

Analytical study on Adoption of Flexitarian Diet among Working Women

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ABSTRACT. Dawn Jackson Blatner writes in his book that a flexitarian diet is the most vegetarian way to lose weight, be healthier, prevent diseases, and add years to your life. The flexitarian diet is a simple formula that you need to eat more vegetarian food than non-veg. Although Flexitarian diet is not a complex type of diet planning, it is just cutting down the consumption of meat foods and other Convenience foods and eating more plant-based foods like salads, cereals, pulses, etc. Working women (age group 25-55) go through a significant change in their diet patterns after living their younger or teenage; at that age, they eat whatever they wish to and enjoy that age group. However, once they are in their early 40's, the health issue starts alarming them, where they have to think about what changes they need to bring in their daily routine. It is not in women only it is among males also, where they want to look good in society with blushing skin and fit physique and do not want to reveal their exact age. In the present study, we will aim to understand the awareness level of flexitarian diet among working women and how and why they tend to shift themselves and adopt flexitarian diet in the Indian scenario. The shifting of their diet may be because of obesity, bad eating habits, health issues, a sedentary lifestyle, not having fiber in the diet, looking younger than their age, and, most importantly, living longer. The study reflects the present stage of the Flexi diet among working women for their overall health (physical and mental) that motivates them to choose Flexi diet rather than consuming only one type of diet for years. The study will also help the working females better understand how well they are aware of the benefits and drawbacks of taking a flexitarian diet and their preparedness to adopt it.

Keywords: - flexitarian diet; working women; benefits of flexitarian diet; awareness; health issues

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1 Introduction

Flexitarian diet comprises mainly of vegetarian food with slight inclusion of meat-based or animal products. It is essentially more of a plant-based diet, or you may call it a Semi- Vegetarian diet.

We come across the Indian females who state that they eat meat occasionally or on particular days of the week, they are not entirely vegetarian neither non-vegetarian, the correct word for them to address as "Flexitarians," those who eat mainly the plant-based food, however, they include meat or chicken in their meals sometime or other.

In today's scenario, when demand for meat is increasing day by day, the dieticians are coming up with the concept of being flexitarian, planning their diet with less meat-based food starting with less meat reduction from the diet in a week to maximum dependency on plant-based nutrition. We should not forget that meat-based food is full of nutrients and a great source of proteins; however, we also know that in the later age of the '40s to '50s, high meat consumption leads to significant health issues such as heart attack, diabetes, and most awful cancer.

Indian food habits are concerned with regional climatic conditions, economic status, religion, ethics, etc. If we see it become more or less like flexitarian, but flexitarian diet is a planned diet to attain various benefits in their daily life.

The aim of considering working women in our paper is that because we believe that they adapt to the changes relatively quickly than to youth or in old age, especially middle-aged women those who always want to look young and sleek and hesitate to reveal their correct age and do not want to go through the stress of body shaming, moreover working women in Indian scenario also does not prefer or not have enough time to go to the gym rather they choose to do diet instead.

2 Review of literature

(Blantner, 2009) He writes in his book, "I am a vegetarian who is flexible enough to eat some meat, poultry, and fish—a flexitarian." The word flexitarian was adopted in 2003 by the American Dialect Society as the Most Useful Word.

Being flexitarian shifts us towards vegetarianism in a casual way where we have the liberty to eat meat / favourite meat dish as we want; this is more or less a lifestyle that gives us variety / different kinds of plant-based food items/dishes other than other dishes than meat.

Anybody can become a flexitarian at its speed of adaptation; it can be slowly adapted or maybe at once you decide to eat more plant-based diets, you can give any twist or turn to flexitarian diet plans as per your mood and choices which provide unique benefits liked weight loss, improved heart health, reduced risk to diabetes, live a longer life, less prone towards cancer, expose to new foods/dishes, satisfy cravings most important no harm to animals and maintain the ecosystem of animal and aqua life.

