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Effects of Malnutrition on Women Reproductive Health in Punjab

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Abstract: In the maternal and child health nutrition plays a vital role. It has been noted that the poor maternal nutrition status is directly responsible for the adverse birth outcome. The aim of the present study is to find out the effects of malnutrition on women reproductive health in Punjab. Multistage sampling techniques were used for data collection. At the first stage two Districts i.e. Faisalabad and Multan of Punjab province were selected randomly. At the second stage four tehsils, two from each district (Tehsil Faisalabad and Tehsil Jaranwala from District Faisalabad and Tehsil Multan and Tehsil Shujabad from District Multan) were selected randomly from the selected districts, than 12 localities, three from each tehsil (Chak No. 59/JB, 30/JB and 31/JB from Tehsil Faisalabad, Chak No. 60/GB, 55/GB and 54/GB from Tehsil Jaranwala and Khokhran, Mithal Shah and Gondian from Tehsil Shujabad and Ghalu, Sanhbai and Hasnabad from Tehsil Multan) were selected randomly. A sample of 300 respondents (25 from each locality) selected purposively. It was found that majority of the respondents were eating vegetables and less than a half of them were drinking milk on daily basis. A very few of the respondents were drinking juices and eating meat on daily basis. A majority of the sampled women were taking three meals in a day and about one-fourth of the respondents were aware about balance diet. It is clear from the findings that the respondents had many health problems i.e., headache (61.7%), high blood pressure (60.3%), back pain (54.7%), swelling on different body parts (41.3%), irregular menses (33.0%), hand, facial swelling (32.7%), urinary complications (28.3%), cramps and abdominal pain (26.7%), vaginal bleeding (25.0%) and some of them had anemia and heavy bleeding. Less than a half of the respondents (45.0%) used any contraceptive method and one-fourth of them were observed its side effects. According to the research findings malnutrition had many bad impact on women and child health i.e., low weight baby, poor feeding practices, adverse pregnancy outcomes, low energy and nutrient dense foods, anemia, iron deficiency and poor physical activities. Main cause of malnutrition among the women were poverty, illiteracy, ignorance, socio-economic and environmental factors and poor water/sanitation and health services. Bi-variate analysis shows that education, income, age at marriage, eating pattern, awareness about balance diet, food security, household food expenditure were positively associated with reproductive health status and age and total no. of pregnancies were negatively associated with reproductive health status. There is a dire need to improve the health facilities available at government Health Centers especially at BHUs to address the reproductive health problems that will surely improve women's health status.

Key words: Malnutrition, reproductive health, balance diet

INTRODUCTION

Food is the basic need for the nourishment of life. It should be in the range of each and every single without discrimination. It should be considered the basic human right. It is also seen that the malnutrition and under nutrition both are responsible for the under productivity of the individual not only at the household level but at the local and national level also. It directly effects the economic condition of the people. Crimes socio-economic, political unrest and instability are due to the food insecurity. Reduction in crimes, political stability and other factors are enhanced with the help of the proper food security. It also helps in the

development of the country by the production of the healthy minds (Villar *et al.*, 2003).

Malnutrition, defined as both under-nutrition and over-nutrition as well as micronutrient deficiencies, negatively impacts both individuals and populations (Black *et al.*, 2008). Under-nutrition inhibits the body's immune system from fighting disease and impedes cognitive, social-emotional and motor development (Black *et al.*, 2013).

Nutritional status is clearly compromised by diseases with an environmental component, such as those carried by insect or protozoan vectors, or those caused by an environment deficient in micronutrients. But the

effects of adverse environmental conditions on nutritional status are even more pervasive. Environmental contamination (e.g., destruction of ecosystems, loss of biodiversity, climate change and the effects of globalization) has contributed to an increasing number of health hazards (Johns and Eyzaguirre, 2000) and all affect nutritional status. Overpopulation, too, is a breakdown of the ecological balance in which the population may exceed the carrying capacity of the environment. This then undermines food production, which leads to inadequate food intake and the consumption of non-nutritious food and thus to malnutrition.

