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Assessment of Correlation between Food Choices and Fertility Status in Females

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Abstract A rapid change in the eating patterns and choices of food has been observed globally. These changes, however, are not without consequences. Like many other health related problems, infertility is also on the rise, where 1 in every 4 couples is battling with it. It has been long known that increased and decreased BMIs can both cause deranged fertility but recently many women with normal body weights have been reported to suffer from infertility at some stage of their lives or the other. A survey was conducted to compare the food choices of 240 fertile and 77 infertile females in order to assess the correlation between their eating patterns and fertility status. Pregnant fertile females were found to be consuming carbohydrates and carbonated drinks in higher frequency than infertile ones and non-pregnant fertile were consuming proteins in greater quantities than infertile one. It has been thus postulated that more research needs to be done in this area on a broader scale in order to identify the foods that have a negative or positive impact on fertility status of females. Due to a limited number of participants from a local area, the research cannot be called conclusive.

Keywords: *nutrition, fertility, infertility, Obesity, underweight, female fertility*

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1. Introduction

A rapid change in the eating patterns and food choices has been observed globally. Rapid urbanization, mass media influence and easier availability of foods has been associated with these changes. Availability of cheaper oil and fats has increased the intake of fats all around the world. The amount of fats in foods also enhance their palatability by making them tastier thus further supporting their consumption. Once considered to be the foods of the rich, fatty foods are now consumed by people belonging to all socioeconomic classes [13]. Excessive intake of diets rich in partially hydrogenated fats and low in fiber has been observed globally and the toll of such diets on health is high. Increasing availability of such diets and their cheaper rates both contribute to more and more people consuming them all over the world [38]. Another major contributor to the ever-changing food choices is the increasing influence of mass media and the marketing industry on every aspect of peoples' lives. The changes in eating patterns has resulted in increased intake of foods rich in fats and in turn an increase in the rate of obesity. Along with its adverse effects on other areas of health, consumption of foods rich in fats and refined sugars is also related to serious impacts on reproductive health. The resultant increase in BMI and in turn obesity in people consuming such foods is a well-known reason of infertility and subfertility in both men and women.

According to WHO, over weight and obesity are defined as excessive body fat accumulation that imposes a risk to an individual's health. Infertility is defined as the failure of a couple to conceive after 1 years of unprotected intercourse [48]. A simple criteria to assess whether a person is of normal body weight or not is to calculate his/her BMI (body mass index). BMI can be calculated by diving a person's weight in kilograms with his height in meters square. A person with BMI of more than 25 is considered to be overweight and that over 30 is considered obese, whereas, a person with BMI under 18 is considered to be underweight.

Just as obesity negatively affects the fertility status of females, low BMI also has adverse effects on it [46]. In fact, researches have shown that 12% of all the reported cases of infertility are because of low BMI of the concerned female. Many women in developing countries are malnourished due to poverty and gender bias when it comes of food distribution in families. Whereas in developed parts of the world the massive impact of mass media and the unrealistic standards of beauty compelling females to adopt bizzare eating patterns and the prevalence of eating disorders are one of the major factors contributing to many young women being underweight. Sex hormones are fat soluble and if a woman has too little fat on her body then she can have a reduced level of estrogen which can lead to abnormal menstrual cycles and even cause anovulatory cycles, that is a menstrual cycle without the release of ovum or amenorrhea, which is cessation of menstruation. Excessive physical exercise and

resultant low BMI, as seen in many athletes, has shown to cause ovulatory disorder infertility (Edwards et al. 2002).

Although both obese and underweight women are seen to suffer from infertility, there is an increasing number of women with normal body weights who are infertile. Similarly, many obese and underweight women conceive normally and successfully. These facts compel us to check the diets of women to assess the correlation of their eating patterns with their fertility status. Rate of consumption of particular food groups by both fertile and infertile females and their said impacts on fertility status can be assessed by comparing the food choices and eating patterns of these women. Certain foods, like soy and caffeine, have been previously seen to negatively affect fertility [24]. Similarly foods like nuts and beans are known to be fertility enhancers [17].

According to a recent report of WHO, one in every four couples of the world suffer from infertility at some stage of their lives or the other. A recent research published in Forbes has shown that Pakistan is ranked 165 (out of 194 countries) among the world's fattest countries, with 22.2% of individuals above the age of 15 years being obese. This means that one in every four Pakistani adults is over-weight. According to National Nutritional Survey (NNS) conducted in 2011, 58.1% of Pakistani households are food insecure where women and children suffer from malnourishment. Half of the total number of women and children suffering from malnourishment come from just three countries and Pakistan is one of them [47]. Whereas the prevalence of infertility is Pakistan is around 21.9% [27]. This shows that it is a widely prevalent problem and there is a dire need for research to be done in this area.

2. Materials

2.1. Study Plan

This Case- Control study will be conducted in both rural and urban settings in Gujrat, Pakistan. The study will be interview based which will be conducted through questionnaires. At least 50 cases and 50 controls will be interviewed and their profiles will be compared and analyzed.

The Control group will consist of fertile females, whether obese or of normal body weight, whereas the Case group will comprise of women suffering from either primary or secondary infertility.

2.2. Settings

RHC Daulat Nagar, Gujrat. (Rural)
Punjab Medical Centre, Gujrat. (Urban)

2.3. Duration

A duration of 6 months is set for the collection of data. If the benchmark of 50 cases and controls is not achieved in 6 months then the duration will be extended.

2.4. Materials

All participants will be given a consent form that they will read and sign. In case the patient is illiterate, the form will be read to her and her thumb print will be taken.

3. Method

Patients attending the OPD at RHC Daulat Nagar and Punjab medical Centre, Gujrat, during the period of 6 months will be eligible to be included in the research. A brief history will be taken from them in which it will be assessed whether they fit the criteria to be included in the

3.1. Selection of the Participants

1. Participant should be married
2. Participant should be willing to enter the research and sign a consent form.
3. Participants who either suffer from primary or secondary infertility or have had a bad obstetrical history are eligible to enter the research.
4. For control group all participants who are fertile and have had good obstetrical history are eligible.
5. For case group, participants must be suffering from primary or secondary infertility.
6. Age limit is 18 to 40 years.

