*Original Article*

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# Morbidity Profile of Women Aged 15-45 Years in Rural Mangaluru, A Cross Sectional Study

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**Abstract**

*Background:* According to 2011 census 69%of the Indian population and 66% of people in Karnataka reside in rural areas. Knowledge about the nutritional status and morbidity pattern among rural people is essential for prevention, treatment, management of disease along with promotion of health among rural women .The health of the women is known to be influenced by her nutritional status. Over the years several changes have occurred in diet and physical activity, which have led to malnutrition and have contributed to several morbidity factors. Efforts are needed to improve diet quality and education for rural women so that they rise in economic status and are better nourished.

*Methods:* Present study was a community based cross sectional study. Convenient Sampling method was used. A total of 200 women were randomly selected as sample from the selected villages. The period of study was three month from 31st january2019 to 31st March 2019. The women in the reproductive age from 15-45 years, who were willing to participate, were included in the study.

*Results:* Out of 200 women in our study 7% of women were illiterate, 86% were house wives, 36% of them belonged to socio economic status class I, 76 % had no history of any regular physical activity while pallor was present in 22% of study subjects. Further, 95% of the women under study gave history of having received antenatal care, 54% of them gave history Dysmenorrhea while 14% of the women had irregular cycles of menstruation. The study also brought out that 18% of the women were found to be obese, 2% were known diabetic, 7% of them suffered from UTI while 6% of them were known hypertensive.

*Conclusion:* Literacy rate was found to be very high in our study population area while most of the women belonged to higher socioeconomic status. Number of obese people was more which indicates unhealthy food intake and lack of physical activity. Antenatal care was found to be taken by greater number of study population. Prevalence of hypertension and diabetes as found to be on lower side.

**Keywords:** Nutritional status; Morbidity; Physical Activity; Obesity; Antenatal care.

## Introduction

Morbidity refers to the state of being diseased or unhealthy in a given population.[1] Woman is regarded as the nucleus for the growth of family and community. Maternal health affects health, as a whole of family, as community and thus society.[2] Ensuring their good quality of life and addressing their healthcare needs is a major challenge.[3] The life expectancy of females in world is about 71.1 years. Although India is the second most populated country with nearly a 1/5th of world's population, but this typical female advantage is not seen in India, as the life expectancy of women in India is 70.7 years while in Canada it is 82.5 years.[4-5] This suggests that there are systematic problems in providing the women quality healthcare, more so in rural areas where women are less educated and

economically deprived leading to poorer health conditions. Diseases like – Hypertension, Diabetes Mellitus, Gastrointestinal disorders, Nutritional disorders, Common mental disorders like stress, depression, anxiety are among the leading causes of morbidity along them, besides other locally endemic communicable diseases. Earlier hypertension was a major problem of urban population but now it has spread to rural areas also. In a Journal of hypertension (2014) by Raghupathy Anchala, et al., showed overall prevalence of hypertension in India was 29.8% of which 25% of (29.8%) belonged rural population.[6] Diabetes mellitus is an iceberg disease accounting for 4.6 million deaths annually worldwide. The recent surveys indicate that diabetes now effects about 10-16% of urban and 5-8% of rural population in India.[7]

Functional gastrointestinal disorders [GIT] like infections and gastric diseases which comprise gastritis, epigastric pain, halitosis, bloating, weight loss, nausea, regurgitation, vomiting are also a matter of concern. A study done by Ghoshal UC, et al., reported that 21.7% of the subjects under study, suffered from GIT disorders.[8] Stress is a non specific response of body to any demand placed upon it. Many studies conducted previously have produced the evidence that women report more psychological distress than men. A study done on the relationship of stress and mental disorders among rural Indian women by Nisha Fahey, et al, showed that 23.7% of rural women were reported to be suffering from Common mental disorders.[9] To improve the prevailing situation, the problem of rural health is to be addressed both at macro (national and state level) and micro (district/sub-district/block) levels.

The health of Individual is also known to be greatly influenced by his or her nutritional status. Over the years several life style changes have occurred in diet and physical activity, which have contributed to several morbidity factors. Hence diet and nutrition are important factors in promotion and maintenance of good health. Needless to say that diet and nutrition should be a matter of prime concern for the rural women. In the backdrop of above, a study was undertaken to find out the different prevailing morbidity pattern and nutritional status of a female population in the selected villages and co-relate it to the prevailing health problem among the women under study.