The balanced nutrition of the women and of the children is very much important. It has been observed that through women the pernicious effects of the malnutrition are introduced to the future generations. A woman who is suffering from the malnutrition factor gives birth to a low birth weight (Low) Baby that can be gripped by the diseases very easily. The babies have the very short life span and they often die a pre mature death. There are so many factors that are directly responsible for the malnutrition of the babies and the women, the most important are the poor economic status, poverty, ignorance, adulterated food supply etc. In the developed countries the situation totally been changed and the ratio of the under weight babies and have been deservd from 27 to 22% (de Onis *et al.*, 2004), we all know very well that the nutrition level in the different countries is different for example it is 0% in Australia 49% in Afghanistan regarding the malnutrition issue (WHO, 2003).

The term "reproductive health" is directly associated with the well being of the country. Because there are famous quotation spoken by the renowned leader of the world that give me healthy children and I will provide you a healthy atmosphere. So, we come to the consultation that the progress of the country is directly related to the health of the people. So, it should be crime responsibility of the government to provide the food articles divide of adulteration to the people at their thresh hold so the dream of the healthy nation marching to the road of the progress may be realized. We all know very well that the opposite of health is disease. So, it should be our goal to provide healthy measures to the people so that they may have healthy environment of living. when the focus on the reproductive health is in the negative, that is those conditions of the physical injury, psychological trine acute illness, disability and different other issue containing death irregular sexuality reproduction are the problems that has to be faced by the due to the unavailability of the measures related to the reproductive health (Murray and Topaz, 1998).

Maternal undernutrition remains pervasive and is a critically important determinant of healthy pregnancy outcomes for both mother and baby. The prevalence of

malnutrition in Pakistan among lactating and pregnant women is high and, with the exception of maternal anemia rates, is largely resistant to change. The National Nutrition Survey 1985-1987 reported that maternal malnutrition affected 34.2% of pregnant women who were severely underweight, while the National Nutrition Survey 2001-2002 showed that 12.5% of non-pregnant and 16.1% of lactating mothers were malnourished.

Under-nutrition, including fetal growth restriction, suboptimum breastfeeding, stunting, wasting and deficiencies of vitamin A and zinc, contributed to 3.1 million (45%) child deaths worldwide in 2011 (Black *et al.*, 2013). Between 1990 and 2011, stunting, a measure of chronic under-nutrition, declined by 35 percent, while wasting, a measure of acute under nutrition, declined by 11%. With population growth, however, the absolute number of children affected has remained stagnant. In 2011 alone, stunting and wasting affected more than 165 and 52 million children under five, respectively (United Nations Children's Fund, World Health Organization, The World Bank, 2012).

In Pakistan, the status of maternal health is poor. An estimated 30,000 women die each year due to pregnancy related complications and recent estimates show about 500/100,000 live birth. But in reality it may be higher because of under registration of deaths and absence of the causes of death information (WHO, 2007). The nutritional and demographic surveys, conducted during last few years, indicate extremely poor state of female and child nutrition. National nutrition survey 2002-03 reported a high prevalence of malnutrition in pregnant women with specific deficiencies of protein, energy, iron, iodine and zinc in the diet of pregnant women (National Nutrition Survey, 2002-2003). Present study is focused on the effects of malnutrition on women reproductive health in Punjab.

Objective:

- 1: To study the socio-economic characteristics of the sampled women
- 2: To analyze the eating pattern of the sampled women
- 3: To explore the effects of malnutrition on women's reproductive health
- 4: To suggest some policy measure on the issue

MATERIALS AND METHODS

The aim of the present study to find out the effects of malnutrition on women reproductive health in Punjab. Multistage sampling techniques were used for data collection. At the first stage two Districts i.e. Faisalabad and Multan of Punjab province were selected randomly. At the second stage four tehsils, two from each district (Tehsil Faisalabad and Tehsil Jaranwala from District

Faisalabad and Tehsil Multan and Tehsil Shujabad from District Multan) were selected randomly from the selected districts, than 12 localities, three from each tehsil (Chak No. 59/JB, 30/JB and 31/JB from Tehsil Faisalabad, Chak No. 60/GB, 55/GB and 54/GB from Tehsil Jaranwala and Khokhran, Mithal Shah and Gondian from Tehsil Shujabad and Ghalu, Sanhbai and Hasnabad from Tehsil Multan) were selected randomly. A sample of 300 respondents (25 from each locality) selected purposively.

