Dissertation

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Socio-economic and cultural factors affecting women's work, health and nutritional status

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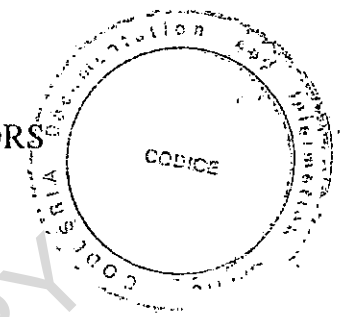
TITLE PAGE



SOCIO-ECONOMIC AND CULTURAL FACTORS AFFECTING WOMEN'S WORK, HEALTH AND NUTRITIONAL STATUS

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN HUMAN NUTRITION

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DEDICATION

Dedicated to my beloved mother

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I am so glad at this moment as I express my profound gratitude to Dr. (Mrs.) H.N. Ene-Obong and Dr. (Mrs). A.C. Uwaegbute, my supervisors, whose motherly advice, understanding, direction and disposition remained a source of inspiration to me throughout the duration of this research.

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Gloria Ifeoma Enugu

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ABSTRACT

This study was designed to investigate the effect of socio-economic and cultural factors could affect women's work, health and nutritional status. Two farming communities - Eha-amufu and Adani both in Enugu State, Nigeria were selected for the study. A total of 300 women comprising of 100 each of teachers, farmers and petty traders were studied. This study was carried out by means of focus group discussion (FGD), questionnaire, anthropometric measurement, activity pattern and nutrient intake assessment. Education influenced type of work and therefore income of the women. Women spent long hours at work (6.0 - 11.1 hrs.) daily depending on the season of the year. Teachers met the FAO/WHO recommended requirement for protein, calcium, thiamin, vitamin A and ascorbic acid. Farmers met their recommended requirement for calcium, vitamin A and ascorbic acid. Petty traders met their recommended intake for calcium and vitamin A. The BMI values for the teachers (23.8 ± 2.5) was higher than those of farmers (21.1 ± 2.5) and petty traders (21.0 ± 2.3). However, these three BMI values were not statistically different. Teachers had better health seeking behaviour as indicated by the fact that majority (67.7%) of them went to the hospital for treatment of diseases compared to 4.1% farmers and 8.3% petty traders. The number of teachers that went for check-up was also significantly higher ($P < 0.05$) than for the

other two groups. The age at marriage for teachers (24±7.3 yrs.) was higher ($P<0.05$) than that of the farmers (16.5±3.0 yrs.) and petty traders (17.1±4.0 yrs.). These women were rated lower than men in the society and this affected their self image which in turn affected their food distribution practices. Education correlated positively and significantly ($P<0.05$) with income ($r=0.873$) and age at marriage ($r=0.753$). Education also correlated positively with BMI and all the nutrient intakes. However, only energy, niacin and ascorbic acid were significantly affected ($P<0.05$). There was a negative but non significant correlation between education and workload ($r=-0.187$). Income on the other hand, correlated significantly ($P<0.05$) with BMI and the intake of all the nutrients except ascorbic acid. There were non significant ($P>0.05$), negative correlation between income and disease count ($r=0.143$) and income and workload ($r=-0.078$). Workload had a negative but significant correlation ($r=-0.346$; $P<0.05$) with protein intake. Age at marriage positively and significantly ($P<0.05$) affected income ($r=0.719$) and intake of most nutrients except energy and niacin. On the other hand, age at marriage correlated negatively with workload ($r=-0.18$; $P<0.05$). Among all the variables examined, education seemed to be the major determinant of health and nutritional status of women. The implications of these findings were fully discussed.

CHAPTER ONE

1.1 INTRODUCTION

The important roles played by women in Africa's economic development cannot be overemphasised. Women head about 40% of African household. They supply an average of 70% of the labour in domestic food storage, 60% in food marketing and 100% in on-farm processing (Moris-Hughes, 1994). Studies have also shown that apart from house-keeping and child care, women are also increasingly performing the hitherto stereotyped men's roles in both family and elsewhere due to global economic recession (Jacobson, 1993). Women are able to achieve this in addition to performing domestic chores by increasing the number of hours they put in daily at the expense of their leisure (Berio, 1984; Holmboe-Ottesen *et al*, 1988; McGuire and Popkin, 1988).

Because these roles played by women are energy sapping (increasing their body nutrients demand in both quantity and quality), the nutritional and health status of these women have become a point of great concern in the recent world debate or research. Such global concern for the nutrition and health of women is very appropriate. This is because several researches (Haswell, 1981;

McGuire and Popkin, 1988; Jacobson, 1993) observed that these multiple roles played by women do give rise to serious health and nutrition problems among them. The situation is even worse in such countries where societal norm and sex discrimination have forcefully subjected the women to satisfying the health and nutritional needs of the family at their own expense. Jacobson (1993) observed that the major underlying cause of malnutrition is poverty and it is within these settings of poverty that the social vulnerability of the female increases.

Reproduction and nutrition dominate women's special health concern. However, in the long-run, it becomes very clear that women's health status cannot be significantly improved without additional action to uplift women's overall social and economic condition. This upliftment of the women's overall condition would also include the removal of cultural barriers that discriminate against them (WFPA, 1986). Vander Kwaak *et al.* (1991) noted that health is not only determined by biological factors and reproduction but also by effect of work load, nutrition, stress, war and migration among others. He suspected that low socio-economic status and culture of a particular area may have endangered women's health in other ways. Deepening poverty among women, a product both of their low status and general economic decline, is contributing

to their insignificant impact on economic development in Nigeria. Merchant and Kurz (1993) noted that the social context can reduce or increase the impact of the biological vulnerability. For example, in many cultures, there is traditional period following the birth of a child sometimes referred to as "lying-in period" during which a woman is expected to reduce her usual activities. Conversely, a social practice of food taboos prohibiting the intake of a nutrient - rich food during childhood, pregnancy and lactation increases the risk of nutritional problem developing during these periods of high nutrients need.

In view of the above, it becomes very clear that women's health and nutrition have gone beyond reproductive functions and physical health to include socio-economic and cultural aspects of women's lives that are believed to have affected their health and nutrition. Hence the study of the effect of socio-economic and cultural factors on the nutrition and health status of women becomes very necessary.

1.2 PROBLEM STATEMENT

The fact that women occupy a vital position in the development of any give economy and play a major role in the family in terms of child up-bringing, house-keeping and economic support among other things have been well documented (Boulding, 1977; Jacobson, 1993). Coupled with these

activities, the kind of work they find themselves doing both at the formal and informal sector exposes them to health and nutritional backwardness. Most often, this is due to cultural barriers and low socio-economic characteristics of the women which include low educational status, sex discrimination, poor work environment etc.

In many countries including Nigeria, a wide range of laws and regulatory practices still prohibit and/or impede women to a greater extent than men in obtaining social and economic facilities needed to perform their developmental roles. These problems are worsened when the cultural norms of the society which give rise to a high discrimination against women are considered. For instance, gender discrimination in the allocation of food as well as health care and education is a widespread and well-documented practice in such areas where strong preferences for male children diminish the "value" of females (Acsadi and Acsadi, 1990). According to Royston and Armstrong (1989), there is wide range of discrimination against women which begins at birth with an overwhelming preference for male offspring. Unfortunately, discrimination often continues throughout their lives resulting in lower education, poor employment opportunities, high work loads and possibly reduced access to family food and community health care.

The nutrition and health status of women throughout their life seem to be mostly important because of the major role they play in both the family and the society. Merchant and Kurz (1993) confirmed that health and nutritional status of women cannot be studied in isolation from the socio-economic and cultural factors in the area. The same study also showed that socio-economic and cultural factors had multiplier effect on low nutrition and health status of the women. For instance, education has an impact on the timing of child-bearing and income earning potential of women, both of which affect their nutrition and health status. Majority of women have little or no formal education. This low educational background equips these women for employment only in the informal sector where workload and stress among other things are usually heavy (Berio, 1984). Khan and Farid (1991) observed that the level of physical exertion, lack of opportunity to rest and exposure to dangerous chemicals during agricultural production may be important risk factors for poor health and low nutritional status among women in Africa. These stresses, high workload and low income, often precipitate infrequent meals (Bleiberg *et al.*, 1980). Also, long hours of work and multiple roles played by women in these settings of poverty often lead to low nutrition and health hazards among them.

