



# AWARENESS OF DIET AND EXERCISE IN PREGNANT WOMEN OF RURAL AREAS OF KARAD, MAHARASHTRA.

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## ABSTRACT:

**Background:** Good nutrition and regular exercise are important parts of a healthy lifestyle. Research evidence indicates that appropriate diet and exercise during pregnancy lead to reduced maternal and foetal mortality and improve the postnatal life of mother and child.

**Aim of study:** Present study was conducted to explore the awareness of proper diet and exercise among pregnant women in rural areas of Karad, Maharashtra India, and its association with socio-demographic factors.

**Methods:** A cross-sectional community-based study was conducted on 80 pregnant women who were registered in Karad. The validated self-structured diet and exercise awareness questionnaire were used to assess the awareness of pregnant women. Socio-demographic data was collected and co-related with diet and exercise awareness. Statistical analysis was performed using SPSS software.

**Results:** Among 80 study participants, eight were excluded from the study because of not meeting inclusion criteria. The majority of them (62.5%) were in the age group of 18–25 years. Only 13.9% of rural women were graduated. Most of the pregnant women were from the lower middle class (31.9%), and middle class (27.7%). Most of the women 48.6% and 44.4% were belonged to SC/ ST and OBC category respectively. The study reveals that 53.47% and 33% of pregnant women were found to be aware of proper diet and exercise respectively. Socio-demographic variables such as category, education, occupation, and

socioeconomic status of pregnant women were found to be significantly associated with diet and exercise awareness. Women belonging to upper socio-economic group, general category, graduated, and working women were found to be most aware of proper diet and exercise requirement among all pregnant women. Awareness was not related to age, religion and type of family of pregnant women.

**Conclusions:** The level of awareness regarding diet and exercise among pregnant women was not found satisfactory. They do not have proper knowledge and awareness about the various parameters. Improving awareness of diet and exercise among pregnant women will enable them to improve their quality of life during pregnancy, chances of a healthy delivery and postnatal life of mother and child.

**KEY WORDS:** Awareness, pregnancy diet, pregnancy awareness, pregnant women, rural area

## 1. INTRODUCTION:

The expectant mother's pregnancy is thought to be a pleasurable event. In order to fulfil the mother's heightened nutritional needs and prevent nutritional stress, it is crucial to maintain a balanced and sufficient diet throughout pregnancy. According to studies, the majority of pregnant women in India eat foods that are low in protein, calories, and other essential nutrients<sup>1</sup>. According to the NFHS 5 "2019-2020" state information sheet, there are 20.8% malnourished and 54.2% anaemic women in Maharashtra between the ages of 15 and 49<sup>2</sup>. One of the most frequent causes of micronutrient deficiencies is poor food consumption<sup>3</sup>. The intergenerational cycle of subpar growth in infants is influenced by maternal anaemia<sup>4</sup>. According to evidence, dietary deficiencies or excesses may result in deformities or medical issues in the fetus, such as preterm delivery, neural tube abnormalities, and low birth weight for gestational age<sup>5</sup>. Non-adherence to a strict daily calorie intake may cause pregnancy obesity and excess Gestational Weight Gain (GWG)<sup>6</sup>. Stress and depression are negative indicators of poor eating practices, and these risks increase during pregnancy due to hormonal changes<sup>7,8</sup>.

Exercise is a crucial component of pregnancy care and another key feature of women's life. Pregnancy-specific fitness regimens are advised and becoming more and more popular<sup>9</sup>. Many types of research are evident that the recommendation to start or continue exercising in the majority of pregnancies is safe and

beneficial for both the mother and the fetus throughout pregnancy.<sup>9</sup>The advantages of exercise are maintaining aerobic and muscular fitness levels, preventing excessive maternal weight gain, facilitating labor, aiding in gestational glucose control, improving psychological adjustment to pregnancy-related changes, and hastening postpartum recovery<sup>10, 11</sup>. Antenatal exercise has additional advantages such as reducing morning sickness, insomnia, anxiety, and stress, as well as other pregnancy-related complaints such as fatigue, leg cramps, and edema of the extremities<sup>12, 13</sup>. It also improves posture, promotes relaxation, and gets the body ready for the physical demands of labor<sup>14</sup>.

A woman's health and well-being are greatly impacted by her diet and exercise, particularly during pregnancy, when she goes through significant biological, physical, psychological, and social changes<sup>15</sup>.<sup>16</sup>By being aware of their diet and exercise needs during pregnancy and taking steps to maintain a healthy lifestyle, pregnant women can give themselves and their babies the best chance for a healthy pregnancy and delivery<sup>15, 16</sup>. Trained, supported, and motivated health professionals have a recognized role in spreading awareness of the importance of health among pregnant women<sup>17</sup>. Their influence can be more powerful because women and doctors/nurses frequently interact during routine antenatal visits during pregnancy<sup>18</sup>. But there is no data available on the requirement of awareness of diet and exercise in pregnant women of rural areas of India. So, the present study aims to collect data on awareness of diet and exercise in pregnant women of rural areas of Karad, Maharashtra.