## Methods

A community based cross sectional study was undertaken in four selected villages near Mangaluru. Convenient Sampling method was used and a total of 200 women were randomly selected from the selected villages. Ethical approval was obtained from the Institutional Ethical Committee (IEC) before the conduct of the study. A semi-structured, validated pro-forma was used to record the findings using interview method after taking their written informed consent. No interventions or investigations were performed. The study lasted three month i.e. from 31st january 2019 to 31st March 2019. The data was entered in the Microsoft excel sheet and the analysis was done using SPSS version 22. Results were expressed in the form of tables and pie diagrams.

## Results

A total of 200 women were included in the analysis. Various criteria like socio-demographic profile, personal history, nutritional status, medical problems, general physical examination and anthropometry are presented here.

A. Age profile: The data shown in the figure 1 depicts that majority of the study population belongs to 31-45 years (58%) while the rest belong to 15-30 years (42%). (Figure- 1)

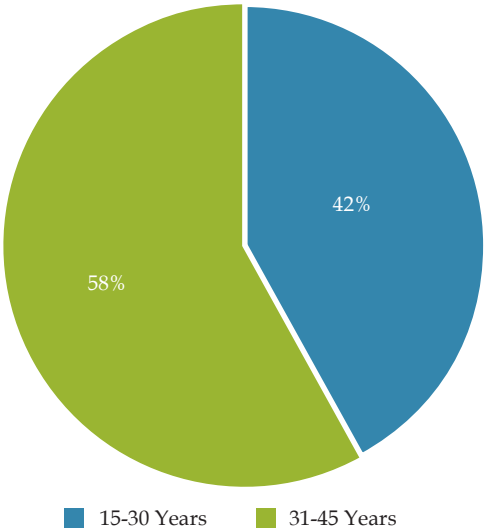


**Fig. 1:** Age distribution of study population (n=200):

B. Religion: The data shown in the figure 2 depicts that majority of people belong to Hindu religion

(59%). The frequency of subjects from Muslim and Christian were 36%, 5% respectively. (Figure- 2)

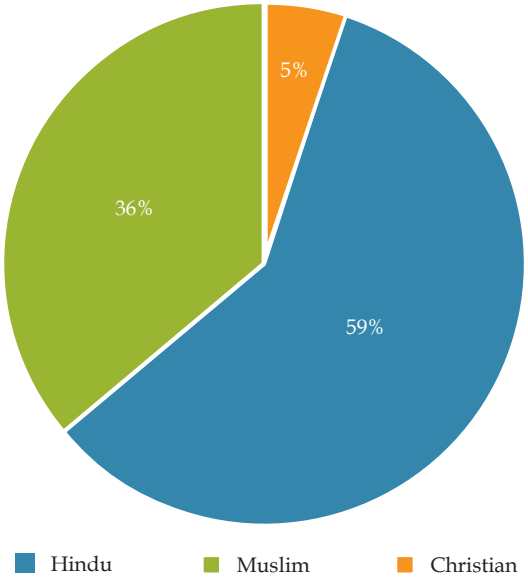


**Fig. 2:** Religion distribution of study population (n=200)

C. Type of Family: The study brings out that majority of the study population (53%) were residing in nuclear families, 43% in joint families and the rest 4% were living in three generation extended families. This shows the declining joint family trend among rural population as well. (Figure-3)

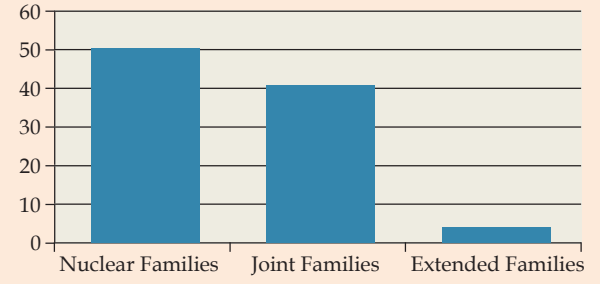


**Fig. 3:** Distribution of study population according to type of family (n=200)

D. Marital Status. The data regarding study population depicted in table -2 shows that 84% are married and 16% are single. (Table-1)

**Table 1:** Marital Status of study population (n=200)

| S. No. | Marital status | Frequency | Percentage |
|---|---|---|---|
| 1 | Single | 32 | 16 |
| 2 | Married | 168 | 84 |
| 3 | Divorced | 0 | – |

E. Educational status. The data regarding the education status of study population depicted in the figure 4 shows that 93% of the women were literate while 7% were illiterate. Among the literate (93%) 60 were qualified up to high school, 46 were primary school, 38 PU and 34 were graduate and 8 were post graduate (Figure-4).