3.2. Criteria of Exclusion

1. Women who have male partners with deranged semen analysis.
2. Women who have secondary infertility due to endometrium damage after DNC (dilatation and curettage)
3. Women who suffer from congenital defects of uterus or ovaries.
4. Females above the age of 40 and below the age of 18 years.

After filtering through the above mentioned criteria, the participants, both case and control groups, will be interviewed and the information gathered from them will be filled in the questionnaire. The questionnaire will have following sections:

1. Social history
2. Family history
3. Medical history including sexual history.
4. Nutritional history including Food frequency checklist.
5. Anthropometric measurements.

The data thus collected will be analyzed using t-test at Minitab. Comparisons will be made between the food choices of fertile and infertile group using cross tabs and other relevant tests.

4. Results

According to the Table 4.1. the frequency of consumption of cereals/grain and soft drinks is significantly different between the fertile and infertile groups of females. Rest of the food groups show no significant differences between the fertile and infertile groups.

Table 4.1. Table for t-test of equality of means

t-test for Equality of Means			
Sig.(P)		Mean Difference	Std. Error Difference
cereals and grains	.001	.4399026	.1297287
milk group	.121	.1638021	.1052273
meat group	.149	.2207766	.1526423
vegetables	.216	.1178571	.0558495
fruits	.463	.0556948	.0757351
potato chips	.230	.0582503	.0484053
soft drinks	.000	.3694911	.0743088
juices	.234	.1094610	.0917274

Table 4.2. Comparison of consumption frequency of cereals and grains between fertile and infertile females

		cereals and grains					Total
		2 per day	3 per day	4 per day	4 per week	5 per day	
fertility status	fertile	54	96	69	0	21	240
	infertile	13	22	29	13	0	77
Total		67	118	98	13	21	317

The P value is 0.001 which shows that the frequency of consumption of cereals and grains is significantly different between fertile and infertile females. According to the data collected, the females of fertile group are consuming more carbohydrates than the infertile.

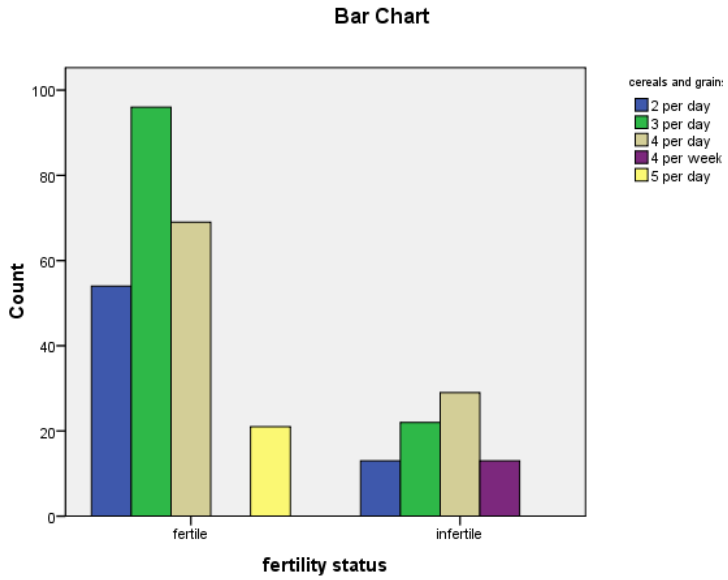

Figure 4.1. Comparison of consumption of cereals and grains between fertile and infertile females

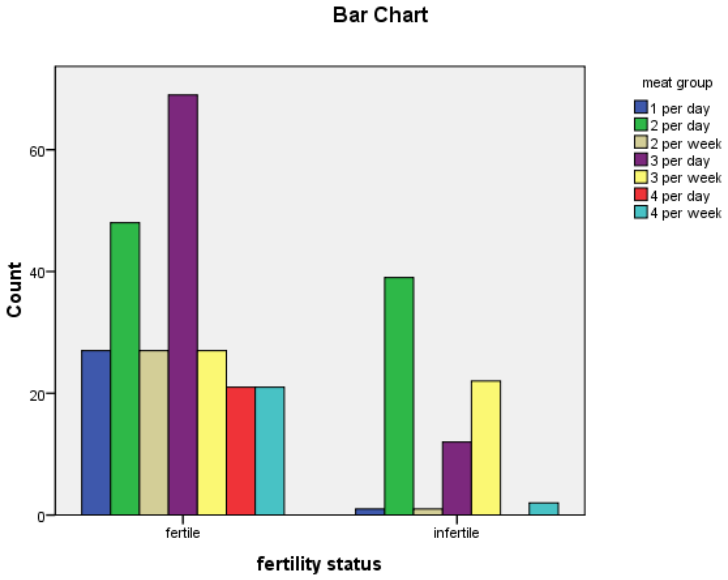

Figure 4.2. Relation between frequency of meat consumption and fertility status

Table 4.3. Relation between consumption of meat with the fertility status of females

		meat group							Total
		1 per day	2 per day	2 per week	3 per day	3 per week	4 per day	4 per week	
fertility status	fertile	27	48	27	69	27	21	21	240
	infertile	1	39	1	12	22	0	2	77
Total		28	87	28	81	49	21	23	317

P value is 0.149 which is insignificant and implies that the females in fertile and infertile groups are consuming meat in approximately the same frequency. (it should be noted that here 1 per day is taken as a reference and 1 per day = 2.5 servings of carbs)

Table 4.4. Relation between the frequency of consumption of milk and fertility status

		milk group								Total
		1 per day	1 per week	2 per day	2 per week	3 per day	3 per week	4 per week	none	
fertility status	fertile	48	0	111	27	0	0	27	27	240
	infertile	6	1	24	18	4	13	8	3	77
Total		54	1	135	45	4	13	35	30	317

P value is .121 which shoes that the difference between the consumption of milk between the fertile and infertile groups is insignificant.