This kind of diet comes with five components that help to reduce our body weight drastically and able us to enjoy a balanced, flexible vegetarian diet; these five components are:

- Five flexible food groups:- this is the inclusion of 5 food groups like whole grains, fruits and salads, plant-based proteins, milk and milk products, and herbs and condiments (apple vinegar, maple syrup, honey, etc.).
- Five-week flexible diet plan: - here, we need to plan for five weeks for our breakfast, lunch, snacks, and dinner. It means we need almost 35 days of planning for each meal.
- Five main ingredient recipes: These recipes are based on becoming flexitarian, which has twofold benefits 1) easy to prepare and 2) enjoying our food. Here, on average, we must use five main ingredients to prepare our meal: healthy, quick, and convenient ingredients that reduce our dependability on processed, canned, and convenience foods.
- Five fitness conditions: - when you have tried everything thing, and you are on a flexible diet with the aim of weight loss or any other benefit, and still, you are lagging of your results, add these five fitness conditions, i.e., exercise for 30 minutes in a day for five days a week for this we need constant motivation.
- Five trouble-shooters:- there are a few trouble-shooters while we are on a flexible diet. They are like not feeling good on some days, frequent going out to restaurants and parties, controlling cravings, timings of eating meals, regularly weighing this will help not deviate from your goals.

(Cohen M. , 2021) She wrote about the frequency/intervals for consuming meat or meat products in her article. Further, she explains that less meat consumption will reduce the chance of metabolic diseases as per her, there are three levels of flexible diet patterns i.e.

Beginner: The person follows their routine with little change in meat consuming pattern usually in a week taking all three meals (21 meals/week) only person will leave seven meals that will not include meat as per his choice.

Advanced: The person has to leave 14 meals in a week as per their choice out of 21 meals per week.

Expert: Consuming only six meat meals in a week may eliminate meat from the meals.

These above levels may be achieved by various techniques such as eating a minor portion of meat, changing the meat plate with vegetables, making your favorite dishes with vegetarian options (for example, Mousskka a la Greek not with meat but with soya granules), change the method/way of cooking your regular meals or improvise/upgrade your recipes. (Derbyshire, 2017) As we are discussing, again and again, she also states that it is a semi-vegetarian diet with slight inclusion of flesh-based food now it has become a movement and making a routine of this kind of diet. The flexitarian diet makes us realize that meat is also essential in our diet as it provides us with significant nutrients like proteins, fats, and various minerals and vitamins. However, daily eating of meat-based food increases the risk of mortality, cardiovascular diseases, diabetes, and sometimes cancer.

Nowadays, this flexible diet is becoming more popular because it helps gain good health and save environmental food chain balance and ecosystem. The flexitarian diet stands justified about weight loss, hypertension, and other health concerns. A more

plant-based diet also provides dietary fiber to reduce Crohn's disease, such as inflammatory bowel disorder, which may be increased due to a more meat-based diet. A plant-based diet is somehow more cost-effective for the people as it encourages people to shift their diet towards vegetables, whole grains, legumes, fruits, nuts, and dry fruits other than animal-based food to initiate the easy transition; as per records, this transition reduces global mortality by 6% to 10%. (Streit, 2019) This article says that there are no set rules or fixed calories intake recommendations; it is a style of eating to be absorbed in a daily routine that follows any diet. However, this is also based on some principles like:

- Eating whole grains, vegetables, fruits, and leguminous plants
- Focus on plant-based proteins
- The shift from processed meat to fresh meat
- Flexible with the inclusion of meat in the diet
- Restrict on sugars and desserts

(Naaz, 2010) wrote about how health education is essential for women and what will be the impact of health education on women to know they're well being; she emphasizes over the transition period (period of menopause in middle age) of women when the women are in the minor health state when hormones are changing and also facing the physiological as well as psychological changes are lead to diseases like hypertension, cardiovascular diseases, diabetes mellitus, obesity, osteoporosis, arthritis, anemia, cervical/ breast cancer, stroke, depression, and many more communicable and noncommunicable diseases.

Diet here plays a significant role as one of the critical roles of diet and food intake is to make humans healthy and maintain their good state of body and mind; author major writings were on food habits of women during the transition phase of her life, which is majorly between 42 years to 50 years and she is in the peak of her career as well she needs to maintain work-life balance.