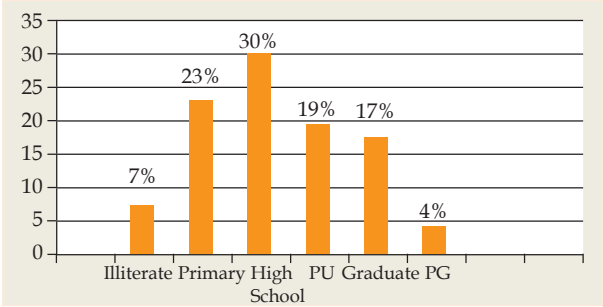


**Fig. 4:** Educational status of the study population (n=200).

F. Occupation. The data presented in the figure 5 shows that majority of the people were unemployed (86%) and rest 14% were employed.

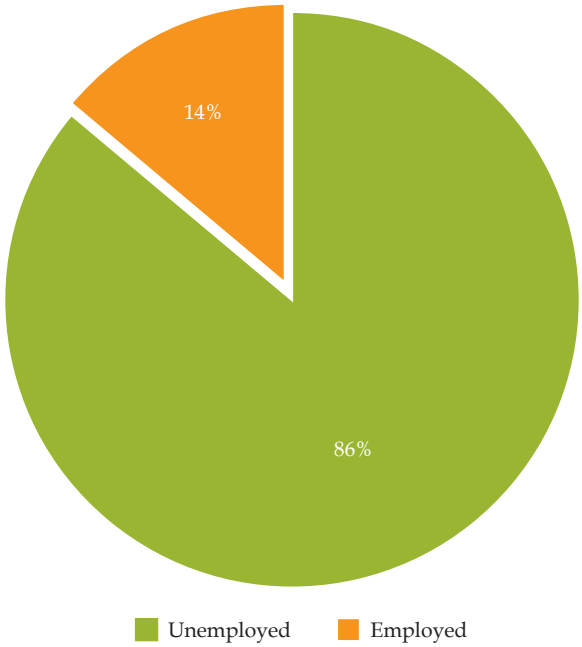


**Fig. 5:** Occupational status of the study population (n=200)

G. Socioeconomic status. Table-2 brings out socio-economic status of the study population based on modified B G Prasad classification. Among the study population majority of the women belonged to class-I (36%), while only 1% belonged to social class V.

**Table 2:** Socio-Economic Status of Study Subjects. (n = 200).

| S. No. | Class | Frequency | Percentage |
|---|---|---|---|
| 1. | Class 1 | 72 | 36 |
| 2. | Class 2 | 60 | 30 |
| 3. | Class 3 | 34 | 17 |
| 4. | Class 4 | 32 | 16 |
| 5. | Class 5 | 2 | 1.0 |
| | Total | 200 | 100 |

H. Diet pattern: The data regarding the diet pattern of the study population depicted in Table -3 states that majority of the study population had a mixed diet (93%) and the rest were Vegetarians (7%).

**Table 3:** Diet pattern of study subjects (n=200).

| S. No | Diet | Frequency ( n=100) | Percentage |
|---|---|---|---|
| 1 | Mixed | 186 | 93 |
| 2 | Vegetarian | 14 | 7 |

I. Dietary deficit in study population. The data regarding the protein/calories deficit of the study population is depicted in Table 4 and it states that mean calorie deficit among the women was found to be 721 kcal and means protein deficit was found to be 9.85 grams

**Table 4:** Dietary deficit among study subjects. (n=200)

| | |
|---|---|
| Mean Calorie Deficit | 721 kcal |
| Mean Protein Deficit | 9.85 grams |

J. Physical activity. The physical activity status of the study population has been depicted in Figure 6 and it states that majority of the women (76%) did not do any regular physical activity, 16% of them did some walking, 3% of them did yoga and 1% did other types of physical activities.