## **MATERIAL METHODS:**

### **2.1 Study Design**

The investigation was conducted in the Department of Physiotherapy, Krishna Hospital, Karad, India. Approval of the Institutional ethics committee was taken prior to the commencement of the study. Community-based cross-sectional study design was used to find awareness among rural women of Karad.

### **2.2 Study procedure**

#### **2.2.1 Sample Size:**

A total of 80 pregnant, literate women from rural area of Karad visiting Krishna Hospital were enrolled for the study. Eight women were excluded from the study who do not fit for inclusion criteria because of falling

into one or more exclusion criteria such as age below 18 years and above 35 years, women unwillingness to participate, totally illiterate, or having some psychiatric problems. 72 women were asked to fill out the responses in the questionnaire.

### 2.2.2 Data collection tools and procedure:

The procedure and the purpose of the study were explained to the participants and Informed consent was taken from all the subjects included in the study. The socio-demographic profile template was used to collect the data on background information and the socioeconomic status of the study participants. The socioeconomic status of the study participants was assessed by using the modified B. G. Prasad's socioeconomic status scale. The validated self-structured questionnaires on diet awareness and exercise were prepared. Questionnaires were translated into the local language (Marathi) for a better understanding of the rural women of Karad. The various options like rarely, occasionally, yes or no were mentioned in the questionnaire and the participants will be asked to mark the suitable option which they feel is correct.

### 2.2.3 Data analysis:

Collected data were arranged on a 4 – point scale, where Yes = 4 points, occasionally = 3 points, rarely = 2 points and No = 1 point to calculate average awareness of proper diet and exercise requirement. Statistical analysis (p- value) was calculated for correlating socio- demographic characteristics with awareness of rural women. Statistical Package for the Social Sciences (SPSS) version 20 software was used for data analysis.

## 3. RESULTS

The socio-demographic characteristics of the study participants is shown in table 1. The mean age of pregnant women participated in the study was  $25.25 \pm 3.17$ , ranging between 18 and 35 years. The majority of the participants in the study (62.5%) were between the ages of 18 and 25. Most of the pregnant women belonged to Other Backward Caste (OBC) category (48.6%), while 48.6% belonged to SC/ST and only 7.0% belonged to general category. Most pregnant women belonged to Hindu religion (90.3%) as compared to Muslim religion (9.7%). 16.7% of pregnant women came from nuclear families, while 83.3% of pregnant women came from joint families. Maximum 41.7% of pregnant women have higher secondary education, and 34.7% have only a secondary education, according to data on their educational backgrounds. Only

13.9% of pregnant women were found graduated. Nearly all pregnant women were housewives (93%). Participants were divided into socioeconomic groups using the modified B. G. Prasad scale. Most of the pregnant women were noted from lower middle class (31.9%) and middle class (27.7%), only 5.5% pregnant women belonged to upper class.

Table 1: Socio-demographic characteristics of pregnant women.

Socio-demographic characteristics	Study participant	
	Numbers	Percentage
Age (Years)		
18-25	45	62.5
26-30	25	34.7
30- 35	2	2.8
Category		
General	5	7
OBC	35	48.6
SC/ST	32	44.4
Religion		
Hindu	65	90.3
Muslim	7	9.7
Types of family		
Joint	60	83.3
Nuclear	12	16.7
Educational status		
Primary	7	9.7

Secondary	25	34.7
Higher secondary	30	41.7
Graduate	10	13.9
Occupational status		
House wife	67	93
Working women	5	7
Socioeconomic status		
Upper class	4	5.5
Upper middle class	9	12.5
Middle class	20	27.7
Lower middle class	23	31.9
Lower class	16	12.2

Based on our nutrition awareness questionnaire data 53.47% of pregnant women were aware of nutrition importance. 98.6% of women were aware of the need of healthy food and 63.09% women were aware of the need for drinking water. 73.6% know about the need to eat breakfast every day. 35- 45 % of women were aware of other questionnaires mentioned in Table 2. A minimum of 25% of women were aware of constipation symptoms during pregnancy.

Table 2: Nutrition awareness of pregnant women of Karad

SR. NO	QUESTION	YES	NO	RARELY	OCCASIONALLY
1.	Do I need to eat healthy food everyday	98.6	1.4		-
2.	Do I rarely pay attention to whether or not to eat enough bread everyday	44.4	33.3	16.7	5.6
3.	Do I need to consume dairy products everyday	40.3	33.3	18.1	8.3
4.	Do I need to control myself to adhere to a strict daily calorie intake	38.9	27.8	29.2	4.2
5.	Should I limit the saturated fat that I eat	43.1	25.0	26.4	5.6
6.	Do I need to eat breakfast everyday	73.6	8.3	9.7	8.3
7.	Do you experience any constipation symptoms during pregnancy	25.0	37.5	33.3	4.2
8.	Do you drink enough amount of water during pregnancy	63.9	18.1	13.9	4.2