Naaz further added that the BMI of the working women in Urban areas were between 30-34, which falls in the category of obese and overweight, which is significantly high in the sedentary work style, food habits, and its effect on the occurrence of diseases is more in the non-vegetarian consuming women and 46% to 35% of women are observed with Coronary heart disease & Anaemia. In the case of vegetarian dietary patterns, the women are found with hypertension compared to other conditions. Women with stress were also found, and with little improvement in lifestyle and eating habits, this can also be overcome with little change in their behaviour. (Forestell, 2018) People who opt for a flexitarian diet usually do not adjust adequately or appropriately with the standard diet patterns, which sometimes leads them to overeat and affects their weight and health. This is one of the kinds of Restrained eating, which is different from restrictive eating. However, restrained eating is not taking fewer calories than recommended but eating in a controlled manner, whereas restrictive eating restricts you from eating certain foods. Restrictive eating can be fit for vegetarians. (Yadava, 2010) In her research, she found that most females only have their meals when they are starving and must eat them.

Furthermore, they tend to eat more when females are under stress conditions at work and consume more tea or coffee, sweets, cold drinks, or other tidbits in peer-group gatherings or lunch parties also work; their eating pattern changes with the know-how of diet and food consumption. In addition to the above, the author also added that the working women tend to eat their dinner with their family members and with controlled portions, along with the best use of the leftovers instead of putting it in the dustbin. . The use of fruits and salads per week has been elevated. Above mentioned practices regarding food consumption were developed in the subjects due to nutrition education provided to them. Further, the program increased the knowledge of nutrients like significantly; protein, carbohydrates, fat; vitamins, and minerals. The findings describe that there is meal frequency has been changed with the change in eating habits regarding eating fried food, sweets, and sugar, carbohydrates diet, etc. (Cohen, 2021) wrote in her blog, she mentioned that to be flexitarian doesn't mean not to eat meat at all however one can consume as and when required but concentrate more on a plant-based diet. Future, she also writes the advantages and disadvantages of being flexitarian.

The advantages of being flexitarian which is other than health benefits, are as follows:

- Variety of dishes (plenty of options from plant-based or meat-based foods).
- Adjust yourself socially by switching from vegetarian to non-vegetarian in a social gathering; it reduces the stress of carrying your food from home.
- Not to spend too much on buying meat, it saves the pocket.
- We are fulfilling the requirement of the nutrients being flexible to help us gain all the nutrients required by our body from plant-based food and meat, which helps in a healthier lifestyle.
- It saves the animals from getting slaughtered, which holds the food chain and maintains the balance in the environment.

There is another side of the coin too. The disadvantage of this flexible diet is:

- May feel something is missing from your meals; one may feel unsatisfied with diet.
- Whenever the turn of meat-based food comes, they may tend to eat more processed or junk meat-based food on feeling contented.
- May lead to some deficiencies that plant-based food may not compensate for, like becoming anemic or B12 deficiency.

There are some tips also before you shift yourself to become flexitarian so that you should not feel that something is missing from the diet and you had made a mistake for changing your diet patterns. They are:

- Eat healthy options and wholesome foods such as tofu, beans, nuts, and maybe eggs; these all contain proteins that give the feeling of fullness.
- Choose meat-based food wisely, which compensates for various deficiencies.
- Do not jump to the advanced level or expert level of flexitarian diet; go slow take incremental steps to such diet.
- Try to cook the recipes in new styles or use substitute ingredients for the same recipes

This is true that opting for a flexitarian diet will help lose weight. (Meenakshi Mathur, December, 2015) States that the women have come out of the kitchen to the workplace into many spheres of industry, including day working and shift working culture.

Women's health depends not only on biological factors but also on the workload at the workplace, nutrition, and overall stress in the work-life. They divide the women's nutritional status into two parts Biological and productive roles of women, respectively. Further, the influential roles are divided into two categories: social roles as mother, sister, wife, friend, etc. Other parts such as factory worker, clerical job, and other jobs moreover how they are in the community and how they manage themselves politically.