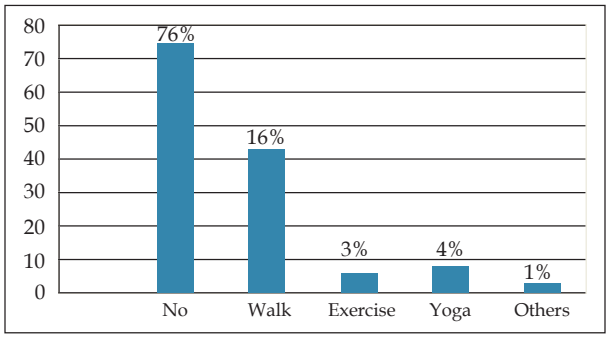


**Fig. 6:** Physical activity status of study population. (n=200)

K. Stress indicators: The stress levels of the study population have been depicted in Table 5 and it was observed that out of 200 women 30% were stressed with daily problems, 22% were never able to cope up with their problems, 28% were never relaxed while 26% were never able to control their anger.

**Table 5:** Stress indicator in study population. (n=200)

| In the last 1 month | Never | Very rare | Sometimes | Always |
|---|---|---|---|---|
| No. of people who were stressed with daily problems | 70 | 36 | 64 | 30 |
| No. of people who were able to cope up with problems | 22 | 32 | 78 | 68 |
| No. of people who were relaxed | 28 | 46 | 64 | 62 |
| No. of people who were able to control anger | 26 | 42 | 62 | 60 |

L. Physical indicators based on stress. The physical indicators based on stress in study population are depicted in Table 6 and these state that out of 200 women 30% of them had backache, 38% suffered from headache, 20% suffered from Skin rash, 24% suffered from sleeplessness while 28% suffered from tiredness.

**Table 6:** Physical indicators based on stress in study population. (n=200)

| Last 1 month | Never | Very Rare | Sometimes | Always |
|---|---|---|---|---|
| Backache | 82 | 9 | 35 | 15 |
| Headache | 76 | 18 | 25 | 19 |
| Skin rash | 142 | 9 | 10 | 10 |
| Sleeplessness | 134 | 12 | 9 | 12 |
| Tiredness | 122 | 8 | 17 | 14 |

M. Medical problems. The medical problems among study population depicted in Table 7 states that out of 200 women, 15 % of the study population suffered from respiratory disorders like cough and breathlessness. 3% of the study population suffered from gastrointestinal disorders like constipation, indigestion and diarrhoea. 2% of the population are known diabetic and are taking medications. 6% of the population are known Hypertensive

**Table 7:** Medical problems among study population. (n=200)

| Medical Problem | Percentage |
|---|---|
| None | 74 |
| Respiratory Disorder | 15 |
| Gastrointestinal Disorder | 3 |
| Diabetes | 2 |
| Hypertension | 6 |

N. Obstetrics and Gynaecology. The mean age at which the study population attained menarche was at 14 years of age. The mean number of days of bleeding was found to be 5 days. The data presented in Fig- 7 shows that 86 % of the study population had regular menstrual cycles and 14% had irregular menstrual cycles. It was also found that 68% of the study population used pads while 32% used clothes.

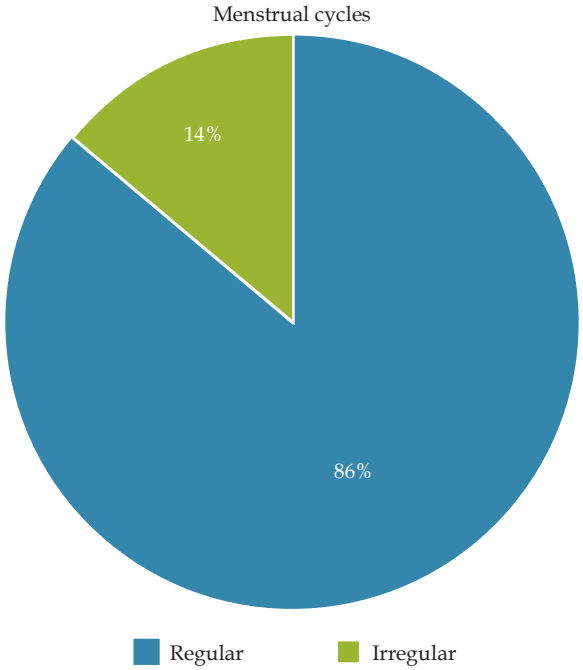


**Fig. 7:** Menstrual cycle pattern of the study population. (n=200)

The table 8 shows that 84% of the study population found the presence of clots during their menstrual cycle and 46% of the study population suffered from dysmenorrhoea

**Table 8:** Other gynaecological problems. (n=200)

| Gynecological problems | Variable | Percentage |
|---|---|---|
| Presence of clots | Yes | 16 |
| | No | 84 |
| Dysmenorrhea | Yes | 54 |
| | No | 46 |

The figure 8 depicts that among 84% of the women who had delivered 168 (88% ) of them underwent Full Term Normal Delivery (FTND) and 24 (12%) of them underwent Lower Segment Caesarean Section (LSCS). Further, 95% of them received proper Ante Natal Care [TT injections, Folic Acid, Calcium and Iron tablets were taken], while 12 % of them gave birth to a low weight baby.

