toward more sustainable practices. Comprehensive research and targeted interventions are crucial for understanding FW patterns and designing practical solutions [6]. Policymakers, businesses, and consumers must collaborate to implement scalable policies and sustainable practices that address food waste (FW) across the supply chain. These efforts are crucial for achieving environmental sustainability, promoting food security, and fostering economic resilience amid increasing global challenges, such as climate change and population growth. Addressing FW holistically can lead to significant environmental, social, and financial benefits, making it a priority for achieving a sustainable and equitable future [1].

II. METHODOLOGY

The research comprised several components aimed at assessing and reducing food waste among women aged 18-49 in household settings in Varanasi. Ethical clearance was obtained from the Institutional Ethics Committee (IEC) to ensure the rights and safety of participants. Approval from the Health Ministry of Varanasi was also secured to conduct the survey in Ravindrapuri. Participants were informed through a Participant Information Sheet (PIS), and consent forms were collected, including information on age, occupation, and income. The research involved several steps for data collection and analysis. Participants' socio-economic status was determined using the Kuppuswamy scale.

A Pre-Knowledge, Attitude, Belief, and Practice (KABP) questionnaire was administered to evaluate participants' understanding of food waste, including questions about the usage of leftovers, composting practices, and the amount of food waste generated. Although the target sample size was 384, only 152 respondents were successfully recruited and participated in the study. For practical food waste measurement, participants were given three labelled 1 kg trash bags for Days 1, 2, and 3 to collect daily food waste, including vegetable and fruit peels and plate leftovers [7]. Nutrition education sessions were conducted using handbooks that explained the components of a balanced diet, types of food

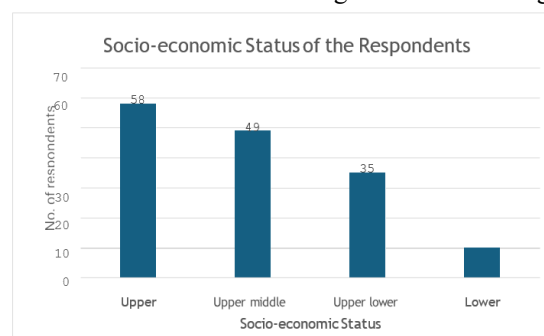
waste, and strategies for reducing waste, such as portion control and proper storage. These materials aimed to teach participants to create varied, nutritious meals and emphasize the importance of reducing food waste for health and environmental benefits. On the fourth day, the collected food waste was weighed using a scale, and the average of the three days was recorded for analysis. A post-intervention KABP questionnaire was administered using Google Forms to assess changes in the participants' knowledge, attitudes, beliefs, and practices. This comparative analysis aimed to evaluate the effectiveness of education in enhancing awareness and promoting better practices in food management and waste reduction.

Statistical analysis was performed using SPSS to identify trends and evaluate the intervention's impact. The study's methodology emphasised sustainable practices to reduce food waste, underscoring the importance of education in promoting mindful consumption and waste management. These measures aimed to improve household practices, minimise food waste, and encourage environmentally responsible behaviours, contributing to broader efforts to address food waste at the community level [7].

III. RESULTS

The study assessed food waste patterns among 152 households in Varanasi and found that 38% were upper class, 32% were upper-middle class, 23% were upper-lower class, and 7% were lower class, based on the Kuppuswamy scale. Food waste averaged 1 kg per household per day, with no significant daily variation ($p > 0.05$). Lower-middle-class households generated the most waste due to limited food management skills. In contrast, upper-class households contributed to the issue through over-purchasing and poor portion control [8].

Post-intervention, significant improvements were observed in participants' knowledge, attitudes, and behaviours. Knowledge scores increased across all 13 parameters, with substantial gains in 84% of questions (e.g., Q5, Q6, Q12; $p = 0.000$). Attitude scores improved in 73% of questions (e.g., Q1A, Q4A, Q9A; $p = 0.000$). Behaviour scores showed significant changes in 75% of questions, particularly mindful consumption practices (e.g., Q4B, Q6B, Q9B; $p = 0.000$). Practices improved in 44% of parameters, especially leftover utilization (Q1P, Q9P; $p = 0.000$). Overall, food waste was reduced by 20% after the intervention, underscoring the effectiveness of education in driving behavioural change.