The Major limitation in front of the working women in the shift system is how to fulfill their productivity levels and well-being. Ironically the women who feed the family suffer from malnutrition even after earning handsomely. To upgrade the health of working women, the women must focus on their nutrition-related roles and health status

Socioeconomic and socio-cultural factors (e.g., income, literacy, traditional beliefs) simultaneously influence women's nutritional status and nutrition-related roles. In the Indian scenario, the apparent contradiction between women's primary responsibility for household nutrition (e.g., food preparation, health care) and severe malnutrition renders a simultaneous examination of these two aspects fascinating. The immediate determinants of nutritional status (dietary intake, health, and maintenance) do not differ in urban and rural contexts. But urban households may have a more difficult time maintaining adequate nutritional levels than rural ones. Due to irregular working hours, their proper eating or consumption patterns become challenging to maintain; this leads to eating more outside food, junk food, or fast food, which ultimately does not fulfill the RDA norms for working women. The shift workers have a high rate of being overweight. Changing eating habits and other lifestyle changes (including reduced exercise) among shift workers may increase their BMI, which leads to poor nutritional status. Most women who work night shifts feel mentally tired. There is no study on the effect of working hours on the stress level.

3 Objective

- To list out the prominent factors which lead to the adoption of flexitarian diet among working women
- To understand the diet pattern of working women about the flexitarian diet.

4 Research Methodology

Research Design: Descriptive cross-sectional design was adopted.

Research Locale: The Study was conducted in various cities of Punjab. Respondents were working women from all fields of life who were approached personally and through an online survey.

Sampling Size: Working women aged 25 up to 60 years were selected through purposive sampling. Total 203 respondents participated in the survey, out of which 188 respondents were adopting or using a Flexitarian diet, and the data was used for analysis.

Tools and Technique: Structured interview schedule was prepared for collecting information on the socio-demographic profile and flexitarian diet patterns with particular emphasis on the prominent factors of flexitarian diet and its diet pattern of participants. The questionnaire was developed to evaluate the awareness level among working women concerning significant aspects of flexitarian diet and the diet patterns of the same. The tool was in English. Based on the interviews' initial information, a list of possible prominent factors and awareness of flexitarian diet was prepared. Respondents were asked to rank these (list factors) elements from 1 to 5 on a Likert scale where one was least prominent and five were most prominent. Significant factors for adopting flexitarian diet factors were studied through 10 questions where respondents were asked. The data obtained from the questionnaire was analyzed through the rank method and relative Index of importance.

The relative importance of Index = $\text{Sum of weights (W}_1+\text{W}_2+\text{W}_3+\dots+\text{W}_n)/\text{A}\times\text{N}$
 Where W= weights are given to each factor by the respondents and will range from 1 to 5 where 1 is least prominent, and 5 is most prominent. A= Highest weight (i.e., 5 in each case) and N= total number of respondents.

5 Data and Statistical Analysis

Data is analyzed based on age and type of diet pattern they are following in their routine and the prominent factors that why they are adopting the flexitarian diet rather than a regular diet following

Table 1. The demographic data (Age Group of respondents)

S. No.	Particulars	Numbers	Percentage
1.	25 years to 35 years	30	16%
2.	35 years to 55 years	142	76%
3.	Up to 60 years	16	9%

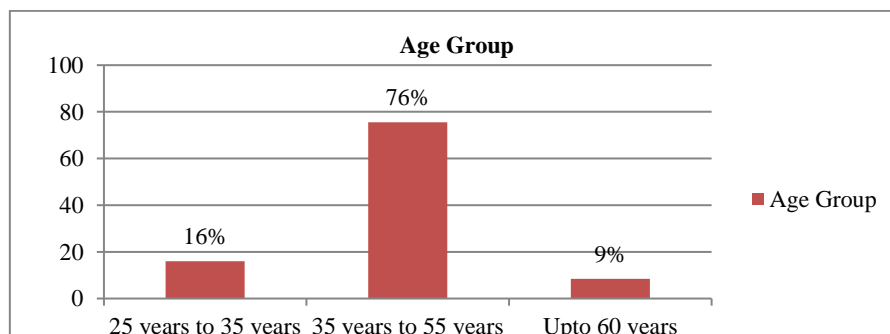


Fig. 1. Age Group of working women

Table 1 shows the age group of the respondents where the Maximum (76%) of the respondents were between the age group of 35 years to 55 years followed by the younger age (16%) group between 25 years to 35 years, and lastly, the 9% were between 55 years to 60 years.