There is abundant evidence which shows that nutrition and health status of women are fast deteriorating. The most important predisposing factors are probably the socio-economic and cultural norms in a particular area. Consequently, it becomes very necessary to study the effect of socio-economic and cultural factors on the nutrition and health status of the women.

1.3 OBJECTIVE OF THE STUDY

The broad objective of the study is to find out the effect of socio-economic and cultural practices on the work health and nutritional status of women in Enugu State of Nigeria.

The specific objectives are to:

a. determine the socio-economic characteristics of the women in the study area

b. identify the cultural practices that affect health and nutritional status

c. measure the effect of women's economic activities on their nutrition and health status

d. determine relative importance of socio-economic characteristics of these women on their health and nutritional status.

1.4 HYPOTHESES

Drawing from the specific objectives, the research will be guided by the following null hypothesis:

a. Women's occupational activities have no effect on their nutrition and health status.

b. Socio-economic characteristics have no significant impact on women's health and nutritional status.

c. Cultural practices against women such as underestimation of females potentials and food taboos do not affect the health and nutritional status of women.

1.5 SIGNIFICANCE OF THE STUDY

Over the past 25 years, internationally, there has been an increased interest in the role of women in development. This has led to a more expanded perspective on women and nutrition to include the economic and social aspects of their life situation. There has also been an attempt to further women's economic independence and ensure a more equitable integration into the community. Infact a resolution (resolution NO. VIII) passed at the World Food Conference in 1974 was a call on all governments to promote equal rights and responsibilities for men and women in order that the energy, talent and ability of

women can be fully utilized in partnership with men in the battle against world hunger (Homboe-Ottesen *et al.*, 1988). Nigeria in her own way has tried to respond to such call through the Beter Life for Rural Women (BLRW) and Family Support (FS) Programmes aimed at mobilising women to be effective producers and participators in development. Actually, women need encouragement to be able to contribute meaningfully to the society. However, without such studies which would elicit women's barrier to economic development, the above programmes cannot be successful.

African women form an indispensible part of human resources for development. Without their contribution, the economies of African countries cannot be expected to be maintained at their present low level much less advanced to meet the target levels which are consistently being set by African countries (ECA, 1980). For women to participate effectively in development, their quality of life becomes very important in order for them to discharge their multiple roles. Therefore, it becomes very necessary to identify the specific problems that affect the health and nutrition of women in Enugu State.

Though researches have been conducted on health and nutritional status of women (Jacobson, 1991; Islam, 1991), very few have addressed specifically how socio-economic and cultural norms affect health and nutritional status of

women in Nigeria. To this effect, information gathered from this study will be of immense help to the implementation of comprehensive package on health and nutrition of women. Also, the information gathered will be very useful to students planners, policy makers and other professional interested in carrying out further studies on health and nutritional status of women in Nigeria, Enugu State in particular.

Since this study is going to supply valuable information on nutrion and health status of women in Enugu State, it will make an enviable contribution to the current campaign by Nigerian government towards achieving health for all by the year 2010 AD.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

In recent years, the role of women in national development has been a major area of interest and the focus of a considerable amount of research activity. Directly and indirectly, several research investigations have been carried out and information documented by many experts concerning women's health and their nutritional status and socio-economic and cultural factors that influence these two important variables (women's health and women's nutrition).

There is now a growing awareness among many experts that women constitute a greater proportion in many countries and they contribute significantly to the development process. In Nigeria and many other African countries, some scholars have investigated the specific roles and involvement of women in socio-economic and cultural activities and how these factors affect their health and nutrition. The purpose of this review is to articulate the findings of these studies and see the implications for further investigation of the effect of socio-economic and cultural factors on women's health and nutrition.

For the purpose of this research, the literature review is grouped under the following headings:

1. Role of women in the economic development.
2. Nutrition and health status of women
3. Effect of socio-economic factors on women's health and nutrition.
4. Effect of cultural factors on women's nutrition and health.

2.2 ROLE OF WOMEN IN THE ECONOMIC DEVELOPMENT

In developing countries including Nigeria, women play an important role in economic development. Numerous research investigations have confirmed increased participation of women in economic activity. Moris-Hughes (1994) observed that women head about 40 percent of African households. Here, they supply an average of 70 percent of labour in food production, 50 percent of labour in food marketing and 100 percent in on-farm food processing. According to Leslie *et al* (1988), the average work load of women in developing countries is 10 hours or longer. Recent international labour organisation (ILO) statistics show that approximately, one-third of the paid labour force, internationally, was composed of women and in most countries, the proportion of women in the workforce is growing. Youssef and Hetler (1984) remarked that for many women, pregnancy and lactation provide

little relief from the demand to engage in income-producing activities. For instance, a research conducted in Jamaica showed that 11 percent of women were working at six weeks postpartum, a proportion that steadily increased to 62 percent by 12 months (Youssef and Hetler, 1984). Sivard (1985) observed that work patterns, economic activity and energy expenditure are critical mediators between social conditions, food availability and women's nutritional status and should be given primary attention. According to McGuire and Popkin (1988), as girls grow to maturity, their economic contributions to their household increase but cultural expectations for early marriage and childbearing detract them from both their economic and biological well-being. As a matter of fact, once girls get married, the number of conflict between their roles increases.

Economically, women play such roles as provision of food, fuel, water, child care and health care. It has been estimated that such activities are worth 25 - 40 percent of the world gross national product (GNP). Most of this labour and it's products however are not counted in standard estimate of production such as GNP (McGuire and Popkin 1988). Sivard (1985), observed that women comprise 40 percent of the employed workforce in low income countries, are the sole income earners in one-quarter to one-third of the household and provide a significant proportion of all agricultural labour.

He maintained that women's participation in food production and income generation is of great importance to them and their families. Women increasingly participate in economic activity to increase total household food availability, increase their control of food and cash in the household and their status and decision making power in the family (Jacobson, 1991).

Hay and Stitcher (1992) observed that African women have been called the "invisible farmers" of African agriculture. This is because, their extra ordinary labour contribution to family was always neglected in national statistics. As low as 10 percent of women in urban centres participate in the formal sector as most of them are either in semi-skilled jobs, trading or other services in the informal sector Ene-Obong (Personal communication). Ngur (1988) argued that Nigerian women's involvement in the informal sector is indispensable for the survival of their families and has been documented in recent studies. Didomenico and Majetan (1976) reported from Western Nigerian that 72.8 percent of a total of 521 women interviewed engaged in commercial activity in addition to regular domestic duties. Those in cocoa farming zones, cultivate a variety of vegetables, yam, process cassava into flour and palm kernel into oil while at the same time they trade for their own benefits. Nwoko (1991) pointed out that Ibo

women in Eastern Nigeria also dominate in the trading activities of the informal sector. He observed that in addition to their economic contribution which may vary from region to region, throughout Nigeria, women fetch water, firewood, prepare family's food, process food crops, engage in marketing, tend the children and livestock.

Changes in occupational patterns of women during societal development and modernization have been observed. In the economic contributions of African women, it can be seen that they form an indispensible part of human resources for development. Without their contribution, the economies of African countries cannot be expected even to be maintained at their present low level much less advanced to meet the targets and levels which are consistently being set by African countries (ECA., 1980). According to UNDIESA (1991) women lag behind men in virtually every indicator of social and economic status. In every country and at every socio-economic level, women control fewer productive assets than men but work longer hours. Inspite of the fact that they are responsible for meeting 40 to 60 percent of the family's basic needs, they also earn less income.

Koblinsky *et al.* (1993) pointed out that women are more often compelled to resort to jobs that are seasonal, labour intensive and carry

considerable occupational risk. This is due to their lack of skill and training to engage in more convenient and profitable jobs.

From this review, therefore, it becomes glaring that women play an important role in overall economic development.

2.3 NUTRITION AND HEALTH STATUS OF WOMEN

The biological advantage in longevity that women have over men is not reflected fully in life-expectancy and mortality statistics for women in most developing countries (Merchand and Kurz, 1993). Women are faced with reproductive health threat, high rates of preventable illness and death from complications of pregnancy and childbirth, unsafe abortion and so on (Jacobson, 1991). Ware (1981) noted that life expectancy in these parts of the world including Nigeria is usually lower for women than for men in age classes below 50 years. This statistics can be explained by high mortality rates for women of childbearing age (between 15 and 44 years) and a generally higher mortality rate for female children above five years of age.