Data were collected with the help of a well-designed interview schedule. Descriptive and inferential statistical techniques were used for data analysis.

RESULTS AND DISCUSSION

Table 1 indicates that 31.7% of the respondents had up to 30 years of age, while 36.0% of them had 31-40 years of age and 32.3% of them had above 40 years of age.

Table 2 reveals that only 15.0% were illiterate, while about one-third i.e., 33.7% of the respondents had primary-middle level education, about one-fourth i.e., 26.7% of them were matric passed and 24.7% of them had above matric level.

Table 3 reflects that about one-fourth i.e., 25.0% of the respondents had up to Rs. 15000 monthly income from all sources, while a major proportion i.e., 42.3% of the respondents had Rs. 15001-30000 monthly family income and about one-third i.e., 32.7% of them had above Rs. 30000 monthly income from all sources.

Simkhada *et al.* (2007) identified and analyzed the main factors affecting the utilization of maternal health services in developing countries. Antenatal care is a key strategy for reducing maternal mortality, but millions of women in developing countries do not receive it. It was found that commonly identified the following factors affecting antenatal care uptake: maternal education, husband's education, marital status, availability, cost, household income, women's employment, media exposure and having a history of obstetric complications. Above table also shows that 39.2% of the respondents had less than 20 years of age at the time of their marriage, while 32.3% of them had 20-22 years age at marriage and 28.3% of them had above 22 years of age at marriage. Mean age at marriage was 22.50 years with standard deviation was 2.68 years. Above findings show that age at marriage was low in the selected area. Because Islam refers to marry in early age. Some of the families follow this rule restrictedly. So they marry their children in early age. Another reason is availability of suitable proposal. Some people marry their children in early age due to family pressure. It is well documented fact that young age at marriage for women has reproductive and physical health complications like abortion and lower birth weight babies.

According to APWA (2002), high preference for son early marriages in rural set up, high fertility rate, poor delivery

Table 1: Socio-economic and demographic characteristics of the respondents n = 300

Age of the respondents (in years)	Frequency	Percentage
Up to 30	95	31.7
31-40	108	36.0
Above 40	97	32.3
Education of the respondents		
Illiterate	45	15.0
Primary-middle	101	33.7
Matric	80	26.7
Above matric	74	24.7
Monthly income from all sources		
Upto 15000	75	25.0
15001-30000	127	42.3
Above 30000	98	32.7
Age at marriage (in years)		
Less than 20	118	39.3
20-22	97	32.3
Above 22	85	28.3
	Mean = 22.50	Std. Dev. = 2.68
Duration of marriage (in years)		
Up to 10	91	30.3
11-15	107	35.7
Above 15	102	34.0
Occupational status		
Housewife	224	74.7
Working woman	76	25.3

Table 2: Distribution of the respondents according to born total no. of children

Total born children	Frequency	Percentage
1-2	112	37.3
3-4	111	37.0
Above 4	77	25.7
Total	300	100.0

Table 3: Distribution of the respondents according to their live total children

Total children	Frequency	Percentage
1-2	110	36.7
3-4	130	43.3
5 and above	60	20.0
Total	300	100.0

method and place and poor antenatal and postnatal services are the factors associates with above mentioned issues.

Table 1 further reveals that about one-third i.e., 30.3% of the respondents had up to 10 years duration of marriage, while 35.7% of them had 11-15 years duration and 34.0% of them had above 15 years duration of marriage.