Table 2. The demographic data: - Marital status of respondents

S.No.	Particulars	Numbers	Percentage
1.	Single	52	28%
2.	Married	85	45%
3.	Divorcee	11	6%
4.	I prefer not to say	40	21%

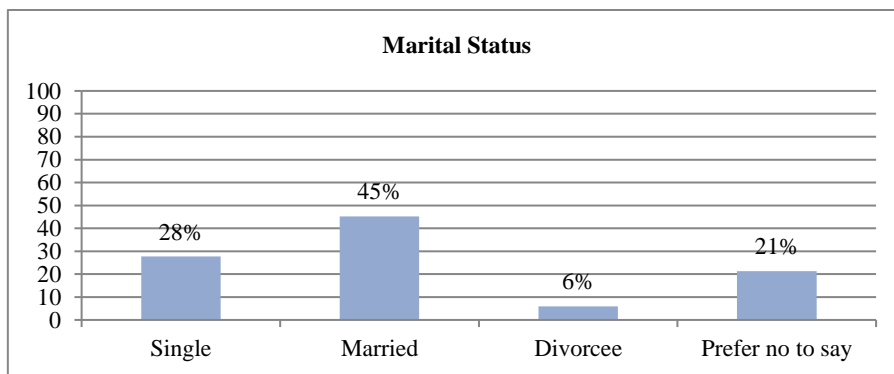


Fig. 2. Marital status of respondents

Table 2 shows the marital status of working women. The majority of the respondents (45%) were married, followed by 28%, 21%, and 6% single; some did not disclose and were divorcees, respectively.

Table 3. The demographic data: - Location of the respondents

S. No.	Particulars	Numbers	Percentage
1.	Urban	136	72%
2.	Semi-Rural /Semi-Urbann	37	20%
3.	Rural	15	8%

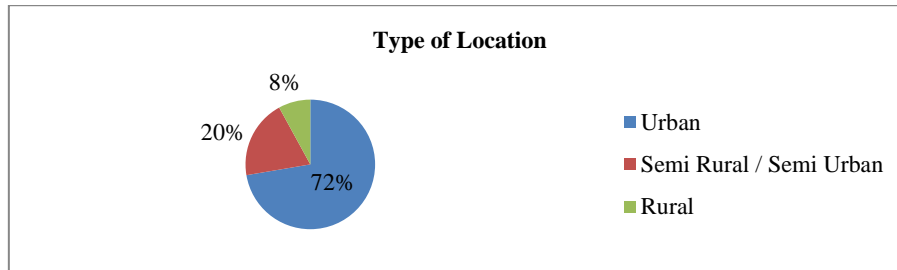


Fig. 3. Location of the respondents

Table 3 shows the location of working women and from which demographic location they belong. The majority of the respondents were urban areas, i.e., 72% and the least percentage (8%) is Rural working women, and Semi-rural or semi-urban respondents are only 20%.

Table 4. The annual income of the respondents

S. No.	Particulars	Number	Percentage
1.	Less Than 2.5 lakhs	22	12%
2.	Between 2.5 to 5 lakhs	40	21%
3.	Between 5 Lakhs to 10 lakhs	105	56%
4.	More than ten lakhs	21	11%