Commenting on mortality rate, Jacobson (1991) found that at least one million women usually die of reproductive health threat and more than 100 million suffer disabling illness in most of the developing countries. The same research also revealed that in many countries such as Bangladesh, Brazil,

Nigeria and Uganda, reproductive diseases account for more than 50 percent of deaths among women in their childbearing years.

WHO (1986) in related opinion noted that although world wide data describing the prevalence of undernourished adult women is lacking, the prevalence of low birth weight infants born by these women invariably indicates poor maternal nutritional status. WHO (1980) observed that the mortality rate among girls of zero to five years old is higher than for boys in the same age group. These findings indicate discriminatory practices against girls from the time of birth. Hamilton *et al.* (1984) found that nutritional anaemia is also listed as one of the major causes of death among women. They estimated that at least, half of the non-pregnant women and two-third of the pregnant women in developing countries are anaemic. Wandel and Holmboe - Ottesen (1988) stressed that anaemia has been shown to affect psychological and physical health by increasing susceptibility to diseases, lowering resistance to fatigue and affecting work capacity. They explained that women's work capacity and endurance were significantly increased by the supplementation of iron. Buzina *et al.* (1989) reported that pregnant anaemic women face an increased risk of getting infections. Continuing on this issue, it was further stated that evidence of lowered work capacity and reduced immunocompetence are seen even in mild

iron deficiency. Azizkarin and Midhet (1991) estimated prevalence of anaemia among all women and pregnant women between the ages of fifteen to forty-nine years. They reported that iron deficiency anaemia results from inadequate intake of iron-rich foods as well as from excessive blood loss during events such as childbirths, hemorrhage, menstration and various parasitic infections.

2.4 EFFECT OF SOCIO-ECONOMIC FACTORS ON WOMENS HEALTH AND NUTRITION

A further gap in our understanding of women's health concerns the association between a woman's occupation and her health status. Harlow (1991) and Senapati (1991) have been able to find out some economic factors that affect women's health and nutrition. These factors include:

1. the number of hours spent doing household chores and the limited opportunity to rest
2. women's double burden of household chores plus economically productive work.
3. the under counting of women's contribution to agricultural production and
4. the growing importance of employment in assembly - type production in export-processing zones.

Senpati (1991) lamented that limited quantitative information on how women's daily work activities influence their health is available. Tobisson (1980) reported that workload can affect women's nutrition and health status in both direct and indirect ways. An example of direct effect include increased energy use in heavy work that is not matched by a corresponding increase in food consumption or "wear and tear" effects causing body pains, arthritis or premature deliveries. Occupation has been viewed predominantly as an indicator or determinant of socio-economic status. Four presentations at the annual NCIH (National Council on International Health) conference highlighted the importance of beginning to consider how specific occupational characteristics - such as length of the working day, level of physical exertion and exposure to pesticides and other chemicals directly determine disease risk (Khan and Farid 1991; Patric, 1991). Khan and Farid (1991) observed a potential association between long work days during harvest season and increased maternal and infant morbidity and mortality in rural Pakistan. As is true for house-work, women did not tend to report their agricultural labour as work despite the fact that during harvest season, they often laboured as much as 16 hours each day in the field. It was therefore suggested that lack of opportunity to rest during harvest period may be an important risk factor for poor maternal and infant outcome.

It is reasonable to assume that heavy work burdens will affect women's health. A good example of women's hardship is given by Haswell (1981) in her field work in Gambia; she reported that, when women returned home from working in the fields, they collapsed from overwork and lack of food. A study by Berio (1984) revealed similar findings. He calculated the energy expenditure for men and women on the basis of time allocation data, from a national survey in Cote d Ivoire and concluded that energy expenditure over a week's period was higher for women than for men. Hamilton *et al.* (1984) have shown that low weight gain during pregnancy, low birth weight and weight losses during seasons with heavy work are caused by a combination of high work load, low food availability and increase in infectious diseases. A heavy work load for women may also lead to poorer diets not only for their children and other members of their families but also for women themselves. The diet may be poor because there is less time for preparation and cooking. Schofield (1979) identified the combination of low food availability and less time for food preparation during peak agricultural seasons as the causes of meals of small quantity, with less variety and more poorly prepared.

Several factors predispose women to hazards associated with inappropriate working conditions more than men: they comprise more than half

the agricultural work-force they usually perform the lowest paid and most hazardous work, and they are least likely to receive proper training in the handling of dangerous chemicals (UNIFEM, 1994). The implication of the above statement is that work environment adds more to their nutrition and health problems.

2.5 EFFECT OF CULTURAL FACTORS ON WOMEN'S NUTRITION AND HEALTH

The impact of culture on women's health and nutrition cannot be overemphasised. Indirectly, culture affects women's nutrition and health through societal conception of women as second class citizens. Such concept do greatly hamper women's potential development. For instance, Hay and Stichter (1992) have noted that women's access to resources appear to be inferior to men's in one way or the other. It is argued even till present that women cannot do justice to domestic work and childbearing while simultaneously engaged in wage labour (Obbo, 1980). This view ignores the fact that without a separate income, women are subject to the whims of men.

Nearly every investigation of African women's farming and craft - activities shows that they are always physically and intellectually capable of economic independence. But this evident capacity is repressed by tradition and

culture which teaches male supremacy right from childhood. Because this traditional suppression of women starts so early in life, they are conditioned to accept such unjust cultural practices as the normal way of life. However, evidences show that both National and International bodies have risen to help women break through such unjust cultural practices. A statement by the women of Uganda clearly brings out what is going on in so many African countries. They emphatically stated "we are not primarily interested in theories of equality superiority or even inferiority. We are interested in being treated with justice and with respect due to human beings" (Obbo, 1980). However, in so many other countries, life-long experience of subordination and lack of confidence in their own capacities leave most women reluctant to take such a step (Hay and Stichter, 1992). Based on this, Gough (1994) remarked that it is essential to prepare the female population by helping them overcome the barriers and centuries of backwardness and low self esteem. He recommended the initiation of wide spread ideological work among women from the base to the top to make them aware of their roles in the society, their rights and their duties.

Culture can also affect food habit through food prohibition and restriction or food taboos. Food taboos exist to forbid certain foods by an

entire population or an individual by reason of such things as their age, sex, religion or position in the society. This taboo may restrict the consumption of nutritionally satisfying food (Gift *et al.*, 1972). It has been noted that restrictions directed towards women especially pregnant and lactating women, are common throughout the world (Holmboe-Ottesen *et al.*, 1988). It must be emphasized here that one common thing about this food taboo is that it is characteristically placed on protein foods which are particularly needed by women during pregnancy and lactation.

UNFPA (1989), reported that the mortality rate of girls is 1.6 times that of boys. The implication of this evidence is that discriminatory behaviour on the part of caretakers shift the balance. In families where resources are highly constrained, the choice may be made in some societies to conserve by giving girls less (Payne and Lipton, 1989). Chen *et al.* (1981) and Waldron (1987) reported that in many societies, females must eat after the males and they get less of the high-protein - calorie foods. Upon that, researches have shown that girls are assigned responsibilities much earlier and work longer hours than boys (Berio, 1984; Safilios-Rothschild, 1980). In rural Bangladesh, mal-nutrition was found to be almost three times more common among girls than among boys (Bhatia, 1985; Chen *et al.*, 1981). A report by Koblinsky *et al.* (1993) revealed

that early marriage and consequent lack of education which places women on the low economic activity in the community had a serious implication on women's health and nutrition. For instance, apart from stress from informal works they engage in, money to purchase drugs and foods is not always available.

More fundamentally however, real improvement in women's health status will require far-reaching socio-economic and cultural change extending beyond the health care system. Cousins (1991) noted that women's health is a direct reflection of their status. No strategy can be successful in the long-term unless women become equal partners in societal development (Jacobson, 1993).

CHAPTER THREE

METHODOLOGY

3.1 SCOPE OF THE STUDY

This study involved the following:

1. Focus group discussion to obtain information on cultural practices related to women's welfare.
2. Cross-sectional survey to collect information on women's socio-economic profile, nutrition/health status and cultural practices.
3. Food intake for the assessment of nutrient intake of women.
4. Anthropometric measurement to asses the nutritional and health status of the women.
5. Measurement of activity pattern to estimate the actual number of hours spent on work and leisure per day.
6. Clinical examination for overt signs of malnutrition.

3.2 AREA OF STUDY

Two farming communities in Enugu State were purposefully selected viz: Eha-Amufu in Isi-Uzo Local Government Area and Adani in Uzo-Uwani Local Government Area. These two communities were selected due to the similar nature of economic activities of the women there. The researcher's

familiarity with the language and cultural practices of the people were other determinant factors.