In our male dominated society mostly women are restricted to move in society because in South Asia region women find themselves in subordinate positions. Women socially, culturally and economically dependent on men. Women are also largely excluded from making decisions, have limited access to and control over resources, are restricted in their mobility and are often under threat of violence from male relatives (Batool, 2009). Table 8 reveals that a majority i.e., 74.7% of the respondents were housewives, while 25.3% of them were working women. Shields and Shooshtari (2001)

Table 4: Distribution of the respondents according to their eating pattern n = 300

Eating pattern	----- Daily -----		1-3 days/w		Once in two wks		Once a month		When needed		---- Never ----	
	F.	%	F.	%	F.	%	F.	%	F.	%	F.	%
Milk	135	45.0	70	23.3	18	6.0	12	4.0	18	6.0	47	15.7
Meat	19	6.3	29	9.7	37	12.3	75	25.0	74	24.7	66	22.0
Fish	0	0.0	9	3.0	19	6.3	39	13.0	55	18.3	178	59.3
Fruits	48	16.0	52	17.3	58	19.3	64	21.3	38	12.7	40	13.3
Vegetables	201	67.0	86	28.7	13	4.3	0	0.0	0	0.0	0	0.0
Rice	28	9.3	59	19.7	106	35.3	33	11.0	55	18.3	19	6.3
Juices	22	7.3	47	15.7	39	13.0	55	18.3	58	19.3	79	26.3
Eggs	31	10.3	34	11.3	47	15.7	44	14.7	48	16.0	96	32.0
Fast food	17	5.7	58	19.3	34	11.3	27	9.0	77	25.7	87	29.0

Table 5: Distribution of the respondents according to meals were eaten in a day

Meals were eaten in a day	Frequency	Percentage
One meal	25	8.3
Two meals	59	19.7
Three meals	185	61.7
More than 3 meals	31	10.3
Total	300	100.0

Table 6: Distribution of the respondents according to awareness about balance diet

Awareness	Frequency	Percentage
To a great extent	74	24.7
To some extent	96	32.0
Not at all	130	43.3
Total	300	100.0

pointed out that professional women have high rates of consultation with health care providers and give attention to diet.

Table 2 reveals that more than one-third i.e., 37.3% of the respondents were born 1-2 children, while 37.0% of them were born 3-4 children and 25.7% of them were born above 4 children.

According to the Batool (2009), in Pakistan the basic aim of marriage is to bear the children. This thinking is depends upon on socio-cultural beliefs. In Pakistani society woman's position gets stronger when she gets pregnant and gives birth to a child particularly a boy child.

Table 3 indicates 36.7% of the respondents had 1-2 children, a major proportion i.e., 43.3% of the respondents had 3-4 children, while 20.0% of them had five and above children

Table 4 represents the eating pattern of the respondents. Table shows that 45.0% of the respondents were drinking milk on daily basis, 23.3% of them were drinking milk 1-3 days/week, 6.0% of them were drinking milk once in two weeks, 4.0% of them were drinking milk once a month and 6.0% of them were drinking milk when they felt its need, whereas 15.7% of the respondents never drinking milk.

About 6.3% of the respondents were eating meat on daily basis, 9.7% of them were eating meat 1-3 days/week, 12.3% of them were eating meat once in two weeks, 25.0% of them were eating meat once a month and 24.7% of them were eating meat when they felt its need, whereas 22.0% of the respondents never eating meat.

Table 7: Distribution of the respondents according to their monthly expenditure on household food items

Monthly expenditure (Rs.)	Frequency	Percentage
Up to 5000	79	26.3
5001-7500	123	41.0
Above 7500	98	32.7
Total	300	100.0

About 3.0% of the respondents were eating fish 1-3 days/week, 6.3% of them were eating fish once in two weeks, 13.0% of them were eating fish once a month and 18.3% of them were eating fish when they felt its need, whereas a majority i.e., 59.3% of the respondents never eating meat.

About 16.0% of the respondents were eating fruits on daily basis, 17.3% of them were eating fruits 1-3 days/week, 19.3% of them were eating meat once in two weeks, 21.3% of them were eating fruits once a month and 12.7% of them were eating fruits when they felt its need, whereas 13.3% of the respondents never eating fruits.

A large majority i.e., 67.0% of the respondents were eating vegetables on daily basis, 28.7% of them were eating vegetables 1-3 days/week, 4.3% of them were eating vegetables once in two weeks.

About 9.3% of the respondents were eating rice on daily basis, 19.7% of them were eating rice 1-3 days/week, 35.3% of them were eating rice once in two weeks, 11.0% of them were eating rice once a month and 18.3% of them were eating rice when they felt its need, whereas 6.3% of the respondents never eating rice.