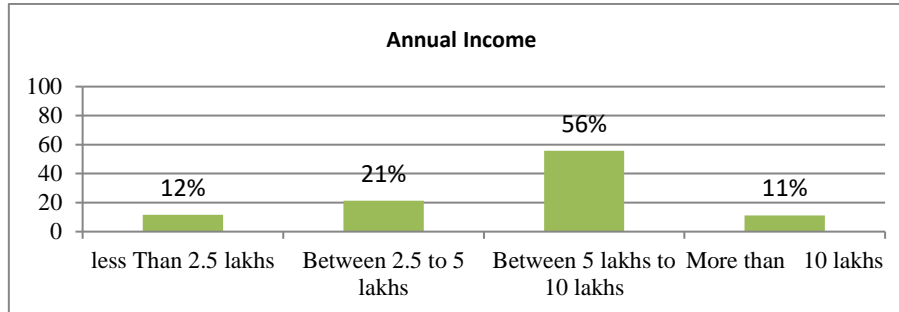


Fig. 4. Income Group of respondents

Table 4 shows that 56% of working women earn between 5 lakhs to 10 lakhs per annum, whereas 21% of annual income is between 2.5 lakhs to 5 lakhs and 12 % of working women are under 2.5 lakhs per annum. Lastly, 11% of women earn more than ten lakhs per annum.

Table 5. Kind of occupation of the respondents

S. No.	Particulars	Number	Percentage
1.	Salaried	155	82%
2.	Self Employed	30	16%

3.	Freelancer	3	2%
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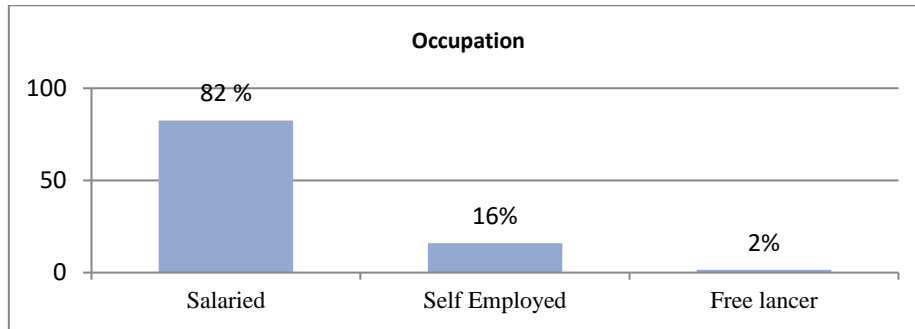


Fig. 5. Occupation of Respondents

Table 5 is about the occupation of respondents, which shows that majority of the working women are salaried from different sectors of work, 16% of them are entrepreneurs/self-employed, and 2% belong to the Freelancers or work from home.

Table 6. Purchase/ Buying Preferences of respondents

S. No.	Particulars	Number	Percentage
1.	Local Market Shops	150	80%
2.	Online Grocery Apps	20	11%
3.	Combination of above	18	10%

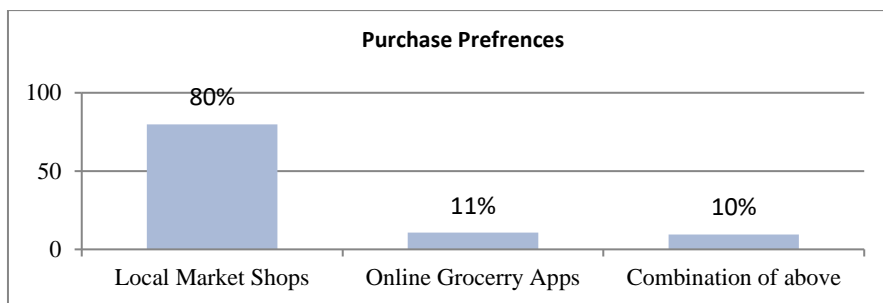


Fig. 6. Purchase/ buying preferences of respondents

Table 6 depicts the Purchase/ buying preferences of working women, which reflects that most of the respondents (working females), i.e., 80% prefer to go to the local market themselves for buying fresh ingredients, followed by 11% of those who believe only online and 10% use both the modes of purchasing/buying.

Table 7. A most reliable source from where respondents gained knowledge and awareness about flexitarian diet.