The predominant economic activity of women in these two communities is farming. The system of agriculture varies from rotational bush fallowing in the low density area to semi-permanent cultivation in the high density areas. The people of these areas still use primitive tools like hoe and matchet in farming.

The major crops grown are root crops such as yam (Dioscorea alata) and cassava (Manihot esculenta). Due to the fact that these two communities are low swampy areas, rice (Oryza sativa) is also grown. Livestock is kept as an instrument against contingencies. It also serves as a source of animal protein and manure. Such animal as goat, dogs, sheep and fowl are kept.

Sampling and Sample Size Determination

The respondents were made up of married women of child bearing age whose economic activities ranged between farming, petty trading and teaching.

Sample Size Calculation

The sample size was calculated using the formular

$$n = \frac{2P(1 - P)F}{D^2}$$

Where n = total number of women in each occupational group

P = estimated proportion of malnourished women.

F = level of precision

D^2 = the difference between estimated proportion of malnourish women of different occupational group.

According to Population Reports (1988) an average of 32.5 percent of women of child bearing age (15 - 44 years) living in developing countries are mal-nourished. The percentage of mal-nourished educated mothers was estimated to be 10 percent. This is because they were able to feed and care for themselves and their families better. So, for this research, it was estimated that the proportion, P_1, of malnourished farmers and petty traders was taken to be 0.33 (approximately). This means that out of every ten farmers or petty traders, 0.33 of them are malnourished. For the teachers, it was estimated that for every ten, one is mal-nourished since they belong to the educated group.

Therefore, $P_2 = 0.1$

$$\therefore \quad P = \frac{P_1 + P_2}{2} = \frac{0.33 + 0.1}{2}$$

$$= 0.22$$

$$D = P_1 - P_2 = 0.33 - 0.1$$

$$= 0.23$$

F = 10.5 This value was gotten from the table below at 0.05 significant level and 90% power.

Table 1: Values used for the calculation of level of precision (F)

		Power			
		50%	80%	90%	95%
Significance level to be used (P - value)	0.1	2.7	6.2	8.6	10.8
	0.05	3.8	7.9	10.5	13.0
	0.01	6.6	11.7	14.9	17.8

$$\therefore \quad n = \frac{2 \times 0.22 (1 - 0.22) 10.5}{0.23^2}$$

$$= \frac{3.5574}{0.529}$$

$$n = 67.2$$

This means that a sample size of 67 women in each occupational group is required. However, the researcher increased the sample size to 100 to ensure a good representation of the population and also to make up for drop-outs. Equal number of women among the three occupational groups were studied in each community. This brought the total number of women studied in each community to 150. In other words 50 farmers, 50 petty traders, and 50 teachers were studied in each community. The total number of women studied was 300.

METHODS OF DATA COLLECTION

3.3 PRELIMINARY VISIT

Preliminary visits were made to these communities. Such visits enabled the researcher get acquainted with the village settings, village heads and community leaders.

3.4 FOCUS GROUP DISCUSSION

Five sessions of focus group discussion (FGD) were conducted particularly to obtain information on cultural beliefs about women. For this purpose focus group guide (triger questions) was constructed and used by the researcher during each session (see appendix i). The guide helped the discussion to flow along desired direction based on the objective of the study. The researcher took note and also tape recorded the discussions. In each community, people used for the focus group discussion (FGD) were selected with the help of village head or community leader to whom the researcher got herself appropriately introduced. The purpose of the research was also made known to the community leaders who then took it upon themselves to involve the villagers. The different groups of people that participated in the focus group discussion include:

1. Young married men within the age range of 25 - 35 years.

2. Middle aged men of 40 - 55 years.

3. Young married women of 18 - 25 years.

4. Married women within the age range of 30 - 45 years.

5. Elderly women of 45 years and above. Each of these groups was made of 8 - 12 people and each meeting lasted between 45 - 60 minutes. The information gathered from the discussion held was also helpful in the construction of the questionnaire. Because of this, the focus group discussion was not limited to cultural belief about women but included other general information on women's health as well as economic problems

3.5 QUESTIONNAIRE

The instrument for data collection for the cross-sectional survey was the questionnaire. After the instrument had been developed and validated by some Home Science and Nutrition lecturers at the University of Nigeria, Nsukka, the selected questionnaire items were organised, typed and distributed to the group of teachers in the two communities. For the farmers and petty traders who were illiterates, data was collected through individualized oral interview.

The questionnaire consisted of five sections:

1. General characteristics of the women and their economic profile.

2. General meal pattern of the women

3. Cultural beliefs.

4. State of health and health seeking behaviour.

5. Health/nutrition knowledge questions.

Selection Of Respondents

In each of the three occupational groups (farming, petty trading and teaching), 100 respondents were used for the cross sectional survey. In the village where the research was conducted, there were no streets or house numbers rather families clustered together in different locations. For farmers, in each cluster, the researcher systematically picked one out of every four households for the survey. This group of people were usually visited in the morning hours as the research was conducted during the pre-planting season. The main market in each of these two communities was purposefully selected and petty traders one out of every two market stalls were systematically selected. Due to the problem of lack of female teachers in these villages, all the available married female teachers were used in order to make up for the required number of respondents. The teachers were visited in their different schools and questionnaires distributed to them during break periods. This was done only after permission was granted by the principal of each school.

3.6 FOOD INTAKE MEASUREMENT

Food intake of the women was measured using a three day - weighed food intake method. A total of 30 women ie 10 from each occupational group were used for this measurement. For each woman or family, the exercise lasted for three week days (3 - days weighed food intake).

All raw ingredients used for food preparation were weighed before cooking as well as the empty pot. Total cooked weight of food was detetmined after cooking. The mother's portion as well as that of other family members were weighed and plate waste noted after consumption. All these were recorded in the weighed food intake form (appendix ii).

Prccedure for Calculation

The weight of cooked food alone was got by substraction.

For example:

Wt . of empty pot = x

Wt. of pot and cooked food = Y

Wt. of cooked food alone = y - x

The quantity of ingredients in the mother's portion was calculated according to the methods outlined by (Olusanya, 1977).

Wt. of cooked food = B

Wt. of mother's portion alone = C

To get the quantities of ingredients in the mother's portion (D), a convertion factor (C/B) was calculated.

This factor was used to multiply all the values of ingredients (A) in the total cooked food. The final result (E) gave the amount of ingredients consumed by the mother

ie C/B x A = E

The nutrient content of 100gm. of the food was calculated using food composition table (FAO, 1968). After computing the nutrient content of 100gm. of the food, the nutrient content of the quantity consumed by the women were also calculated by simple proportion.

For example, if 100gm. of ingredient contain Fgm of protein,

Egm. (quantity the woman ate) will contain

$$\frac{E \times F}{100} = Hg$$

Foods eaten away from home were estimated using household measures and/or selling weights. From these, the energy and nutrient contents were calculated as stated above using food compositin tables (Platt, 1975; FAO,

1968). Chemical analys es were done on local recipes for which no values were available in the food composition tables.

3.7 ANTHROPOMETRY

The anthropometry of all the women were conducted using standard procedure according to Lohman *et al.* (1988).

3.7.1 Height

The height was measured using a height meter. The subject stood on the base of the meter without shoes, feet together, arms at sides and head held comfortably erect. The head piece was lowered down and allowed to press the subject's hair until contact was made with the head. The height was read immediately from the tape.

3.7.2 Weight

Weight was measured with a bathroom scale of 120kg capacity. Each respondent was weighed with minimum clothing, no shoes or jewelry. The respondent stood erect on the centre of the scale with arms at her sides. The weight measurement was then taken to the nearest kilogram.

3.7.3 Calculation of Body Mass Index (BMI)

The body mass index was calculated using the formular

$$BMI = \frac{Wt(Kg)}{Ht^2(M)}$$

Where Wt. = weight of subject in kilogram and Ht = height in meters (FAO/WHO/UNU, 1985)

3.7 MEASUREMENT OF ACTIVITY PATTERN

The activity pattern of the women who participated in the 3 - days weighed food intake were recorded using the diary method. This was to find out the actual number of hours the women spent on work and leisure daily. During the weighed food intake exercise, the women were closely monitored minute by minute to find out the amount of time spent on economic activities, house work, child care and food chain activities (work and work related activities); hours spent on all forms of social and religious activities (voluntary activities) and also hours spent on all forms of relaxation like sleep and rest (subsistence activities). At the end of the three days, all these periods were added and divided by three. This gave the average number of hours spent by these women daily on work and work related activities, voluntary and subsistence activities.