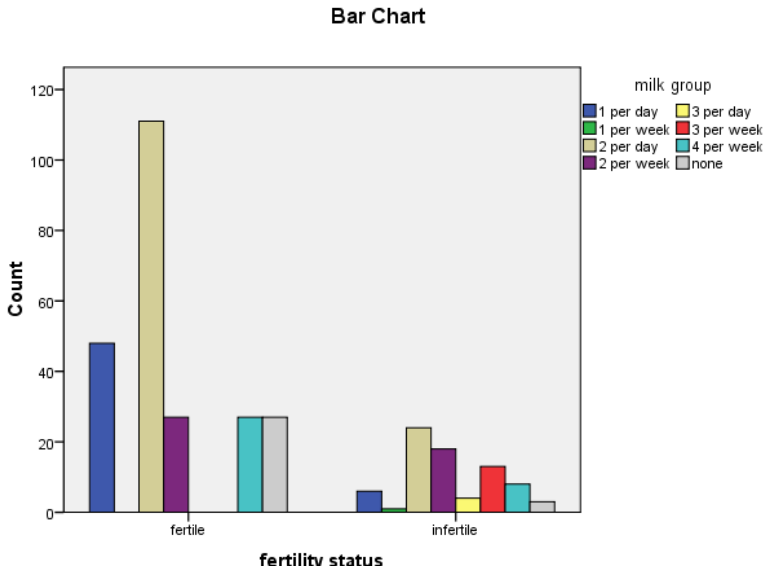

Figure 4.3. Relation between consumption of milk and fertility status

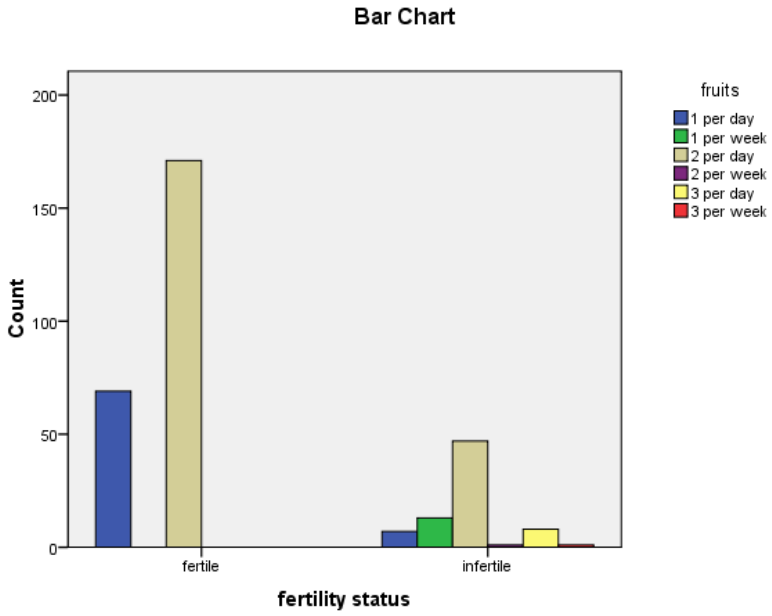

Figure 4.4. Relation between consumption of fruits and fertility status

Table 4.5. Relation between consumption of fruits and fertility status

		fruits						Total
		1 per day	1 per week	2 per day	2 per week	3 per day	3 per week	
fertility status	fertile	69	0	171	0	0	0	240
	infertile	7	13	47	1	8	1	77
Total		76	13	218	1	8	1	317

P =0.463 which is insignificant and implies that frequency of consumption of fruits is comparable between the fertile and infertile groups.

Table 4.6. Relation between frequency of vegetable consumption and fertility status of females

		vegetables			Total
		1 per day	2 per day	3 per day	
fertility status	fertile	21	192	27	240
	infertile	0	11	66	77
Total		21	258	38	317

P value if 0.216 which shows insignificant difference in consumption frequency of vegetables between fertile and infertile groups.

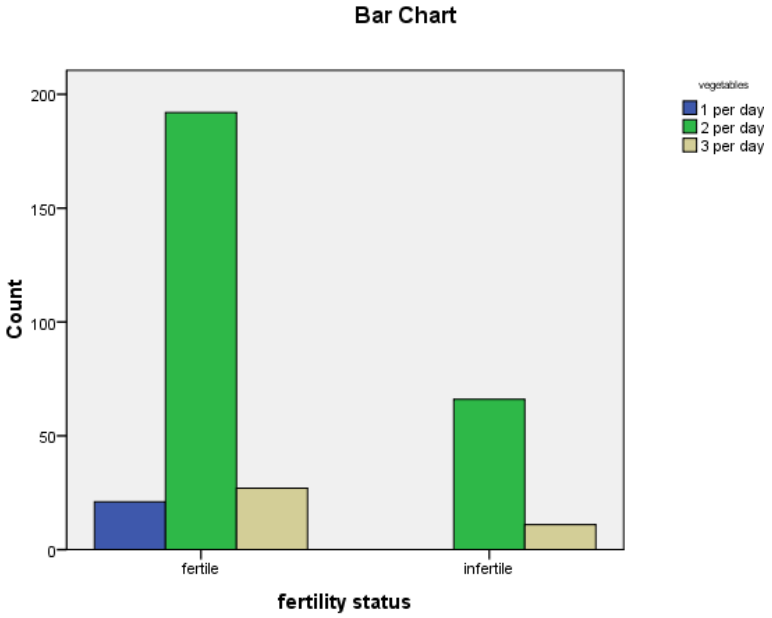

Figure 4.5. Relation between frequency of consumption of vegetables and fertility status of females

Table 4.7. Comparison of frequency of consumption of potato chips in fertile and infertile groups

		potato chips					Total
		1 per day	1 per month	1 per week	2 per day	none	
fertility status	fertile	48	21	75	0	96	240
	infertile	6	0	46	1	24	77
Total		54	21	121	1	120	317

P=0.230 which shows insignificant relation between potato chips intake and fertility status.

Table 4.8. Relation of food preparation methods (whether in ghee or oil) with fertility status

		cooking oil or ghee		Total
		cooking oil	ghee	
fertility status	fertile	168	72	240
	infertile	41	36	77
Total		209	108	317

Table 4.9. Relation between consumption of tea and fertility status of females

		tea				Total
		1 per day	1 per week	2 per day	none	
fertility status	fertile	56	0	22	162	240
	infertile	21	1	24	31	77
Total		117	1	96	103	317

P=0.003, showing significant difference between the intake of tea between fertile and infertile group.