S.No.	Particulars	Number	Percentage
1.	Books	9	5%

2.	Websites/blogs	62	33%
3.	Friends and peers	41	22%
4.	Dietician	52	28%
5.	Social media	24	13%

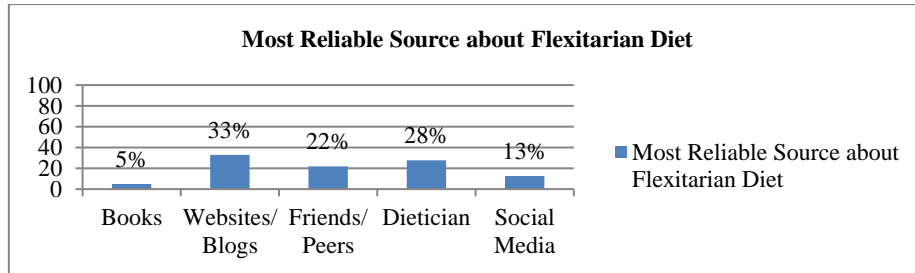


Fig. 7. Reliable source about the knowledge of flexitarian diet

Table 7 the awareness for flexitarian diet we found that 33% of respondents are getting the knowledge about this diet from websites/blogs, 28% are seeing dieticians and getting acquainted, 22% from their friends and peers/colleagues, 13% from social media and 5% of them know from books and reading material source.

Table 8. Respondents belong/ fall in which level of the flexitarian diet

S. No.	Particulars	Number	Percentage
1.	Beginner: 6–8 meatless meals/ 21 total meals each week	138	73%
2.	Advanced: 9–14 meatless meals/ 21 total meals each week	23	12%
3.	Expert: 15+ meatless meals/21 total meals each week	21	11%

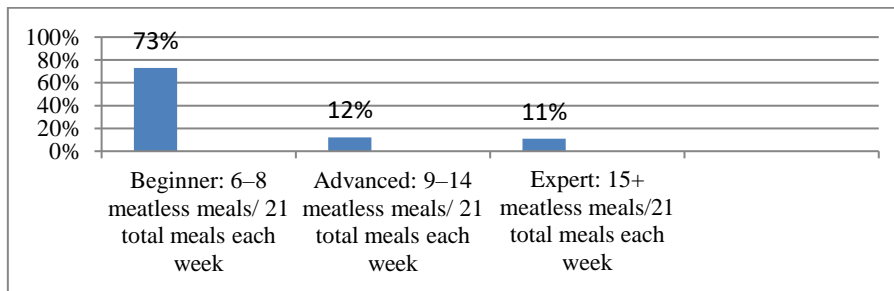


Fig. 8. Flexitarian diet consumption pattern

Table 8 Majority (73%) of respondents are on beginner level of adoption and consumption pattern of flexitarian diet which shows that slowly getting habitual for such diet. However, 11% of respondents had already achieved the expert level, and 12% on the advanced level of flexitarian diet had become semi-vegetarian in consumption pattern of their routine diet.

Table 9. Respondents follow which dietary pattern in make it a flexitarian diet

S. No	Particulars	Percentage
1.	Eat mostly fruits, vegetables, legumes, and whole grains.	64%
2.	Focus on protein from plants instead of animals.	31%
3.	Be flexible and incorporate meat and animal products from time to time.	28%
4.	Eat the least processed, most natural form of foods.	32%
5.	Limit added sugar and sweets.	58%

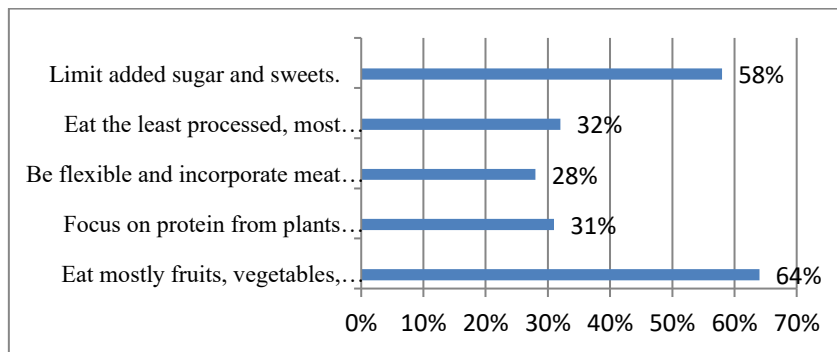


Fig. 9. Dietary Patterns

In Table 9, it is shown that respondents were liberal about the dietary options they were provided with. They are well aware of the change in diet patterns. The majority (64%) of them include fruits, vegetables, legumes, and whole grains in their diet. The limit on the sugar and sweets from their diet helps them achieve the benefit of a flexitarian diet.