CLINICAL EXAMINATION

The external part of the body of the women were examined for overt signs of mal-nutrition such as muscle wasting, angular stomatitis, bleeding gum

and dermatitis. The women with forms of mal-nutritional disorders (angular stomatitis and muscle wasting) were noted.

DATA ANALYSIS

Tape recorded discussion for each of the focus group discussion (FGD) session was transcribed and compared with the summary note taken during the FGD. These data were compared and finally a comprehensive result of all the FGD held was compiled by the researcher.

Information gathered from the questionnaire which included general characteristics of the women, their economic profile, general meal pattern, cultural beliefs, women's state of health and health seeking behaviour as well as their health/nutrition knowledge scores were tabulated according to occupational groups of the women. The tabulated results were analysed statistically using chi square, test for proportion, analysis of variance (ANOVA) as well as descriptive statistics such as means and percentages.

Food intake data was calculated and the mean energy and nutrient intake of women in the three occupational groups were obtained. Mean energy and nutrient intake of these women during pregnancy and lactation were also calculated. The mean intake for both energy and other nutrient were compared with appropriate recommended requirements such as calcium (FAO/WHO,

1962), thiamin, riboflavin and niacin (WHO, 1967), ascorbic acid (WHO, 1970), energy and protein (FAO/WHO/UNU 1985) and vitamin A and Iron (FAO, 1988). This showed the level of energy and nutrient intake (nutritional status) of these women groups in relation to the standard (appendix iii). Analysis of variance (ANOVA) of the mean nutrient intakes of the three women groups was also done.

The body mass index (BMI) of these women calculated from their weight and height values were grouped into four ranges and compared with FAO/WHO/UNU (1985), BMI standard. The mean BMI of the three groups were also calculated and further analysed with chi square and test for proportion to show any significant difference among groups.

Finally, Pearson's correlation was used to find relationship between socio-economic/cultural factors such as income, education, workload and age at marriage and nutritional status (level of nutrient intake) as well as health status (BMI and disease count) of these women.

CHAPTER FOUR

RESULT

4.1 FOCUS GROUP DISCUSSION REPORT

Societal rating of Women

More than 80% of the women agreed that women are rated lower than men in the society. Below are some of the women's responses.

"Women are considered as slaves in the society" (Middle aged farmer).

"Women are not just rated as slaves but as goats that are meant to be sold after a while" (Young petty trader).

According to middle aged male farmer, "men rate women lower because that is how nature has made it to be".

Women's Self Rating

Majority (about 70%) of the young and middle aged women claimed that they rated themselves as high as men. However, according to an elderly women, "societal degradation is the lot of womanhood which should not be fought against".

Efforts to break cultural barriers on women

A good number of the young and middle aged women agreed that women now make effort to break cultural barriers placed on them by

"trying to be educated" (Young teacher).

"learning all sorts of trade" (Middle aged farmer).

Most elderly women did not see any need for such effort by the women. According to one of them, "it is our duty to teach our daughters in-law to operate within the societal standards".

Gender Roles

It was also revealed by the women that the gender roles of men include cultivation, cutting of palm fruits, building and other types of strenous jobs. On the other hand, women cook and look after the house and children. They also weed the farm, harvest and process some farm produce. "However, women now help men in some of their stereotyped roles especially in cultivation so as to improve the family food condition" (Middle aged farmer).

Diseases Women Suffer and their Predisposing Factors

According to most of these women, the illnesses which they commonly suffer from as well as the causes, include headache (due to over work), body pains (over work, backing of babies and long trekking), stomach ache (menstral pain), excessive fatigue (over work), malaria (poor nutrition and poor environment) and guinea worm (lack of pipe born water).

Sex Discrimination - Infancy

There are shouts of joy whenever a male child is born (Middle aged male farmer). The "lying in" period for a mother who delivered a male child is seven native weeks (28 days) while it is only three native weeks (12 days) for a woman who deliverd a female child (Middle aged male farmer). The women also expressed their desire to bear as many sons as possible because:

"we want our husbands to like us, care for us and the children" (Middle aged petty trader).

"we want to be accepted in the society" (Young female farmer).

Childhood

Both the young and middle aged men reported that there is no preferential treatment between male and female children in terms of family food distribution and health care services. According to a middle aged male farmer, "the female child was formed with the father's blood so she should be cared for". However, when it comes to education, the two groups had different views. Below are some of their responses.

"When resources are limited, the female child should be trained if she is more intelligent" (young male farmer).

"Only the male child should be trained whenever resources are limited" (middle aged male farmer). The reasons middle aged men gave for the above unanimous response include:

"The male child is the one who will take over the family responsibilities from the father when he dies so he must be made to become somebody".

"It is the males that solve problems in the soceity".

"Training a female child is like spending money on a stranger who can leave to an unknown destination any moment. If you train a female child, when she marries all the money spent on her is lost".

"Infact training a female child is like training a cat. After spending money to nourish a cat to maturity, it cannot be killed and eaten rather, it will be left in the house till one day when it will be fed up with the house and then runs away".

The two men groups are of the opinion that if a girl is schooling, and suitors start coming, she should leave school and get married.

"However, this can only happen if the girl is interested in getting married" (Young male farmer).

Motherhood

Majority of the men reported that when a woman gets married, all that her husband has belong to her. However, this only happens when the woman gives birth to male child or children.

"A woman who does not give birth should not be regarded as a wife" (middle aged male farmer).

"If a woman bears only female children, she should know that she is still standing with one leg in the husband's house" (young male farmer).

Further enquiries revealed that practically, a wife does not have access to her husband's property whether she has male child or not. In most cases, the more valued product from economic trees belongs to the man while the less valued one belonges to the wife. Also she is the one to process all such produce to marketable state, then she hands over to her husband almost every thing.

From the discussion, it was also found that if a woman has only female children, when her husband dies, his closest relation (male) claims the deceased's property. However, if the deceased had male children, all his property belong to those male children their ages not withstanding.

From the women's point of view, evidences of sex discrimination against them includes

"women are not allowed to go to school (middle aged teacher).

We don't have any right to our father's property (middle aged petty trader).

"We are not supposed to own any landed property except when purchased" (middle aged female farmer).

"We are forced to marry early" (young female farmer).

"Married women are forbidden by law from rendering any type of help to the parents or relatives without full permission from the husband" (middle aged female farmer).

The women disclosed some discriminatory practices in family food distribution which are still practised by majority of them to include:

"a woman must dish out her husband's portion before her own and that of the children" (young female farmer),

"the best portion of food must go to the husband" (middle aged petty trader),

"if the man is not around, his share must never be given out to anybody" (middle aged female farmer),

"no matter how small the food may be, the woman must give her husband first if she must eat out of it herself" (middle aged petty trader). According to the men, "a good woman must serve her husband first and give him the best portion of the meal because he is the head of the family" (middle aged man).

Foods which these women were culturally forbidden from eating include snake, caterpillar, snail, grasscutter, gizzard, owl and monkey. Snail and grasscutter are forbidden during pregnancy in most cases. The elderly and most of the middle aged women adhered to culturally forbidden foods. However, according to most of the young women, "we are being encouraged at health centres to eat snail but our problem is that they are costly". Most of the young women were not even aware of some of the culturally forbidden foods because these foods are scarce and rarely form part of the family menu.

4.2 DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF THE WOMEN

Table 2: Age range, educational attainment and income of Farmers, Petty traders and Teachers (percentage)

A	Age in Years	Farmers N = 100	Petty traders N = 99	Teachers N = 83	Total N = 282
	18 - 24	16[a]	15.2[a]	1.2[b]	11.4
	25 - 32	34	40.4	39.7	36.2
	33 - 39	37	33.3	39.8	36.5
	40 - 45	13	11.1	25.3	15.9
	Total	100	100	100	100

B	Educational qualitification	Farmers N = 100	Petty traders N = 99	Teachers N = 99	Total N = 298
	No formal education	27	24.2	-	17.1
	Didn't complete primary sch.	37	32.2	-	23.3
	First Sch. leavving certificate	32	23.2	-	18.5
	Didn't complete second. Sch.	2	15.2	-	5.7
	GCE/WAEC	2	5.1	-	2.3
	TC II/Diploma	-	-	14.2	4.7
	HND/NCE/B.Sc./B.A	-	-	74.7	24.8
	M.Sc./Ph.D	-	-	11.1	3.7
	Total	100	100	100	100

C	Monthly income (₦)	Farmers N = 100	Petty traders N = 99	Teachers N = 85	Total = 294	N
	<1000	85	57.6	-	50	
	1000 - 2000	13	41.4	28.8	26.4	
	2100 - 5000	2	1.0	74.1	23.2	
	>5000	-	-	1.2	0.4	
	Total	100	100	100	100	

a - b values with different supperscript in the same row are significantly different ($X^2 = 18.52$, $Z = 3.04$; $P < 0.05$).