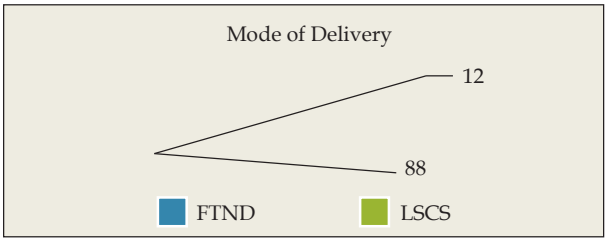


**Fig. 8:** Mode of Delivery among study subjects. N=200

O. BMI of the study population. The data regarding the BMI of the study population is shown in the table 9 which depicts that 8% of them were underweight while 18% were obese indicating increased health risk for women.

**Table 9:** Body mass index (BMI) of study population. (n=200).

| S.No | BMI (kg/m^2) | Frequency | Percentage |
|---|---|---|---|
| 1 | Underweight [<18.5] | 16 | 8 |
| 2 | Normal [18.5-22.9] | 66 | 33 |
| 3 | Over Weight [23-24.9] | 32 | 16 |
| 4 | Pre Obese [25-29.9] | 50 | 25 |
| 5 | Obese [> or equal to 30] | 36 | 18 |

*Based on Who Asian BMI Classification

P. Waist hip ratio. The data regarding the waist hip ratio of the study population has been shown Table 10 depicts that 43% of them were at high risk indicating increased health risk for women due to excess fat in the abdominal region.

**Table 10:** Waist hip ratio of study population. (n=200)

| S. No. | Waist Hip Ratio | Frequency | Percentage |
|---|---|---|---|
| 1 | Low risk [less than or = 0.8] | 70 | 35 |
| 2 | Moderate risk (0.81 -0.85) | 44 | 22 |
| 3 | High risk (>=0.85) | 86 | 43 |

## Discussion

In our study, 59% of the women were Hindus, 36% were Muslims while 5% Christians. In a study conducted by Radha. Y. Aras, et al., on topic Gender variables and reproductive behavior of women from rural Mangalore, 63% were found to be Hindus, 29.5% were Muslims and 7.5% were Christians.[10]

In our study, 93% of the study population was literate and remaining 7% were illiterate. In a study conducted by Manjunath. T.L et al, on nutritional

assessment of women in the reproductive age group (15-49) from rural areas. 39.4% women were found to be illiterate.[11]

In our study, 14% women were employed and skilled workers and remaining 86% were homemakers. In a study conducted by M. Prasad Rao, et al, in 2016 on trends in women employment in India during census 1981-2011, women employment was observed to be 53.3%.[12] In our study, 36% of the study population belonged to Class I, 30% Class II , 17% Class III , 16% Class IV and 1% belongs to Class V according to modified B.G. Prasad Socioeconomic Classification. In a study conducted by Avin. Alva. BR, et al, among rural women in Mangalore, 5% women were found to be in Class-I while 75.25% were found to be in class IV.[13]

In our study, 49% of the women were found to be having normal BMI, 8% were underweight, 25% were overweight and 18% were obese according. In a study conducted by Manjunath.T.L, et al. among women in the reproductive age group (15-49) in a rural area 58.3% had normal BMI, 14.4% were underweight, 27.2% were overweight and 6.1% were obese.[11]

## Conclusion

From the above study we are of the conclusion that literacy rate among our study subjects was found to be relatively very high, most of them belonged to higher socioeconomic status; the number of obese women was rather high, which indicates unhealthy food intake habits and lack of organized physical activity, and finally high gynecological problems indicate low level of menstrual and personal hygiene. However, it was encouraging to note that ANC care was utilized by a relatively much higher proportion of women under study.

*Limitation*

a. Pallor was found out by clinical examination, which is subjective.

b. Pre-diabetic cases could not be found out because blood examination was not done

c. Working women were not available at the time of study.

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