About 7.3% of the respondents were drinking juices on daily basis, 15.7% of them were drinking juices 1-3 days/week, 13.0% of them were drinking juices once in two weeks, 18.3% of them were drinking juices once a month and 19.3% of them were drinking juices when they felt its need, whereas 26.3% of the respondents never drinking juices.

Almost 10% of the respondents were taking eggs on daily basis, 11.3% of them were taking eggs 1-3 days/week, 15.7% of them were taking eggs once in two weeks, 14.7% of them were taking eggs once a month and 16.0% of them were taking eggs when they felt its need, whereas 32.0% of the respondents never taking eggs.

Table 8: Distribution of the respondents according to their level of food security n = 300

Food security	----- Oftenly -----		--- Sometimes ---		----- Never -----	
	F.	%	F.	%	F.	%
In past 6 months do you have enough food for your family?	55	18.3	116	38.7	129	43.0
In the last 6 months, did you or other adults in the household ever cut the size of your meals or skip meals because there was not enough money for food?	50	16.7	133	44.3	117	39.0
In the last 6 months did you ever eat less than you felt you should because there was not enough money for food?	58	19.3	150	50.0	92	30.7
In the last 6 months, did you ever hungry, but did not eat, because there was not enough money for food?	91	30.3	116	38.7	93	31.0
In the last 6 months, did you or other adults in your household ever not eat for a whole day because there was not enough money for food?	25	8.3	173	57.7	102	34.0

Table 9: Distribution of the respondents according to their health/ reproductive health problems

Health problems	----- Yes -----		----- No -----		----- Total -----	
	F.	%	F.	%	F.	%
Headache	185	61.7	115	38.3	300	100.0
Swelling on different body parts	124	41.3	176	58.7	300	100.0
Back pain	164	54.7	136	45.3	300	100.0
Fever	101	33.7	199	66.3	300	100.0
Heavy bleeding	55	18.3	245	81.7	300	100.0
Irregular menses	99	33.0	201	67.0	300	100.0
Breast problems	29	9.7	271	90.3	300	100.0
Miscarriage	38	12.7	262	87.3	300	100.0
Vaginal bleeding	75	25.0	225	75.0	300	100.0
Hand, Facial swelling	98	32.7	202	67.3	300	100.0
Anemia	30	10.0	270	90.0	300	100.0
Severe anemia	24	8.0	276	92.0	300	100.0
High blood pressure	181	60.3	119	39.7	300	100.0
Cramps and abdominal pain	80	26.7	220	73.3	300	100.0
Urinary complications	85	28.3	215	71.7	300	100.0

Only 5.7% of the respondents were eating fast food on daily basis, 19.3% of them were eating fast food 1-3 days/week, 11.3% of them were eating fast food once in two weeks, 9.0% of them were eating fast food once a month and 25.7% of them were eating fast food when they felt its need, whereas 29.0% of the respondents never eating fast food.

It was found that majority of the respondents were eating vegetables and less than a half of them were drinking milk on daily basis. Very few respondent were drinking juices and eating meat.

Table 5 indicates that only 8.3% of the respondents were eaten meals one time in a day, while 19.7% of them were taking meals two times in a day, a majority i.e., 61.7% of them were taking meals three meals in a day and 10.3% of them were taking meals more than 3 times in a day.

Table 6 shows that 24.7% of the respondents had awareness 'to a great extent' and 32.0% of them had awareness 'to some extent' about balance diet and 43.3% of them had no awareness about balance diet.

Table 7 reveals that about one-fourth i.e., 26.3% of the respondents had up to Rs. 5000 monthly expenditure on household food items, while a major proportion i.e., 41.0% of them had Rs. 5001-7500 monthly expenditure and 32.7% of them had above Rs. 7500 monthly expenditure on household food items.

Table 8 reveals that 18.3% of the respondents reported that in past 6 months they had oftenly enough food for

their family, while 38.7% of them sometime had enough food for their family in the past 6 months and 43.0% of them never had enough food for their family in the past 6 months.