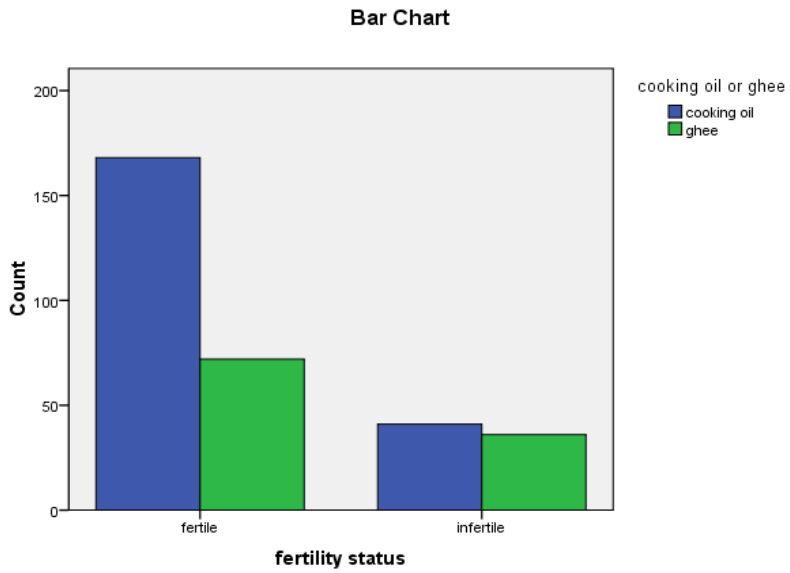

Figure 4.6. Relation of food preparation methods (ghee or oil) with fertility status

Table 4.10. Relation between supplement intake and fertility status of female

		supplement intake		Total
		yes	no	
fertility status	fertile	48	192	240
	infertile	26	51	77
Total		74	243	317

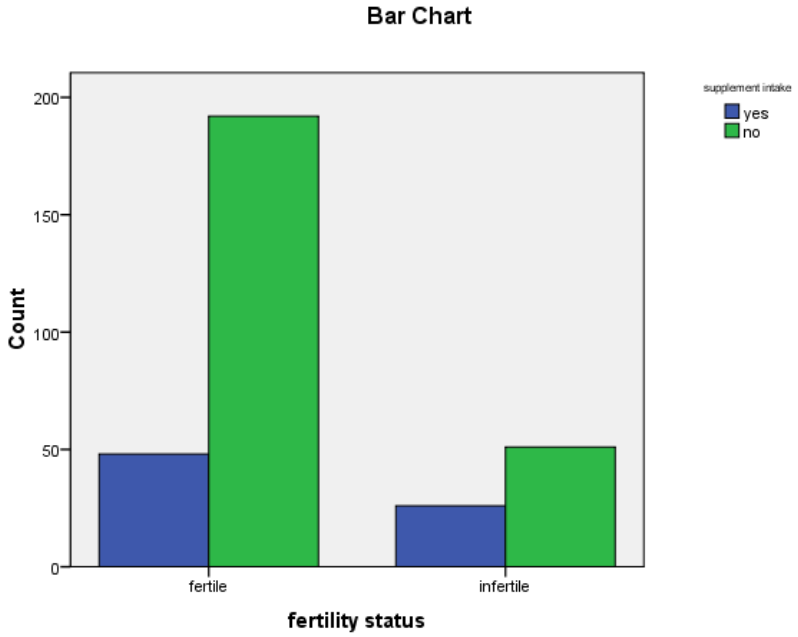

Figure 4.7. Relation between supplement intake and fertility status

Table 4.11. Relation between consumption of nuts and fertility status of research participants

		nuts					Total
		1 per day	1 per month	1 per week	4 per week	none	
fertility status	fertile	84	9	33	0	114	240
	infertile	20	1	24	0	32	77
Total		87	19	57	5	149	317

P value is 0.100 which is insignificant.

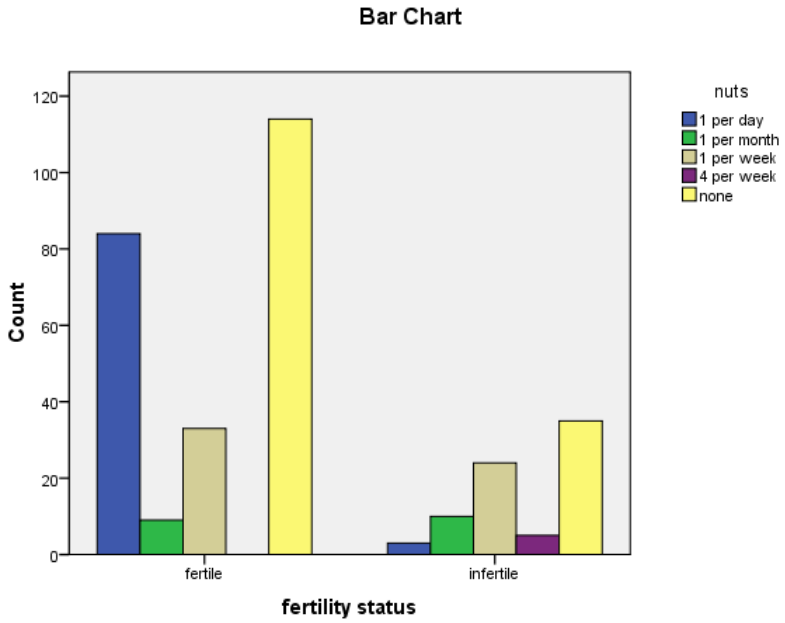

Figure 4.8. Relation between consumption of nuts and fertility status

Table 4.12. Relation between BMI and fertility status

		BMI					Total
		underweight	normal	overweight	obese	Morbidly obese	
fertility status	fertile	0	102	111	27	0	240
	infertile	1	30	24	21	1	77
Total		1	201	66	48	1	317

The BMIs of fertile and infertile group are seen to be comparable.

Following are the results of comparison between food choices of non-pregnant fertile women and infertile women. These results are compiled by taking 77 non-pregnant fertile women and 77 infertile women from the data.