Chi square analysis on Table 2A revealed that there is a significant difference in the age distribution of the women in the three occupational categories ($X^2 = 18.5$; $P < 0.05$). However further statistical analysis (test for proportion) showed that this difference is only in the age group 18 - 24 years. Fewer number of teachers (2.1%) were in this age group compared to petty traders (15.2%) and farmers (16%). The age distribution of farmers and petty traders were similar.

Educational levels of the teachers were quite higher than those of the farmers and petty traders. Majority of the farmers (37%) and petty traders (32.3%) did not complete primary school education. On the other hand, majority of the teachers had either HND/NCE/B.Sc or B.A. Twenty-seven percent of the farmers and 24.2% of the petty traders had no formal education.

Most teachers (74.1%) earned between ₦2100 - ₦5000 monthly and none earned less than ₦1000. On the other hand, a good number of the farmers (85%) and petty traders (57.6%) earned less than ₦1000.00 monthly. More petty traders (41.4%) earned between ₦1000 - ₦2000.00 when compared with 28.8% of the teachers and 13% of the farmers in this category.

All the women used for this study were married and were all christians. There were only two women (farmers) that were Hausas, the rest were Ibos.

Table 3: Extra Sources of Income and Income Handling Practices of Farmers, Petty traders and Teachers (percentage)

A	Monthly income (₦)	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 95	N = 294
	Farming	-	92	67.4	52.7
	Evening lesson	1	-	7.4	2.7
	Poultry keeping	2	-	5.3	2.4
	Sale cooked food/snacks	-	-	3.2	1
	Sale stored food items	1	-	2.1	1
	Sale clothing materials	-	-	1.1	0.3
	Hair plaiting	2	2	3.2	2.4
	Sewing	4	2	2.1	2.7
	Hawking	2	-	-	0.7
	Sell icecream	-	1	2.1	1.0
	Fry garri for sale	2	-	-	0.7
	Provision shop	-	-	1.1	0.3
	Do nothing else	86	3	5.3	32
	Total	100	100	100	100

B	Income handling practices	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 85	N = 295
	Put it in joint account	-	2	9.2	3.7
	Put it in my account	1	-	-	0.3
	Give to husband	1.5	-	4.1	3.1
	Spend it on myself	-	-	2.0	0.7
	Spend it on my family	93.5	98	84.7	92.2
	Total	100	100	100	100

Table 3A showed that almost all the petty traders (92%) engaged in farming to supplement their income. The teachers engaged in many more activities than the farmers and petty traders. Infact, up to 86% farmers had no extra source of income.

From table 3B, it can be seen that majority of the women (92.2%) spent their income on their families. Some (9.2%) of the teachers put their income in the family's joint account however only 2% of the petty traders and none of the farmers did so. About 5.1% of the farmers and 4.1% of the teachers gave their income to their husbands. No petty trader practiced such.

Table 4: Monthly Income of Husbands of Farmers, Petty traders and Teachers (Percentage)

Income (₦)	Farmers	Petty traders	Teachers	Total
	N = 97	N = 78	N = 46	N = 221
< 1000	24.7[a]	0.0[b]	6.5[b]	12.2
1000 2000	70.1[a]	79.5[a]	15.2[b]	62
2100 - 5000	5.2	19.2	78.2	25.3
> 5000	-	1.3	-	0.5
Total	100	100	100	100

a - b values with different superscript in the same row are significantly different ($X^2 = 107.4$; $P < 0.01$, $Z = 3.15$ [for <1000 Category], $Z = 5.29$, [for 1000 - 2000 category]; $P < 0.05$).

Chi square analysis of the data in Table 4 showed that the income of the husbands of each of the women groups differed significantly ($X^2 = 107.4$; $P < 0.01$). Further statistical analysis (tests for proportion [Z]) revealed that for the income range < 1000, there were significantly (24.7%) more farmer's husbands ($Z = 3.15$; $P < 0.05$) compared to those of petty traders (0.0%) and teachers (6.5%). The number of husbands of farmers (70.1%) and petty (79.5%) who earned 1000 - 2000 were significantly ($Z = 5.29$; $P < 0.05$) higher than those of the teachers (15.2%). On the other hand, more of the teachers' husbands

(78.2%) earned 2100 - 5000 than those of the farmers (5.2%) and petty traders (19.2%).

Table 5: Physiological state and other family characteristics of Farmers, Petty traders and Teachers (Percentage)

A	Physiological State	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 95	N = 294
	Pregnant	13	18.2	13.7	15
	Lactating	31	26.3	13.7	23.8
	None of the above	56	55.6	72.6	61.2
	Total	100	100	100	100

B	Family Characteristics	Farmers	Petty traders	Teachers	P-value
	Mean family Size	5.71 ± 2.1	6.07 ± 2.4	6.67 ± 2.1	0.05
	Mean number of pregnancies	4.97 ± 2.59	4.67 ± 2.3	4.1 ± 2.3	0.05
	Mean number of children	3.70 ± 2.1	3.76 ± 2.1	3.69 ± 1.87	0.05
	Mean number of dead children	1.99 ± 1.83[a]	0.89 ± 1.0[a]	0.45 ± 0.81[b]	0.03
	Mean age at marriage	16.5 ± 3.0[b]	17.1 ± 4.0[b]	24.0 ± 7.3[a]	0.05
	Mean age at first issue	18.0 ± 2.5[b]	18.8 ± 3.5[b]	25.6 ± 8.2[a]	0.05

a-b values with different superscript in the same row are significantly different ($P \leq 0.05$).

Table 5A revealed that there were more teachers (72.6%) that were neither pregnant nor lactating than the farmers (56%) and petty traders (55.6%). On the other hand, more farmers (31%) and petty traders (26.3%) were lactating than the teachers (13.7%). Just about 15% of the women were pregnant.

This same table also showed that the teachers had higher family size (6.67 ± 2.1) but fewer number of pregnancies (4.1 ± 2.3) than the farmers (5.7 ± 2.1 and 4.9 ± 2.5, respectively) and petty traders (6.07 ± 2.4 and 4.67 ± 2.3, respectively). The farmers (1.99 ± 1.83) and petty traders (0.89 ± 1.0) had significantly ($P < 0.03$) more cases of child mortality than the teachers (0.45 ± 0.81). However, the teachers married and gave birth to first issue at a later age 24.0 ± 7.2 and 25.6 ± 8.2, respectively than the farmers (16.5 ± 3.0 and 17.1 ± 4.0, respectively) and petty traders (17.1 ± 4.0 and 18.8 ± 3.5, respectively).

Table 6: Reported Workload and observed activity pattern of farmers, petty traders and teachers

A	Reported hours spent on work daily	Farmers	Petty traders	Teachers	Mean
		N = 82	N = 88	N = 66	
		8.8 ± 3.1	6.9 ± 2.4	6.0 ± 1.2	7.2 ± 2.2

B	Observed activity pattern	Farmers	Petty traders	Teachers	Mean
		N = 9	N = 9	N = 10	
	Work and work related activity	9.7 ± 2.2	11.1 ± 1.9	11.2 ± 2.0	10.7 ± 2.0
	Voluntary activity	3.3 ± 1.2	2.6 ± 1.0	3.4 ± 1.9	3.1 ± 1.3
	Subsistence activity	11.3 ± 1.2	10.7 ± 0.9	10.1 ± 1.5	10.7 ± 1.3

Reported number of hours spent on work daily was highest among the farmers (8.8 ± 3.1) than the petty traders (6.9 ± 2.4) and the teachers (6 ± 1.2). However, observed activity pattern (table 6b) revealed that the number of hours spent on work and work related activities (economic activities, house work, food chain activities and child care) was higher among the petty traders (11.1 ± 1.9) and teachers (11.2 ± 2.0) than the farmers (9.7 ± 2.2). The number of

hours spent on all forms of leisure like sleep and rest (subsistence activities) was highest among the farmers (11.3 ± 1.2) followed by the petty traders (10.7 ± 0.9) and lastly the teachers (10.1 ± 1.5). The teachers, on the other hand, spent the highest number of hours on voluntary (all forms of social and religious activities like visitation, going to church, attending meeting and other social gathering). Analysis of variance of the mean number of hours spent on different activities by these categories of women per day showed no significant different ($P > 0.05$).