[Fig.1: Socio-Economic Status of the Respondents]

Socioeconomic status (SES) was assessed using the modified Kuppuswamy Scale, which considers family income, educational level, and the



primary breadwinner's occupation. Among 152 respondents, 58 were classified as Upper Class, 49 as Upper Middle Class, 35 as Upper Lower Class, and 10 as Lower Class. Figure 1

shows the socio-economic distribution of the respondents based on the modified Kuppaswamy Scale.

Table I: ANOVA Test Results to Determine Food Waste

Summary						
Groups	Count	Sum	Average	Variance		
FWC Day1	152	151.01	0.993486842	0.58749173		
FWC Day2	152	158.5	1.042763158	0.56887178		
FWC Day3	152	161.47	1.062302632	0.61812645		
Anova						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.382308333	2	0.191154167	0.32317032	0.724017	3.015631
Within Groups	267.9479855	453	0.591496657			
Total	268.3302939	455				

The ANOVA test, as demonstrated in Table 1, was used to determine if there are statistically significant differences in the average food waste collected over the three days. The F-value of 0.3232 is much lower than the F-critical value of 3.0156, and the P-value of 0.7240 is greater than the standard significance level of 0.05.

There is no statistically significant difference in the average food waste collected across the three days. This suggests that the daily. The variation in food waste collection is not substantial, and any observed differences in means are likely due to random chance.

Table II: Mean and Standard Deviation of Knowledge Scores from KABP Questionnaire

Knowledge Questions	Mean + SD Pre Kabp	Mean + SD Post Kabp	Pvalue
Q1 How often do you utilize leftovers from meals to reduce food wastage?	3.67±0.875	3.85±0.897	0.046
Q2 Do you plan your meals before grocery shopping?	3.91±1.168	3.98±0.931	0.524
Q3 Are you conscious of portion sizes and try to minimise food waste	3.62±0.891	4.21±0.734	0.000
Q4 To what extent do you believe that food waste contributes to global malnutrition rates?	3.88±0.901	4.43±0.560	0.000
Q5 How important do you consider education and awareness campaigns about food waste management in reducing malnutrition rates?	3.61±1.110	4.34±0.745	0.000
Q6 Do you believe implementing stricter regulations and policies on food waste management can play a significant role in reducing malnutrition?	3.93±0.882	4.49±0.598	0.000
Q7 Food waste contributes to environmental problems such as:	3.28±1.050	3.68±0.732	0.000
Q8 Which of the following strategies can help reduce food waste?	4.26±1.077	4.59±0.776	0.002
Q9 Do you believe improving food waste management practices can contribute to reducing greenhouse gas emissions?	3.90±0.954	4.57±0.594	0.000
Q10 How important do you think it is to address food waste as a means to mitigate climate change?	3.59±1.176	4.51±0.620	0.000
Q11. How often do you throw away food that has expired or gone bad?	1.70±0.898	2.22±0.837	0.000
Q12 What are the consequences of food waste on global hunger?	4.14±1.074	4.57±0.873	0.000
Q13 How does food waste impact the environment?	4.42±0.903	4.76±0.620	0.000

Table 2 presents the mean and standard deviation of the knowledge scores from the pre- and post-Knowledge, Attitude, Belief, and Practices (KABP) questionnaire, along with corresponding p-values for 13 knowledge-related questions. Significant improvements were observed in all questions, with the largest increases noted in Q6 ($p = 0.000$), Q5 ($p = 0.000$), and Q12 ($p = 0.000$), indicating substantial knowledge gain following the intervention. The p-values for all questions were less than 0.05, demonstrating statistical significance in the participants' knowledge enhancement after

the intervention. The study found a direct correlation between socio-economic status (SES) and food waste levels, with households from lower-middle-class backgrounds exhibiting higher food waste. This was attributed to limited dietary diversity and inefficient food management practices in these households. Higher SES households, despite showing better awareness of sustainable consumption, still contributed to waste due to over-purchasing and poor portioning.