Table 3: Exercise awareness of pregnant women of Karad

Sr.	Questions asked to participants	Yes	No	Rarely	Occasionally
1.	Does exercise makes delivery easier	43.1	29.2	22.2	5.6
2.	Does exercise improves maternal and fetal health	36.1	29.2	27.8	6.9
3.	Does exercise relieves pain	29.2	30.6	36.1	4.2
4.	Does exercise relieves discomfort	27.8	29.2	33.3	9.7
5.	Does exercise avoids weight gain	30.6	45.8	19.4	4.2
6.	Does walking help	66.7	11.1	18.1	4.2
7.	Are ankle toe movements important	19.4	50.0	26.4	4.2
8.	Does aerobic exercises help	6.9	73.6	12.5	6.9
9.	Does breathing exercise help	51.4	26.4	12.5	9.7
10.	Does strengthening exercises help	19.4	54.2	19.4	6.9

The study on respondents' awareness of the requirement of exercise during pregnancy concluded that 33.0% were aware of it. 66.7% and 51.1 % of women were aware of the requirement of walking and breathing exercises during pregnancy. Exercise makes delivery easier was known to 43.3% of women. Aerobic exercises help in pregnancy was known by only 6.9% of pregnant women (Table 3).



Socio-demographic and obstetrics characteristics	Percent awareness of nutrition and exercise
Age (Years)	
18-25	42.8
26-30	45.5
30- 35	40.4
Category	
General	80
OBC	50.2
SC/ST	23.5
Religion	
Hindu	39.8
Muslim	37.6
Types of family	
Joint	38.8
Nuclear	41.5
Educational status	
Primary	12.5
Secondary	30.5
Higher secondary	50.5
Graduate	65.5
Occupational status	
House wife	45.5
Working women	80
Socioeconomic status	
Upper class	83.3
Upper middle class	54.4
Middle class	35.5

Lower middle class	25.5
Lower class	10.8

The findings of the study revealed that awareness of nutrition and exercise in pregnant women of rural areas of Karad, Maharashtra are 53.47% and 33.0% respectively (Table 2 and Table 3). A statistically significant association of category ( $p < 0.01$ ), educational status ( $p < 0.01$ ), occupational status ( $p < 0.05$ ), and socioeconomic status ( $p < 0.05$ ) of pregnant women with pregnancy nutrition and exercise awareness was found. A significant differences in level of awareness varied among pregnant women who belonged to the general category (80%) the OBC category (50.2%), and the SC/ST category (23.5%). Also, it was found that aware of nutrition and exercise awareness were proportionately related to pregnant women's higher educational position. Only 12.5% of primary educated women were found to be aware of ANC nutrition and exercises, compared to 65.5% of pregnant graduate women. The results showed that pregnant women who were working had higher levels of awareness (80%) than pregnant women who were housewives (45.5%). Similar findings indicated that nutrition and exercises awareness were proportionately correlated with higher socioeconomic level. About 80% of upper socioeconomic-class pregnant women were found to be aware of ANC nutrition and exercises while only 10.8% of lower class and 25.5% of lower middle-class pregnant women were found to be aware of ANC nutrition and exercises. The findings of the study revealed that age, religion and type of family of pregnant women were not found to be significantly associated with ANC nutrition and exercises awareness ( $p > 0.05$ ).

#### 4. Discussion

The present study is novel as it proposes a feasible intervention of awareness of nutrition with Exercise that pregnant women could incorporate into their lifestyle to improve their quality of life. The consumption of dairy products (nutrition component), adequate water should be well tolerated throughout pregnancy, according to the study of Walji et al.<sup>15</sup> Walking is the best physical activity to encourage healthy lifestyle during pregnancy and reduce delivery complications and GWG (Gestational Weight Gain)<sup>16, 19</sup>. The strongest maternal factors linked to offspring obesity and bone mass of the children<sup>20, 21</sup> and childhood metabolic dysfunction is associated with pregnancy obesity and excess GWG (Gestational Weight Gain)<sup>22, 23</sup>. Education is an important factor for awareness<sup>1</sup>. Our study found majority of the working women were aware of the

importance of nutrition during pregnancy. Similar results were observed by Khan et al<sup>1</sup> and Szwajcer et al<sup>24</sup>. In our study age was not related to awareness but Szwajcer et al<sup>24</sup> found a positive co-relation between younger age and awareness.

Previous studies have indicated that many professionals who provide care to pregnant women are acquainted with the current guidelines for physical activity and diet plan but they do not have time and interest to share these with pregnant women<sup>17, 18</sup>. According to a study done in the United States, women under the care of obstetricians who talked about physical activity and healthy diet during antenatal appointments had a stronger desire to exercise and eat well while pregnant<sup>23</sup>. Another study revealed that antenatal diet and physical activity awareness effectively maintained good diet and exercise levels among pregnant women.<sup>17, 18</sup> The present study shows there is a lack of awareness among pregnant women of the rural area of Karad. So, there is an acute requirement of spreading awareness to rural pregnant women about diet and exercise.

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