4.3 FOOD HABITS, PROCUREMENT AND DISTRIBUTION PRACTICES OF FARMERS, PETTY TRADERS AND TEACHERS

Table 7: Meal Frequencies and Skipping Habits of Farmers, Petty traders and Teachers

A	Meal Frequency	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 99	N = 298
	Three times	23	28.3	57.6	36.2
	No. depends on availability of food	77	71.7	42.4	63.8
	Total	100	100	100	100

B	Skip meals?	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 98	N = 297
	Yes	78	76.8	80.6	78.4
	No	22	23.2	19.4	21.6
	Total	100	100	100	100

C	Meals skipped	Farmers	Petty traders	Teachers
	Breakfast	71.1	67.7	52
	Lunch	75.3[a]	65.6[a]	22.4[b]
	Dinner	1	-	1
	Snacks	26.8	42.7	43.9

a - b values with different superscript in the same row are significantly different ($x^2 = 62.19$, $Z = 2.15$; $P < 0.05$).

Table 7A showed that more teachers (57.6%) ate three times a day compared with 23% farmers and 28.3% petty traders. Up to 71.7% of the petty traders and 77% farmers as against 42.4% teachers ate less or more than three times a day depending on food availability. Majority of these women (78.4%) reported that they skipped their meals. However, farmers skipped more breakfast and snacks than the petty traders and teachers. The number of teachers (22.4%) that skipped lunch was significantly lower ($X^2 = 62.19$, $Z = 2.15$; $P < 0.05$) than that of the farmers (75.3) and petty traders (65.6%).

Table 8: Reasons for skipping meals by Farmers, Petty traders and Teachers (percentage)

A	Breakfast	Farmers	Petty traders	Teachers	Total
		N = 69	N = 68	N = 51	N = 188
	To save money	5.8	1.4	15.7	7
	Very busy	27.5	30.9	2.0	21.8
	To loose weight	-	2.9	13.7	4.8
	Out for work	4.3	7.4	23.5	10.6
	Food not enough	61.9	54.4	29.4	50.0
	Others	1.4	3.0	15.7	5.8
	Total	100	100	100	100

B	Lunch	Farmers	Petty traders	Teachers	Total
		N = 74	N = 64	N = 23	N = 161
	To Save money	17.6	7.8	4.3	11.8
	Very busy	41.9	23.4	21.7	31.6
	To loose weight	-	1.6	8.8	1.9
	Out for work	1.4	18.8	21.8	11.2
	Food not enough	29.6	45.3	34.8	36.6
	Others	9.5	3.1	8.6	6.8
	Total	100	100	100	100

C	Snacks	Farmers	Petty traders	Teachers	Total
		N = 20	N = 34	N = 36	N = 90
	To save money	95	94.2	75	86.7
	Others	5	4.8	25	13.3
	Total	100	100	100	100

A close examination of Table 8 showed that inadequate food availability was the major reason why these categories of women skipped breakfast and lunch. The major reason why snack was missed was "to save money". Farmers and petty traders more often than teachers claimed they were too busy to eat breakfast and lunch. On the other hand, "to loose weight" and "out for work" affected the food habit of the teachers more than the other two groups. Other reasons which did not have much influence on these women include "fasting", "too tired", "not hungry, when upset" and "formed the habit".

Table 9: Snacks consumption pattern of Farmers, Petty traders and Teachers and their reasons for consuming such (percentage)

A	Consume snack?	Farmers N = 100	Petty traders N = 98	Teachers N = 97	Total N = 295
	Yes	44	79.6	77.6	66.8
	No	56	20.4	22.7	33.2
	Total	100	100	100	100
B	Types consumed	Farmers N = 44	Petty traders N = 78	Teachers N = 75	Total N = 197
	Fruits	86.4	30.3	18.9	38.5
	Wheat products	-	12.7	51.3	24.4
	Groundnut	2.3	16.5	9.4	10.7
	"Okpa/Moi-Moi/akara"	11.4	17.7	4	11.2
	African yambean /breadfruit	-	8.9	1.3	4.1
	Carbonated beverages	-	1.3	6.7	2.5
	'Abacha'	-	10.1	5.4	6
	Fried yam/potato /plantain	-	2.5	4.0	2.5
	Total	100	100	100	100
C	Reasons	Farmers N = 42	Petty traders N = 78	Teachers N = 75	Total N = 195
	To replace meal	-	7.7	5.3	5.1
	To make up meal	7	24.4	28.0	22.1
	Just like it	90.5	67.9	65.3	71.8
	They are available	2.4	-	1.3	1
	Total	100	100	100	100

Okpa - dehulled bambara groundnut pudding; Moimoi - dehulled cowpea pudding; Akara - fried cowpea paste; Abacha - Cassava flakes mixed with local sauce

As shown in Table 9, it can be seen that more petty traders (79.6%) and teachers (77.6%) took snacks than the farmers (44%). Majority of the farmers (86.4%) and petty traders (30.3%) took fruits as the major snack while majority of the teachers took wheat products (51.3%).

More farmers (90.5%) consumed snacks just because they liked them when compared with petty traders (68.4%) and teachers (64.9%). On the other hand, 24.1% of the petty traders, 28.4% of the teachers and only 7% of the farmers took snack to make up their meals. Even when up to 7.6% of the petty traders and 5.4% of the teachers ate snack to replace meal, none of the farmers ate snack for such reason.

Table 10: Types of meals eaten by Farmers, Petty traders and Teacher as obtained by 24 hours food recall (percentage)

A	Breakfast	Farmers	Petty traders	Teachers	Total
		N = 95	N = 93	N = 92	N = 280
	'Akpu'/'garri'/ pounded yam/soup	44.2	31.9	7.6	32.6
	Yam & pigeon pea /'achicha'/yam & cowpeas	10.5	16.0	2.2	7.6
	Rice (stew or jollof)	9.5	8.5	8.7	8.9
	Pap/'akara'/'okpa' /'moimoi'	3.2	5.3	29.4	12.7
	Tea/bread	1.1	2.1	10.9	4.7
	Others	14.7	34.5	31.4	20.7
	Nothing	16.8	11.7	9.8	12.8
	Total	100	100	100	100

B	Lunch	Farmers N = 95	Petty traders N = 94	Teachers N = 88	Total N = 277
	'Akpu'/garri /pounded yam/soup	10.5	25.5	48.9	28.3
	Yam pigeon pea /achicha/yam & cowpeas	6.3	18.1	4.5	9.6
	Rice (stew or jollof)	5.2	10.6	18.2	11.4
	Yam/cocoyam/oil	41.1	4.3	1.1	15.5
	Yam and vegetable	12.6	10.6	2.3	8.5
	Others	9.5	23.5	19.3	16.3
	Nothing	14.7	7.4	5.7	10.4
	Total	100	100	100	100

C	Dinner	Farmers N = 100	Petty traders N = 99	Teachers N = 27	Total N = 286
	'Akpu'/garri /pounded yam/soup	69	59.6	36.8	56.7
	yam & pigeon pea /'achicha'/yam & cowpeas	8	9.1	11.5	9.4
	Rice (stew or jollof)	9	15.1	12.6	12.3
	Rice&cowpeas/ 'Ayaraya'	11	2.0	8.0	7.0
	Others	1	14.2	31.1	14.6
	Nothing	2	2.0	-	1.0
	Total	100	100	100	100

Akpu - fermented cassava pudding; Achicha - steamed cocoyam chips, pigeon pea and local stew; Akara - fried cowpea paste; Okpa - dehulled bambara groundnut pudding; Moimoi - dehulled cowpea pudding; Ayaraya - milled corn, pigeon pea, green vegetables and local stew.