Table III: Mean and Standard Deviation of Attitude Scores from KABP Questionnaire

Attitude Questions	Mean + SD Pre Kabp	Mean + SD Post Kabp	Pvalue
Q1 How concerned are you about food waste in your household?	4.22±0.748	4.49±0.598	0.000
Q2 How often do you check the expiration dates on food items before consuming them?	4.24±0.867	3.91±1.076	0.001
Q3: Do you plan your meals to reduce food waste?	4.22±0.883	4.41±0.656	0.015
Q4: Do you believe that reducing food waste can have a positive impact on the environment?	4.01±0.810	4.42±0.581	0.000
Q5 How frequently do you compost food scraps or vegetable peels?	2.41±0.750	2.55±0.868	0.061
Q6 Have you ever tried to reduce food waste in your household?	3.84±0.833	3.91±0.749	0.334
Q7 How are you typically influenced to purchase food products?	3.17±1.390	3.64±1.633	0.001
Q8, Do you think food waste is a significant issue in your community?	4.28±0.655	4.64±0.480	0.000

Determinants of Household Food Waste in Varanasi: A Socio-Behavioural Analysis

Q9 How open are you to learning new ways to reduce food waste?	4.16±0.701	4.60±0.543	0.000
Q10, Do you believe that individuals have a responsibility to reduce food waste?	4.09±0.740	4.53±0.586	0.000
Q11 How often do you buy groceries in excess, leading to food waste?	3.97±0.592	4.38±0.586	0.000

The table displays the mean and standard deviation of attitude scores from the pre- and post-Knowledge, Attitude, Belief, and Practices (KABP) questionnaire, with p-values indicating significant changes. Questions Q1A, Q4A, and Q9A showed the most significant improvement ($p = 0.000$), while Q5A ($p = 0.061$) and Q6A ($p = 0.334$) showed no significant change. Table III presents the differences in attitude scores between pre- and post-intervention responses.

Overall, the intervention effectively improved attitudes towards reducing food waste. The study found that socio-economic status (SES) influenced attitudes towards food waste, with lower-middle-class households demonstrating fewer positive attitudes and practices due to limited resources and food management knowledge. Higher-SES households showed greater awareness but still struggled with portion control and overpurchasing, which contributed to food waste.

Table-IV: Mean and Standard Deviation of Behaviour Scores from KABP Questionnaire

Behaviour Questions	Mean + SD Pre Kabp	Post Kabp	PValue
Q1 .How often do you throw away food before its expiration date?	4.14±3.346	4.01±0.592	0.629
Q2 What is the primary reason for throwing away food?	2.41±0.713	2.38±0.630	0.691
Q3 How often do you plan your meals?	4.29±0.994	4.34±0.797	0.631
Q4 Are you aware of the environmental impact of food waste?	4.07±0.839	4.61±0.529	0.000
Q5 How frequently do you check the contents of your fridge before grocery shopping?	4.13±0.843	4.01±1.207	0.200
Q6 Do you understand the difference between "best before" and "expiry" dates?	3.78±0.837	4.61±0.566	0.000
Q7 How often do you use leftovers from previous meals?	3.80±1.004	4.14±0.798	0.000
Q8 Have you ever purchased groceries or meals that you ended up throwing away due to a lack of time or a change of plans?	3.76±0.787	4.13±0.864	0.000
Q9 Do you believe that food waste is a significant issue globally?	4.25±0.757	4.68±0.510	0.000
Q10 How often do you donate excess food or leftovers to food banks or community organizations?	2.52±0.884	2.78±1.085	0.004
Q11 Do you think that education and awareness campaigns on food waste can help reduce the problem?	4.12±0.788	4.67±0.471	0.000
Q12 Do you have any strategies or techniques to reduce food waste in your household?	3.53±0.813	3.72±0.653	0.010

Table IV shows the mean and standard deviation of behaviour scores from the pre- and post-Knowledge, Attitude, Belief, and Practices (KABP) questionnaire. Significant improvements were observed in the Practices (KABP) questionnaire. Significant improvements were observed in most questions, particularly in Q4B ($p = 0.000$), Q6B ($p = 0.000$), Q7B ($p = 0.000$), and Q9B ($p = 0.000$), indicating positive changes in participants' behaviours towards food waste management. However, Q1B ($p = 0.629$), Q2B ($p = 0.691$), and Q5B ($p = 0.200$) showed no significant behavioral

change post-intervention. The study found a correlation between socio-economic status (SES) and behaviour, with lower-middle-class households exhibiting less effective food waste management practices due to financial and resource limitations. Higher SES groups demonstrated a better understanding and exhibited more positive behaviour changes, although over-purchasing and portioning still contributed to waste. The intervention led to significant positive shifts in behaviour, particularly in mindful food consumption and waste reduction practices.