Table 10. The prominent factor for which people follow a flexitarian diet

S. No	Prominent factors	RII
1	Insulin Resistance and Type 2 Diabetes	0.578
2	Weight Loss and Obesity control	0.700
3	Decreasing the Risk for Heart Disease	0.688
4	Contributes to live Longer Life	0.691
5	Reduces Your Carbon Footprint and maintain ecological balance	0.623
6	Is Easy to Follow	0.633
7	Helps in Saving Money	0.576
8	Adds to Feelings of Fullness	0.632
9	Keeps Well Nourished	0.671

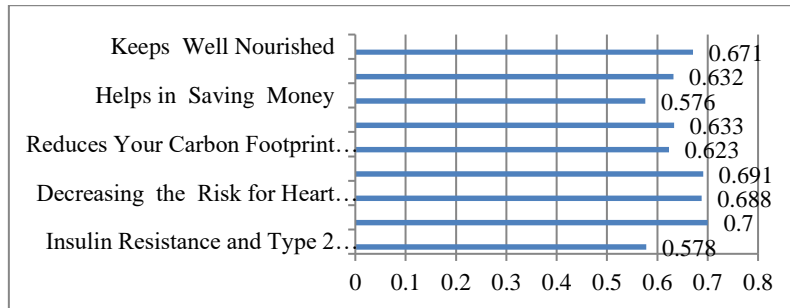


Fig. 10. The prominent factor for the adoption of the Flexitarian diet

In Table 10, it is shown that respondents told us that the prominent factor of becoming flexitarian or adopting a flexitarian diet is for weight loss and not to be obese as they are working women. They want to look good all the time among their peer group or colleagues as many are employed and do sedentary/ clerical jobs. Since 2020 they have been under lockdown where they were doing work from home, affecting their overall health and leading to obesity. From the relative importance of the Index, we conclude that the most prominent factor is weight loss, followed by reducing the risk of heart diseases and coronary diseases, most importantly diabetes.

6 Findings

From our survey on a flexitarian diet, upon the questions asked from many of the respondents answered that they had:

1. Include various plant-based ingredients in their diet and exclude the meat from that part; most respondents (78%) said they included salads, which provide fiber and give the feeling of fullness.
2. In continuation, 63.9% of respondents added dry fruits and nuts, which compensate for the protein or B12 deficit, whereas 57% of respondents answered that they make their meat portion smaller, which they were consuming earlier. Further, there is quite a list of ingredients/ dishes included, like almond milk, soya chunks, soya milk, broccoli pulao or vegetable pulao, tofu, multigrain roti or bread, whole grains, introducing new grains like quinoa than regular grains, etc.
3. As per the diet pattern of working women, respondents are well aware of the flexitarian diet and incorporate various substitutes instead of meat products like curd, whole foods, and raw vegetables. Eating fish is still preferred over red meat by the respondents.
4. All the respondents are adopting a flexitarian diet or visiting a dietician for taking any other kind of diet. The most prominent factor which motivates the respondents for weight loss and obesity control (0.7 on the scale of relative importance index and followed by living longer and healthier life (0.691 on RII) reason for their diet shift or tend to change their diet patterns.

7 Conclusion

Awareness about the flexitarian diet and its prominent factors/benefits plays a significant role in adopting the flexitarian diet. Acceptance of flexitarian diet is still in the preliminary stage where people are still in the process of getting aware and adopting the flexitarian diet. This research established that mainly working women become flexitarian for attaining the ideal weight and overcoming obesity issues, followed by a decrease in heart diseases. However, in all situations, accurate and reliable data on the flexitarian diet is required for profound studies of the flexitarian eating habits patterns; more of the assessment is necessary to establish dietary patterns. Finally, we come to consciences that start from the beginner's flexitarian pattern towards the expert level and replace meat from the diet slowly with other food options which provide equivalent nutrients in the diet of one to fight against the diseases and maintain good health along with more life.

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