About 16.7% of the respondents reported that in the last 6 month, they or other adult in the household oftenly cut the size of their meals or skip meals because there was not enough money for food, a major proportion i.e., 44.3% of the respondents reported that in the last 6 month, they or other adult in the household sometime cut the size of their meals or skip meals because there was not enough money for food, whereas 39.0% of them told that they never cut the size of their meals or skip meals because there was not enough money for food.

Almost 19% of the respondents reported that in the last 6 month, they oftenly eat less than they felt that they should because there was not enough money for food and about a half i.e., 50.0% of the respondents told that in the last 6 month, they sometimes eat less than they felt that they should because there was not enough money for food, whereas 30.7% of them never ever eat less than they felt they should because there was not enough money for food.

Table shows that 30.3% of the respondents reported that in the last 6 month, they felt oftenly hungry, but they did not eat, because there was not enough money for food, while 38.7% of them some felt hungry and 31.0% never felt hungry, because there was not enough money for food.

Table 10: Distribution of the respondents according to using any contraceptive method and its side effects (n = 300)

Using any contraceptive method	Frequency	Percentage
Yes	135	45.0
No	165	55.0
Side effect		
Yes	74	24.7
No	61	20.3
NA (Not using)	165	55.0

Table 11: Distribution of the respondents according to the type of side effect of family planning method (n = 300)

Side effects	----- Yes -----		----- No -----		----- NA -----	
	F.	%	F.	%	F.	%
Bleeding	35	11.7	39	13.0	226	75.3
Weight loss	36	12.0	38	12.7	226	75.3
Swelling/rash	43	14.3	31	10.3	226	75.3
Heavy menses	42	14.0	32	10.7	226	75.3

Table shows that only 8.3% of the respondents reported that in the last 6 month, they or other adults in their household ever not eat for a whole day because there was not enough money for food, while a majority i.e., 57.7% of them told that in the last 6 month, they or other adults in their household sometime not eat for a whole day because there was not enough money for food and about one-third i.e., 34.0% of the respondents said that in the last 6 month, they or other adults in their household ever eat for a whole day because there was not enough money for food.

Table 9 presents the health/reproductive health problems faced by the respondents. Table shows that 61.7% of them had headache problem, while 41.3% of them had swelling on different body parts, 54.7% of them were suffering back pain problem. About one-third i.e., 33.7% of them were suffering from fever, 18.3% of them had heavy bleeding problem, 33.0% of them faced irregular menses problem, 9.7% of them had breast problem and 12.7% of them had miscarriage problem. Similarly respondents had many problems i.e., vaginal bleeding (25.0%), hand, facial swelling (32.7%), Anemia (10%), severe anemia (8.3%), high BP (65.3%), cramps and abdominal pain (26.7%) and urinary complications (28.3%).

Batool (2009) found that anemia a common blood disorder occurs when the level of healthy red blood cells (RBCs) in the body becomes too low. This can lead to health complications because red blood cells contain hemoglobin, which pass through oxygen to the body's tissues. Anemia causes a variety of complications, including fatigue and stress on bodily organs. Anemia status can be affected by nutritional deficiencies, infectious diseases, genetic disorders, reproductive complications and poverty. Anemia affects approximately 2 billion people at worldwide but disproportionately affects women and children.

Table 10 indicates that 45.0% of the respondents were using any contraceptive method, while 55.0% of them never used any contraceptive method.

Table 10 further depicts that about one-fourth i.e., 24.7% of the respondents were observed side effect of contraceptive services, whereas 20.3% of them had no side effect of contraceptive services.

Table 11 shows that 11.7% of the respondents had bleeding problem due to using family planning methods, while 12.0% of them had loss in weight, 14.3% of them had swelling/rash and 14.0% of the respondents experienced heavy menses due to family planning.

Table 12 represents the respondents' perception about the impact of malnutrition on women and child health. About 29.0% of the respondents were strongly agreed and 28.3% of them were agreed with the statement "A women who is suffering from the malnutrition factor gives birth to a low birth weight (Low)", while 20.0% of them were neutral, 12.3% of them were disagreed and 10.3% of them were strongly disagreed with this statement.