Table-V: Mean and Standard Deviation of Practices Scores from the KABP Questionnaire

Practices Questions	Mean + SD Pre Kabp	Post Kabp	PValue
Q1 How often do you throw away still-edible food in your household?	3.70±0.812	4.08±0.696	0.000
Q2 What is your primary reason for throwing away food?	3.85±1.375	3.28±1.256	0.000
Q3 How often do you check the expiration dates of the food items in your pantry?	4.32±0.917	3.99±1.095	0.001
Q4 How often do you plan your meals before going grocery shopping?	3.79±1.360	3.85±1.108	0.680
Q5 .How frequently do you buy groceries?	4.19±1.120	4.28±0.952	0.254
Q6. How often do you eat out instead of cooking at home?	3.50±0.891	3.80±0.841	0.000
Q7 Do you make use of your freezer to store excess food?	4.09±1.151	3.92±1.258	0.081
Q8 Have you participated in any campaigns or initiatives related to food waste reduction?	2.24±0.812	2.26±0.842	0.783
Q9 Do you convert the leftover foods into other food items?	3.68±1.494	4.23±1.315	0.000

Table V outlines changes in food waste practices before and after the intervention. The table presents the mean and standard deviation of practice scores from the pre- and post-Knowledge, Attitude, Belief, and Practices (KABP) questionnaire. Significant improvements were observed in Q1P ($p = 0.000$), Q2P ($p = 0.000$), Q6P ($p = 0.000$), and Q9P ($p = 0.000$), indicating positive changes in participants' food waste management practices. However, Q4P ($p = 0.680$), Q5P ($p = 0.254$), and Q8P ($p = 0.783$) showed no significant change in practices. The study found a correlation between socio-economic status (SES) and food waste management

practices, with lower-middle-class households exhibiting less efficient practices due to financial constraints and limited resources. Higher SES groups demonstrated greater engagement in practices to reduce food waste, although challenges such as over-purchasing persisted. The intervention improved practices, particularly in using leftovers and reducing waste.

IV. DISCUSSION

The study highlights the effectiveness of educational



interventions in addressing household food waste. Pre-existing gaps in awareness and practices were evident, particularly in portion management, food storage, and the utilisation of leftovers. The absence of significant daily variation in waste suggests systemic issues rather than transient behaviours. Post-intervention improvements in knowledge and some practices reflect the potential of targeted education to promote sustainable behaviours. However, limited changes in meal planning and composting indicate the need for practical tools and infrastructure to support these practices. The findings align with global patterns, where food waste is more pronounced in households with lower dietary diversity and inadequate resource management. The study highlights the importance of incorporating socio-economic considerations into food waste reduction strategies. It suggests that community-based educational programs can play a crucial role in promoting long-term behavioural change. Future efforts should focus on addressing infrastructural barriers and enhancing the accessibility of resources, such as composting systems and meal planning tools, to achieve sustained reductions in food waste [9].

V. CONCLUSION

The study on food waste in Varanasi concludes that significant amounts of food, particularly cereals and vegetables, are wasted at the household level, with approximately 15% of total food prepared being discarded. Food waste was more pronounced in middle-class households, attributed to better purchasing power and less efficient food management practices. A pre-intervention Knowledge, Attitude, Belief, and Practices (KABP) assessment revealed moderate knowledge but poor practices regarding food waste management, with participants demonstrating indifferent attitudes. The intervention, which involved education on balanced diets, food management, and waste reduction, significantly improved participants' awareness and practices, including better meal planning and the utilisation of leftovers. This led to an approximate 20% reduction in food waste, underscoring the effectiveness of educational campaigns in fostering behavioural change.

The findings emphasize that socio-economic factors and lack of awareness are critical drivers of household food waste. While improved knowledge and practices following the intervention were statistically significant, challenges such as infrastructural inadequacies and limited community-level waste management systems persist. Addressing food waste is crucial not only for reducing environmental impacts, such as greenhouse gas emissions from decomposing waste, but also for enhancing food security and resource efficiency. The study advocates for broader adoption of educational initiatives and sustainable practices, including composting, proper food storage, and mindful consumption. These efforts are vital for mitigating the economic, environmental, and social impacts of food waste and ensuring a more sustainable and equitable distribution of food resources [10].

LIMITATIONS OF THE STUDY

- A. A portion of the participants were unwilling to participate in the study due to recent incidents of crime and concerns over personal safety.

- B. Although the target sample size was 384, only 152 respondents were successfully recruited and participated in the study, as some refused to store their food waste due to strong beliefs that it was an inauspicious practice. Others forgot to collect the food waste.

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DECLARATION STATEMENT

After aggregating input from all authors, I must verify the accuracy of the following information as the article's author.