Table 4.13. Relation between carbohydrate consumption of non-pregnant fertile and infertile women

		4 per day	6 per day	8 per day	10 or more per day	Total
fertility status	fertile	17	31	22	7	77
	infertile	13	26	29	9	77
Total		30	57	51	16	154

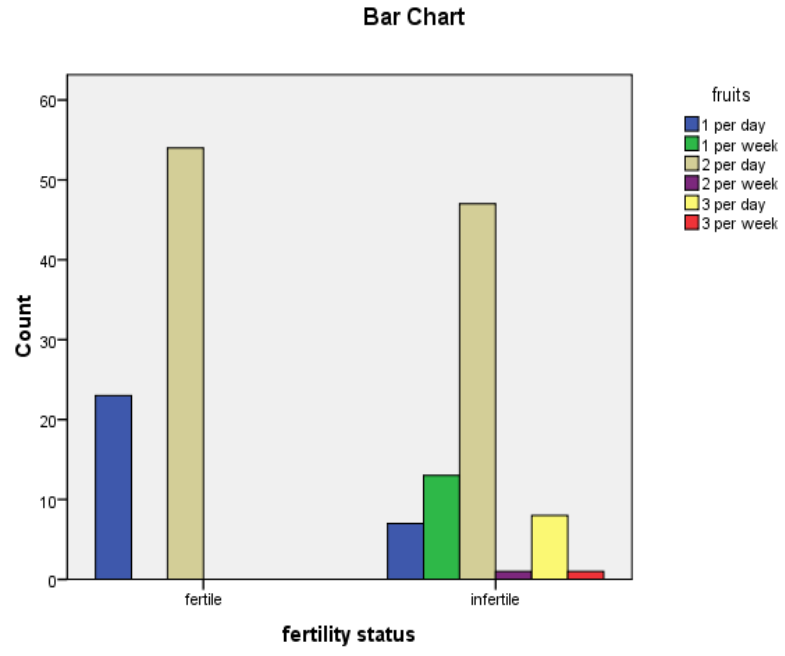

Figure 4.9. Bar chart of comparison of frequency of consumption of fruits between non-pregnant fertile and infertile women

Table 4.14. Comparison of frequency of consumption of fruits between non-pregnant fertile and infertile women

		fruits						Total
		1 per day	1 per week	2 per day	2 per week	3 per day	3 per week	
fertility status	fertile	23	0	54	0	0	0	77
	infertile	7	13	47	1	8	1	77
Total		30	13	101	1	8	1	154

Table 4.15. Comparison of frequency of consumption of vegetables between non-pregnant fertile and infertile women

		Vegetables			Total
		1 per day (~2 servings)	2 per day (~4 servings)	3 per day (~6 servings)	
Fertility status	fertile	7	61	9	77
	infertile	0	66	11	77
Total		7	127	20	154

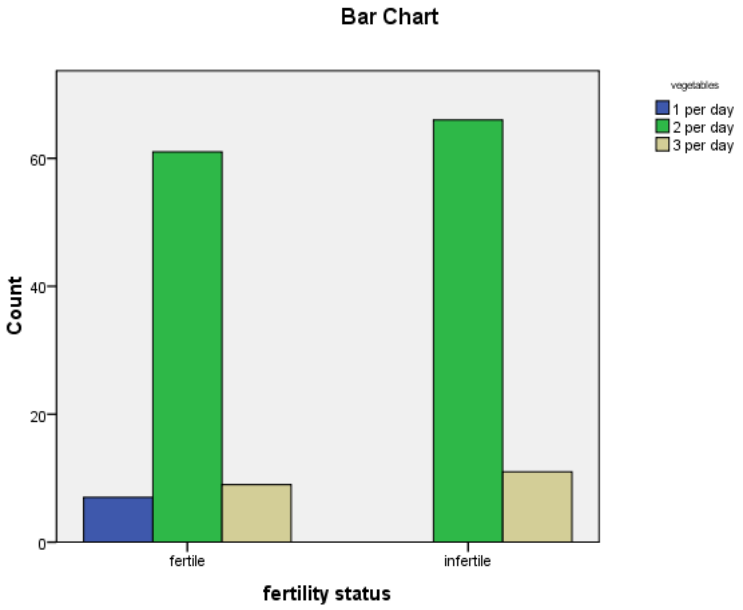

Figure 4.10. Bar chart of comparison of frequency of consumption of vegetables between non-pregnant fertile and infertile women

Table 4.16. Relation between frequency of consumption of meat between non-pregnant fertile and infertile females

		meat group							Total
		1 per day	2 per day	2 per week	3 per day	3 per week	4 per day	4 per week	
fertility status	fertile	9	15	9	22	8	7	7	77
	infertile	1	39	1	12	22	0	2	77
Total		10	54	10	34	30	7	9	154

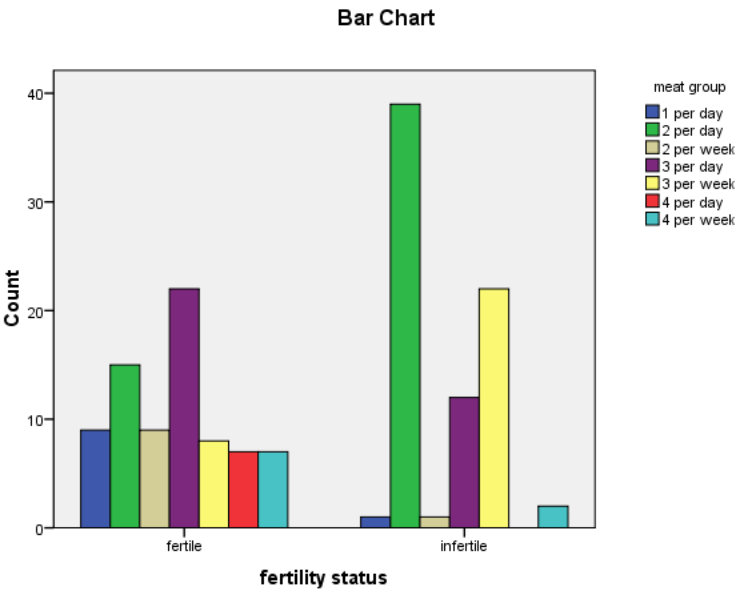

Figure 4.11. Bar chart relation between frequency of consumption of meat between non-pregnant fertile and infertile females

Table 4.17. Relation of frequency of consumption of tea between non-pregnant fertile and infertile females

		Tea				Total
		1 per day	1 per week	2 per day	none	
fertility status	fertile	31	0	23	23	77
	infertile	21	1	24	31	77
Total		52	1	47	54	154