About one-third i.e., 34.0% of the respondents were strongly agreed and 32.3% of them were agreed with the statement "Low weight baby can be gripped by the diseases very easily", while 22.7% of them were neutral, 5.0% of them were disagreed and 6.0% of them were strongly disagreed with this statement.

About 15.0% of the respondents were strongly agreed and 18.3% of them were agreed with the statement "short birth intervals" is a cause of malnutrition among women, while 26.3% of them were neutral, 24.7% of them were disagreed and 15.7% of them were strongly disagreed with this statement.

About 23.0% of the respondents were strongly agreed and 19.0% of them were agreed with the statement "poor feeding practices" due to of malnutrition among women, while 27.0% of them were neutral, 21.3% of them were disagreed and 9.7% of them were strongly disagreed with this statement.

Almost 19% of the respondents were strongly agreed and 21.3% of them were agreed with the statement "adverse pregnancy outcomes" due to of malnutrition among women, while 29.3% of them were neutral, 13.0% of them were disagreed and 17.0% of them were strongly disagreed with this statement.

About one-third i.e., 34.3% of the respondents were strongly agreed and 30.0% of them were agreed with the statement "low energy and nutrient dense foods" due to of malnutrition among women, while 23.0% of them were neutral, 8.0% of them were disagreed and 4.7% of them were strongly disagreed with this statement.

Little more than one-third i.e., 35.0% of the respondents were strongly agreed and 28.3% of them were agreed with the malnutrition is a cause of anemia among women, while 23.7% of them were neutral, 6.7% of them were disagreed and 6.3% of them were strongly disagreed with this statement.

Less than one-third i.e., 30.0% of the respondents were strongly agreed and 23.7% of them were agreed with the

Table 12: Distribution of the respondents according to their perception about the impact of malnutrition on women and child health (n = 300)

Statements	----- SA -----		--- Agree ---		-- Neutral --		Disagree		----- SD -----	
	F.	%	F.	%	F.	%	F.	%	F.	%
A women who is suffering from the malnutrition factor gives birth to a low birth weight (Low)	87	29.0	85	28.3	60	20.0	37	12.3	31	10.3
Low weight baby can be gripped by the diseases very easily	102	34.0	97	32.3	68	22.7	15	5.0	18	6.0
Short birth intervals	45	15.0	55	18.3	79	26.3	74	24.7	47	15.7
Poor feeding practices	69	23.0	57	19.0	81	27.0	64	21.3	29	9.7
Adverse pregnancy outcomes	58	19.3	64	21.3	88	29.3	39	13.0	51	17.0
Low energy and nutrient dense foods	103	34.3	90	30.0	69	23.0	24	8.0	14	4.7
Anemia	105	35.0	85	28.3	71	23.7	20	6.7	19	6.3
Iron deficiency	90	30.0	71	23.7	89	29.7	30	10.0	20	6.7
Poor physical activities	110	36.7	39	13.0	71	23.7	47	15.7	33	11.0

SD: Strongly disagree, SA: Strongly agree

Table 13: Bi-variate analysis (Testing of Hypotheses)

Independent variables	Chi-square value	D.F	p-value	Gamma value
Age (in years)	67.34	4	0.000**	-0.561
Education of the respondents	83.21	6	0.000**	0.369
Family income	19.47	4	0.001**	0.244
Total no. of pregnancies	35.77	4	0.000**	-0.446
Duration of marriage (in years)	0.094	4	0.999 ^{ns}	0.012
Age at marriage (in years)	10.63	4	0.031*	0.116
Eating pattern	23.80	4	0.000**	0.353
Awareness about balance diet	18.87	4	0.001**	0.252
Food security	116.52	4	0.000**	0.756
Household food expenditure	19.70	4	0.001**	0.156

malnutrition is a cause of iron deficiency among women, while 29.7% of them were neutral, 10.0% of them were disagreed and 6.7% of them were strongly disagreed with this statement.

More than one-third i.e., 36.7% of the respondents were strongly agreed and 13.0% of them were agreed with the malnutrition is a cause of poor physical activities among women, while 23.7% of them were neutral, 15.7% of them were disagreed and 11.0% of them were strongly disagreed with this statement.