- **Conflicts of Interest/ Competing Interests:** Based on my understanding, this article has no conflicts of interest.
- **Funding Support:** This article has not been funded by any organizations or agencies. This independence ensures that the research is conducted with objectivity and without any external influence.
- **Ethical Approval and Consent to Participate:** The content of this article does not necessitate ethical approval or consent to participate with supporting documentation.
- **Data Access Statement and Material Availability:** The adequate resources of this article are publicly accessible.
- **Author's Contributions:** The authorship of this article is contributed equally to all participating individuals.

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Determinants of Household Food Waste in Varanasi: A Socio-Behavioural Analysis

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AUTHOR'S PROFILE



Preksha Porwal is a final-year Master's student in Dietetics and Applied Nutrition at the Welcomgroup Graduate School of Hotel Administration, Manipal. Her academic focus lies in clinical nutrition, sustainability, and public health. She is currently interning at the Tata Memorial Hospital in Mumbai, where she has gained

extensive experience in oncology nutrition, supporting patient recovery through condition-specific dietary interventions. Preksha has also conducted research on food waste and socio-economic influences on health, with her recent study titled "Determinants of Household Food Waste in Varanasi: A Socio-Behavioural Analysis," reflecting her commitment to sustainable and evidence-based solutions. In addition to her academic pursuits, she has held leadership positions, including Director of Internal Affairs at MAHE Model United Nations, where she streamlined communication and coordination. Her training at Nutridate, led by Priyanka Shah and the National Fitness and Nutrition Academy, has further refined her clinical skills. As a Mental Health First Responder with Praan Foundation, she actively contributes to holistic wellbeing and community outreach.



Neeral Gupta is a postgraduate scholar pursuing her Master's in Dietetics and Applied Nutrition with a specialization in Medical Nutrition Therapy at Welcomgroup Graduate School of Hotel Administration, Manipal. She holds a Bachelor's degree in Home Science with a focus on Nutrition and Dietetics

from the Government Home Science College, Panjab University. Neeral interned at Tata Memorial Hospital, Mumbai, and currently serves as a Junior Dietitian there, gaining hands-on experience in clinical nutrition, patient counselling, therapeutic diet planning, and NFPA. Her research, including the study "Determinants of Household Food Waste in Varanasi: A Socio-Behavioural Analysis," reflects her commitment to sustainable nutrition and public health. She brings strong skills in critical thinking, communication, teamwork, meal planning, and time management. Fluent in English, Hindi, and Punjabi, Neeral aims to integrate evidence-based practices into hospital and community settings to improve nutritional outcomes and support long-term health strategies.



Radhika Rateria is a postgraduate scholar in Dietetics and Applied Nutrition at the Welcomgroup Graduate School of Hotel Administration, Manipal. Growing up in Varanasi, she witnessed significant food waste in local households, which sparked her interest in addressing this often-overlooked issue. Her research,

titled "Determinants of Household Food Waste in Varanasi: A Socio-Behavioural Analysis," investigates the patterns and reasons behind food waste, aiming to promote sustainable behaviour at the household level. Radhika is deeply committed to community health and sustainability, developing practical, evidence-driven strategies to reduce food waste. She advocates for greater awareness and responsible food practices through education, public engagement, and research-informed initiatives that support long-term health and environmental goals.



Dr. Anusha K. Priyadarsini holds a PhD in Nutrition and specializes in Public Health Nutrition, Nutritional Biochemistry, and clinical trials. With significant experience in academic research and student mentorship, she has contributed to multiple studies addressing nutrition-related public health challenges. She played a key role in the study "Determinants of Household Food Waste in Varanasi: A Socio-Behavioural Analysis," focusing on the design of educational interventions to reduce household food waste. Her work highlights the importance of sustainable dietary practices and promotes evidence-based strategies to enhance nutritional status and public health. Dr. Priyadarsini remains dedicated to bridging research with community-focused health solutions.



Dr. Dharmapuri Raghunatha Rao is currently serving as an Adjunct Professor at the Manipal Academy of Higher Education (MAHE). He formerly held the positions of Scientist F and Head of the Extension and Training Division at the ICMR's National Institute of Nutrition in Hyderabad. With decades of experience in public health nutrition, policy development, and community outreach, he has made significant contributions to national nutrition programs and capacity-building initiatives. His work emphasizes translating research into practice through practical training and extension models. Professor Rao continues to guide academic and field-based initiatives, promoting sustainable nutrition practices and supporting the development of evidence-based strategies for improving community health.

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