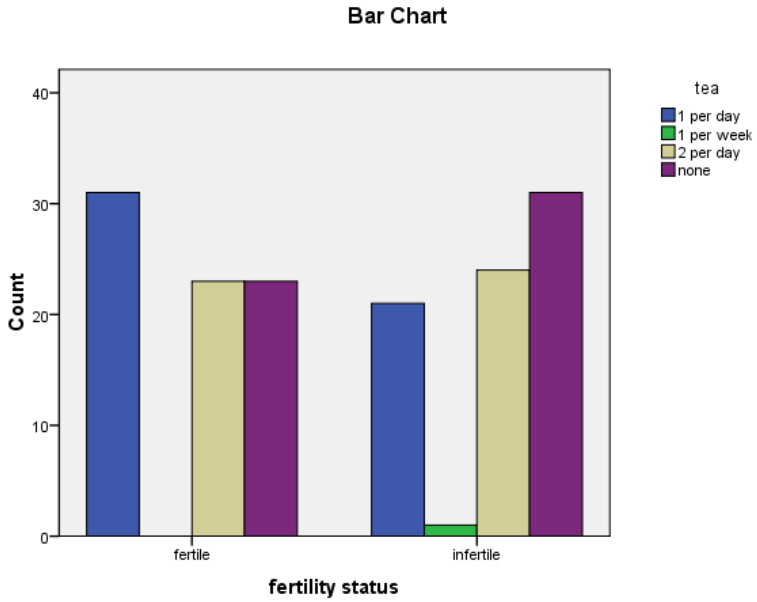

Figure 4.12. Bar chart of relation of frequency of consumption of tea between non-pregnant fertile and infertile females

Table 4.18. Comparison of frequency of consumption of nuts between non-pregnant fertile and infertile women

		Nuts					Total
		1 per day	1 per month	1 per week	4 per week	none	
fertility status	fertile	26	3	10	0	38	77
	infertile	3	10	24	5	35	77
Total		29	13	34	5	73	154

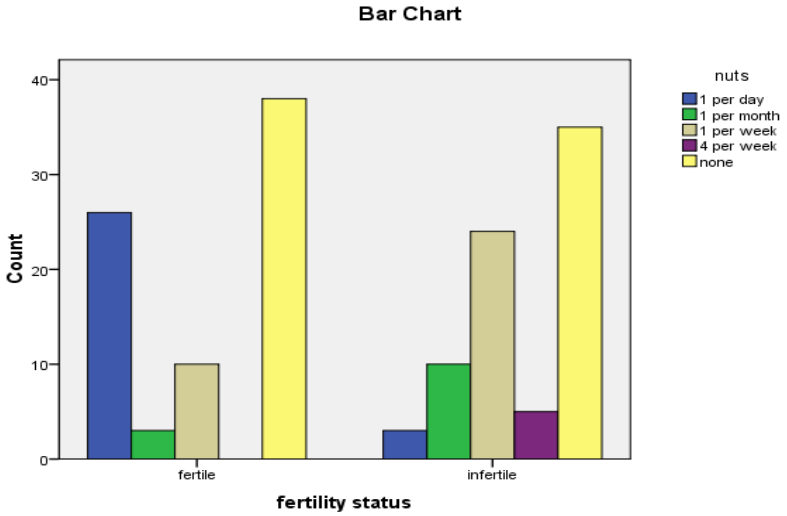

Figure 4.13. Bar Chart of comparison of frequency of consumption of nuts between non-pregnant fertile and infertile women

Table 4.19. Comparison of ingestion of milk group between non-pregnant fertile and infertile females

		milk group								Total
		1 per day	1 per week	2 per day	2 per week	3 per day	3 per week	4 per week	none	
fertility status	fertile	15	0	35	8	0	0	8	11	77
	infertile	6	1	24	18	4	13	8	3	77
Total		21	1	59	26	4	13	16		154

Table 4.20. Comparison of methods of preparation of food between non-pregnant fertile and infertile females

		cooking oil or ghee		Total
		cooking oil	ghee	
fertility status	fertile	54	23	77
	infertile	41	36	77
Total		95	59	154

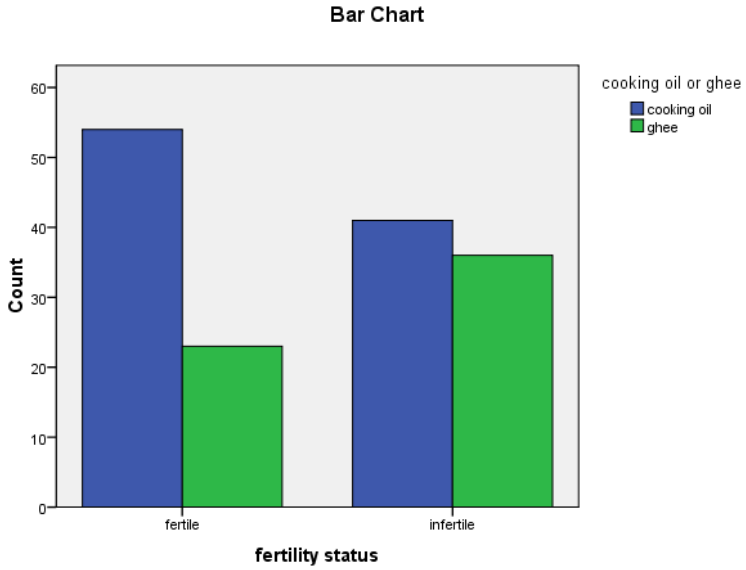

Figure 4.14. Comparison of methods of preparation of food between fertile and infertile females

Table 4.21. Relation of consumption frequency of soft drinks between non-pregnant fertile and infertile females

		soft drinks					Total
		1 per day	1 per month	1 per week	2 per day	none	
fertility status	fertile	32	7	16	7	15	77
	infertile	9	7	51	1	9	77
Total		41	14	67	8	24	154