So malnutrition had many bad impact on women and child health i.e., low weight baby, poor feeding practices, adverse pregnancy outcomes, low energy and nutrient dense foods, anemia, iron deficiency and poor physical activities.

Dependent variable: Reproductive health status:

Hypothesis 1: Age of the women will be associated with their reproductive health status: The chi-square value (67.34) shows a highly significant association between age of the respondents and their reproductive health status. The gamma value shows a strong negative relationship between the variables. It means majority young age women had high level reproductive health status as compared to old age. So the hypothesis "Age of the women will be associated with their reproductive health status" is accepted.

Hypothesis 2: Education of the women will be associated with their reproductive health status: The chi-square value (83.21) shows a highly significant

association between education of the respondents and their reproductive health status. The gamma value shows a strong positive relationship between the variables. It means majority of the illiterate respondents had low level reproductive health, while highly qualified respondents had high level reproductive health status. So the hypothesis "Education of the women will be associated with their reproductive health status" is accepted.

Hypothesis 3: Family income of the women will be associated with their reproductive health status: The chi-square value (19.47) shows a highly significant association between family income of the respondents and their reproductive health status. The gamma value shows a strong positive relationship between the variables. It means low income respondents had low level reproductive health as compared to high income respondents. So the hypothesis "Family income of the women will be associated with their reproductive health status" is accepted.

Hypothesis 3: No. of pregnancies will be associated with their reproductive health status: The chi-square value (35.77) shows a highly significant association between total no. of pregnancies of the respondents and their reproductive health status. The gamma value shows a strong negative relationship between the variables. It means if the respondents had up to 2 pregnancies then their reproductive health status is good, on the other hand if the respondents had above 4 pregnancies then their health status is not good. So the

hypothesis "Number of pregnancies will be associated with their reproductive health status" is accepted.

Hypothesis 5: Duration of marriage will be associated with their reproductive health status: The chi-square value (0.094) shows a non-significant association between duration of marriage of the respondents and their reproductive health status. The gamma value also shows a no relationship between the variables. So the hypothesis "Duration of marriage will be associated with their reproductive health status" is rejected.

Hypothesis 6: Age at marriage of the women will be associated with their reproductive health status: The chi-square value (10.63) shows a significant association between age at marriage of the respondents and their reproductive health status. The gamma value shows a positive relationship between the variables. It means if the respondents had low age at marriage then their health status is low as compared to if the respondents had mature age at marriage (above 22). So the hypothesis "Age at marriage of the women will be associated with their reproductive health status" is accepted.

Hypothesis 7: Eating pattern of the women will be associated with their reproductive health status: The chi-square value (23.80) shows a highly significant association between eating pattern of the respondents and their reproductive health status. The gamma value shows a positive relationship between the variables. It means if the respondents had health nutrition then they had good reproductive health. So the hypothesis "Eating pattern of the women will be associated with their reproductive health status" is accepted.

Hypothesis 8: Awareness about balance diet of the women will be associated with their reproductive health status: The chi-square value (18.87) shows a highly significant association between awareness of the respondents and their reproductive health status. The gamma value shows a positive relationship between the variables. It means if the respondents had more awareness about balance diet then they had good reproductive health status. So the hypothesis "Awareness about balance diet of the women will be associated with their reproductive health status" is accepted.

Hypothesis 9: Food security will be associated with the women reproductive health status: The chi-square value (116.52) shows a highly significant association between food security of the respondents and their reproductive health status. The gamma value shows a

positive relationship between the variables. It means if the respondents had good food then they had also high level reproductive health status. So the hypothesis "Food security will be associated with the women reproductive health status" is accepted.

Hypothesis 10: Household food expenditure will be associated with the women reproductive health status: The chi-square value (19.70) shows a highly significant association between household food expenditure of the respondents and their reproductive health status. The gamma value shows a positive relationship between the variables. It means if the respondents had more expenditure on their food then their reproductive health level was also good. So the hypothesis "Household food expenditure will be associated with the women reproductive health status" is accepted.

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