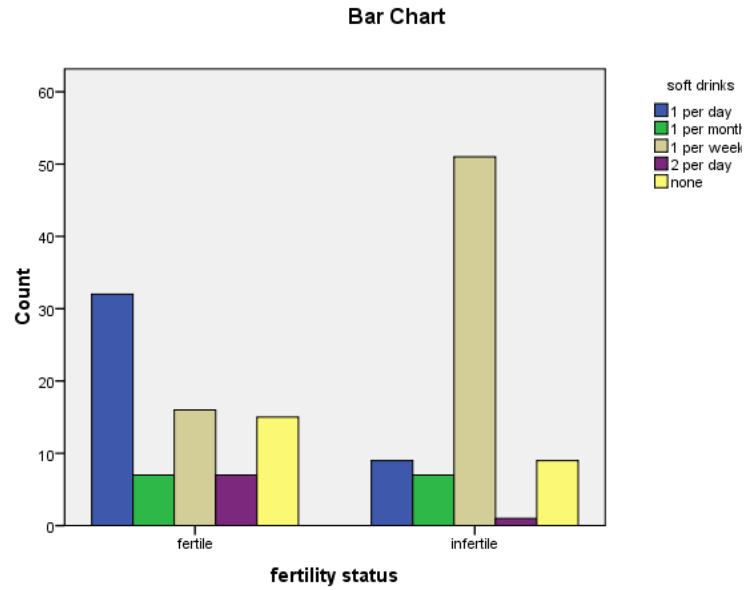

Figure 4.15. Bar chart of relation of consumption frequency of soft drinks between non-pregnant fertile and infertile females

Table 4.22. Comparison of BMIs of non-pregnant fertile and infertile females

		BMI					Total
		underweight	normal	over weight	obese	morbidly obese	
fertility status	fertile	0	55	14	8	0	77
	infertile	1	30	24	21	1	77
Total		1	85	38	29	1	154

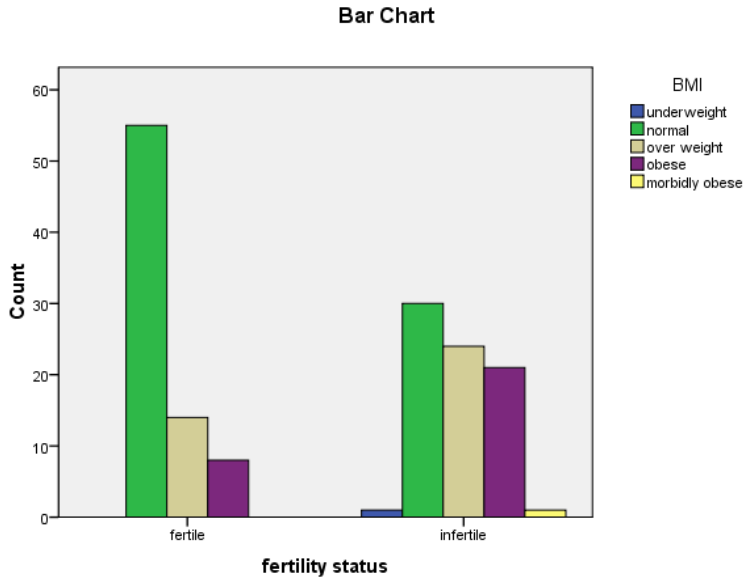

Figure 4.16. Bar chart of comparison of BMIs of non-pregnant fertile and infertile females

Table 4.23. Comparison of food groups between non-pregnant fertile and infertile groups

groups	Carbs (servings per day)			Meat (servings per day)			Fruits (servings per day)		
fertile	normal	increased	decreased	normal	increased	decreased	normal	increased	decreased
	40%	38%	22%	38%	0%	62%	16%	0%	84%
infertile	normal	increased	decreased	normal	increased	decreased	normal	increased	decreased
	34%	49%	17%	16%	0%	84%	18%	0%	82%
Recommended (servings per day)	6-7			3-6			4		
groups	Vegetables (servings per day)			Milk (servings per day)					
fertile	normal	increased	decreased	normal	increased	decreased			
	79%	12%	9%	46%	0%	64%			
infertile	normal	increased	decreased	normal	increased	decreased			
	85%	14%	1%	36%	0%	64%			
Recommended (servings per day)	3-4			2-3					

5. Discussion

A rapid change in the eating patterns all around the world has been noted in recent times. Many factors have been linked to this global change, like fast urbanization, media influences, easy availability of food etc. A rapidly increasing trend is consumption of excessive amounts of foods rich in fats. The reason behind this is the cheaper rates, easy availability and high level of palatability of foods that are high in fats [38]. This practice in turn has increased the number of overweight and obese persons all around the world. In contrast to this, the criteria of beauty, as imposed on women by media, is based hugely on thinness of their frames. Many young women battle with body image issues because of the impossible to achieve body types that are being promoted on the glossy magazines and TV round the clock. This has forced many young women of childbearing age to adopt unhealthy eating patterns. Along with this, in many developing countries, women are still treated as a lesser gender and thus the better portions of food are fed to the male members of the family. Women in these settings are undernourished and anemic and typically have lower than normal BMIs (Gonzalez et al. 2003).

A simple criterion to judge whether a person is of normal body weight or not is to calculate his/her BMI (body mass index). A BMI too high or low, both have deleterious effects on health, especially reproductive health. It has been proven by many researches that both high and low BMIs have been linked to infertility or late conception [25,46]. In this research, however, we have come to see that there has not been any significant differences between the BMIs of fertile and infertile women, where the average BMI of both groups is nearly 25, which is considered to be normal.

Out of the 240 fertile females, 102 were non pregnant. The results were compiled after evaluating the data in two parts. In first part, we evaluated all 240 fertile women against the 77 infertile. Whereas, in the second part, we took 77 non pregnant women randomly from the 102 fertile females and compared them with the 77 infertile ones.

BMIs of both fertile and infertile groups were seen to be comparable during the research. 102 out of 240 (43%) fertile females were of normal body weight. Whereas, 30 out of 77 (39%) infertile women of normal body weight. 111 out of 240 (46%) fertile and 24 out of 77 (31%) infertile women were overweight. 11% of fertile and 27 % of infertile females was found to be obese. However,

when the non-pregnant fertile women were compared with infertile ones 77% of fertile women and 39% of infertile was of normal body weight. 18% of fertile and 31% of infertile women was over-weight. Only 10% of fertile women and 27% of infertile women was found to be obese. Only 1 out of 77 infertile women was found to be morbidly obese where as none of the fertile women were.

It has been seen in the past that the infertile women have been taking folic acid supplementations more often than the fertile ones [33]. It is mostly because the doctors that they consult for the treatment of infertility prescribe these supplements. In our research, 20% (48 out of 240) fertile women were taking supplements, mostly iron and calcium. Whereas, 33% (26 out of 77) in fertile females were taking supplements, mostly folic acid. Most of the infertile women who were not taking any supplements had not been to any health facility before and thus did not know about the beneficial effects of supplement intake. Among the pregnant women, the trend of supplement intake was very low. A lot of them complained about the after taste of the supplements and many reported that their in laws did not let them take any or did not provide them the money to buy the supplements. The older women of the families thought that supplements were just a way of doctors to make money and argued that they never took any medications when they were pregnant and had healthy babies so there was no need for them.

As for the food choices and eating patterns, not many differences were seen between the fertile and infertile groups. However, women belonging to the fertile group were consuming carbohydrates in much larger quantities than those in infertile group (P=0.001). This could be due to pressure from the family and advice of doctors or due to increased appetite because of pregnancy. Most of the women, irrespective of the group they belonged to, preferred to have paratha in breakfast (180 out of 240 women in infertile group and 52 out of 77 women in fertile group). Number of bread eaters was significantly less (only 50 in infertile and 8 in fertile group). Rest were taking roti. There was no significant difference between the non-pregnant fertile and infertile groups as far as carbohydrate intake is concerned. Almost 46% of fertile and 34% of infertile women was consuming carbs as per recommendation.

Women belonging to both fertile and infertile groups preferred chicken over red meat. Beef was the least desired of all the meat choices where only 18 out of 77 infertile and 46 out of 240 fertile women consumed it, that too once a week or less. There was no significant difference of frequency of meat consumption between the fertile and infertile women (P=0.149) However, when non-pregnant fertile women were compared with infertile ones then there was a significant difference between the intake of meat where 38% of fertile and only 16% of infertile were taking meat in the recommended daily amounts (3-6 servings per day).

The consumption fruits and vegetables was also comparable in both groups (P=0.463 and 0.216 respectively). Women belonging to both groups stated that they consumed almost all fruits and vegetables that were made available to them. However, in women belonging to lower socioeconomic groups, the number of servings of fruits taken per day was significantly reduced, this, however, had no correlation to the women being fertile or infertile.

Milk intake was also comparable in both fertile and infertile groups. In non-pregnant fertile group 45% of the females were taking the recommended amount of milk products daily. This amount was reduced to 35% in the infertile group. Most of the women were consuming milk after removing a single layer of fat from it after boiling. However, none of them were taking skimmed or completely fat free milk substitutes.

Among the fertile females, 168 out of 240 (70%) were preparing food in cooking oil and 72 were preparing it in ghee. Whereas, 41 out of 77 (53%) of the infertile women were preparing food in cooking oil and 36 (46%) in ghee. This ratio remained almost same when non-pregnant fertile and infertile women were compared.

Consumption of carbonated beverages was found to be high in both fertile and infertile groups but it was significantly higher in fertile females. Most of the women belonging to the fertile groups attended the OPDs for their antenatal check-ups. These women were mostly suffering from nausea or dyspepsia and stated that they found these beverages to be helpful in relieving these symptoms. Many of the infertile women stated that their doctors have advised them to shun the practice and thus they do not consume these beverages anymore. This could be the reason of the significant difference seen in the frequency of consumption of carbonates drinks between fertile and infertile females (P=0.000) 41% of non-pregnant fertile women and only 11% of infertile ones were taking carbonated beverages regularly (at least once per day) A logical reason for this significant difference could be the fact that soft drinks made up for the decreased daily caloric intake that most of our women suffer from and in turn improved the fertility that could otherwise be negatively affected by a lower than normal daily caloric intake.

Women belonging to both fertile and infertile groups were found to be regular tea drinkers. 23% of the pregnant fertile and 27% of infertile females was consuming 1 cup of tea every day. Whereas in the comparison between non-pregnant fertile and infertile women, 40% fertile and 27% infertile females were taking 1 cup of tea every day. Some of the women who were pregnant at the time of the collection of the data reported to have developed a dislike for tea during pregnancy, which could be a major cause of decreased intake of tea by pregnant fertile females who were included in the research. 162 fertile and 31 infertile females stated that they did not take tea at all.

Nuts and beans both have been known to enhance fertility [17]. None of the women belonging to either group said that she did not like beans or pulses and were consuming them on regular basis. The consumption of nuts, which have been seen to be fertility enhancing, was mostly dependent on the socioeconomic status of the patients because of their high cost. Most of the women, irrespective of the groups they belonged to, did not know about the documented effects of intake of nuts on fertility status. They were under the false impression that women should not consume nuts frequently. Especially women belonging to the rural area stated that since childhood they were told not to consume too much nuts or beef as their mothers believed that this could cause early onset of menstruation. Even pregnant women were not allowed to take nuts in any significant amount because they believed that it could cause a miscarriage. When fertile women

were compared with the infertile ones, there was no significant difference between the intake. But when non pregnant fertile were compared with infertile ones, we found out that 33% of fertile and only 4% of infertile women were taking nuts on regular basis. Most of the dried fruits consumed were peanuts or almonds.

6. Conclusion

Overall, there has not been any significant difference noted in the eating patterns of fertile and infertile groups. The differences noted during the research were mostly because of the fact that most of the fertile women reporting at the OPDs were pregnant and thus their food choices and intake changed. A lot of infertile participants were on specific diets which restricted them from taking excessive carbohydrates and calories. Other than that, the socioeconomic status was also a factor which dictated the eating patterns of women. Influence of elderly women of the family was also noted to be affecting the choices of food intake by women, especially the one who were pregnant. Pregnant women were better fed and sometimes even over fed. Their diets included increased number of carbohydrates and fats. Myths related to specific foods like nuts and meat was also a factor which contributed to the lesser intake of these important food groups. All of these factors have affected the outcome of this research.

A research on a much larger scale needs to be done in order to explore this topic in a more profound and detailed manner. Only a single on the spot interview in a small localized set up cannot completely determine the effect that food has on the fertility. A longitudinal survey needs to be done to assess the food choices of females since early childhood to ascertain the role of eating habits and patterns on the fertility status of females, if any. Many upcoming researches are linking various diseases with the eating patterns and habits of the individuals. It can be highly beneficial if we can help women conceive or restore their fertility by simply changing their eating habits.

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