Table 10 revealed that majority of the farmers (44.2%) and petty traders (31.9%) ate "akpu"/garri/pounded yam/soup for breakfast as against only (7.6%) of the teachers. The major food teachers ate in the morning was pap/"akara"/"okpa"/"moimoi". The number of the teachers (48.9%) that ate "akpu/garri/pounded yam/soup for lunch was higher than that of the farmers (10.5%) and petty traders (25.5%). Quite a good number of the farmers (41.1%) ate yam/cocoyam/oil for lunch as against only 4.3% of the petty traders and 1.1% teachers. Majority of these categories of women took "akpu/garri/pounded yam/soup for dinner. For dinner, more teachers ate other foods (like "abacha", egg/bread, fried potato/plantain, milled corn pudding ["nrioka"], pap, yam pottage/stew and plantain pottage/stew) than farmers and petty traders. However, more petty traders ate other foods for breakfast and lunch.

Table 11: Culturally forbidden foods adhered to by Farmers, Petty traders and Teachers (percentage)

A	Do you adhere to culturally forbidden foods	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 99	N = 297
	Yes	11	9.1	5.1	8.4
	No	89	90.9	94.9	91.6
	Total	100	100	100	100
B	Foods that are not eaten	Farmers	Petty traders	Teachers	Total
		N = 11	N = 9	N = 5	N = 25
	Gizzard	45.5	66.7	80	60
	Snail	54.5	77.8	40	60
	Snake	72.7	88.9	100	84
	Grasscutter	81.8	77.8	100	84
	Others	27.3	22.2	60	32

Multiple responses allowed.

Table 11 showed that only 8.4% of the women did not eat culturally forbidden food. The commonly tabood foods that respondents did not eat included snakes (84%), grasscutters (84%), gizzards (60%) and snails (60%). Other forbidden foods that very few women rejected include fatty meat, kite, owl and monkey.

Table 12: Family food purchaser and percentage of monthly income spent on food by husband and wives of the three occupational groups (percentage)

A	Purchaser	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 98	N = 297
	Wife	46	40.4	58.1	48.1
	Husband	-	1.0	2	1
	Grown ups	5	3.0	1	3
	Husband/wife and grown ups	-	-	12.2	4
	Wife and husband	-	1.0	8.2	3
	Wives and grown ups	49	54.5	18.4	40.7
	Total	100	100	100	100

B	Percentage income spent on food	Farmers	Petty traders	Teachers
	Wives' income	90.43 ± 11.3	92.21 ± 10.5	70.73 ± 24.0
	Husbands' income	71 15 ± 14.3	68.10 ± 13.0	52.56 ± 25.5

Table 12 revealed that shoping for family foods was carried out by either the wives (48.1%) or wives and grown ups (40.7%). However, for the teachers, fewer number of wife/grown ups (18.4%) participated in purchasing family food when compared with 49% famers and 54.5% petty traders. More

husband/wife/grown ups as well as wife/grown ups procured the family food for the teachers than in the other two groups.

Women spent a greater percentage of their income on family food (table 12B). It can also be seen from the table that the women farmers and their husbands (90.43 ± 11.3 and 71.15 ± 14.3; respectively) as well as the petty traders and their husbands (92.21 ± 10.5 and 68.10 ± 13, respectively) spent more of their income on food than teachers and their husbands (70.73 ± 24 and 52.56 ± 25.5, respectively)

Table 13: Food distribution practices and percentage of total cooked food consumed by husbands and wives of the three occupational groups (percentage)

A	Measures taken when food is small	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 96	N = 295
	Share it equally	8	11.1	27.1	15.3
	Give it to children only	81	85.9	68.8	78.6
	Give it to husband	11[a]	3[a]	1[b]	5.1
	Give it to wife and children	-	-	3.1	1
	Total	100	100	100	100
B	When mother's portion is dished out	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 98	N = 297
	Along with husbands'	18	24.2	66.3	36
	After husband's own	24	14.1	1	13.1
	After husband/children	57	55.6	31.6	48.2
	None of the above	1	6	1	2.7
	Total	100	100	100	100
C	Who receives best portion	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 98	N = 297
	Husband	62	50.5	24.5	45.8
	Children	16	15.2	27.6	19.5
	Children/husband	16	27.3	28.6	24
	Myself/Husband	2	2	5.1	3
	Share equally	4	5.1	14.3	7.7
	Total	100	100	100	100

D	Percentage of total cooked food consumed by	Farmers	Petty traders	Teachers
	Wives	19.33 ± 7.76	18.63 ± 7.13	21.4 ± 4.5
	Husbands	28.6 ± 11.9	24.92 ± 10.14	25.3 ± 4.97

a - b values with different superscript in the same row are significantly different ($X^2 = 38.56$; $P<0.03$, $Z = 2.4$; $P<0.05$).

Table 13A showed that when food is small, these categories of women (farmers, 81%; petty traders, 85.9% and teachers, 68.8%) would give the food preferentially to the children. The number of the farmers that gave the food to husband was significantly higher than that of the teachers ($Z = 2.4$; $P<0.05$). Over half of the farmers (87%) and petty traders (55.6%) served themselves after their husbands and children compared with 31.6% of the teachers. About two third (66.3%) of teachers would serve their foods along with that of their husbands. Many farmers (62%) and petty traders (50.5%) gave the best portion of the food to their husbands as against only 24.5% of the teachers. The number of the teachers who served best portion to children or shared it equally (27.6% and 14.3%, respectively) was higher than that of the farmers (16% and 4% respectively) and petty traders (15.2% and 5.1% respectively).

Table 13D revealed that the quantity of food wives ate in relation to that of the husbands was lower among the farmers (19.33 and 28.6% respectively) and petty traders (18.63 and 24.92 respectively) than among the teachers (21.4 and 25.3 respectively). This table also showed that the teachers consumed greater quantity of family food (21.4%) than the farmers (19.33%) and petty traders (18.63%).

Table 14: Eating Practices of Farmers, Petty traders and Teachers and their reasons (percentage)

A	Eat with husband	Farmers	Petty traders	Teachers	Total
		N = 100	N = 98	N = 95	N = 293
	Yes	34	41.8	83.2	52.6
	No	66[a]	58.2[a]	16.8[b]	47.4
	Total	100	100	100	100

B	Reasons for not eating with husband	Farmers	Petty traders	Teachers	Total
		N = 66	N = 57	N = 14	N = 167
	When pregnant	-	-	7.1	0.73
	When breastfeeding	6.6	-	7.1	3.6
	Husband not around	48.5	77.2	71.6	62.8
	During menstration	-	-	7.1	0.73
	Small children to attend to	45.4	22.8	7.1	32.1
	Total	100	100	100	100

a - b values with different superscript in the same row are significantly different ($X^2 = 63.43$; $P<0.01$; $Z = 2.7$; $P<0.05$)

Chi square analysis of the data on table 14A revealed that there was significant difference in the response of these groups of women ($P<0.01$). Further statistical analysis however revealed that only the number of teachers (16.8%) who did not eat with their husbands differed significantly ($Z = 2.7$; $P<0.05$) from that of the farmers (66%) and petty traders (58.2%). More

teachers (83.2%) ate with their husbands than the farmers (34%) and petty traders (41.8%).

For those who did not eat with their husbands, the major reason among all groups (62.8%) was because husbands were not around. Another important reason among the farmers (45.4%) and petty traders (22.8%) is small children to attend to.

4.4 NUTRITIONAL AND HEALTH STATUS AND HEALTH SEEKING BEHAVIOUR OF FARMERS, PETTY TRADERS AND TEACHERS

Table 15: Clinical assessment, anthropometric assessment and BMI ranges of Farmers, Petty traders and Teachers

A	Clinical signs	Farmers	Petty traders	Teachers
		N = 100	N = 99	N = 99
	Angular stomatitis	3	2	0.0
	Muscle wasting	16	14.1	6.1
B	Anthropometric assessment	Farmers	Petty traders	Teachers
	Mean age (yrs)	31.4 ± 3.9	30.7 ± 3.6	34.3 ± 4.1
	Mean height (cm)	158.9 ± 5.4	158.0 ± 4.4	161.0 ± 6.5
	Mean weight (kg)	53.5 ± 6.3	52.7 ± 5.7	61.8 ± 1.2
C	BMI ranges	Farmers	Petty traders	Teachers
	Low < 18.6	16[a]	13.0[a]	4.9[b]
	Desirable range 18.7-23.8	72.7	78	49.2
	Over weight 23.9 - 28.6	11.3[a]	7.8[a]	37.7[b]
	Obsese > 28.6	-	1.2	8.2
	Mean	21.1 ± 2.5	21.0 ± 2.3	23.8 ± 3.7

a - b values with different superscript in the same row are significantly different ($X^2 = 53.65$, $Z = 2.12$ [for low BMI category], $Z = 2.47$ [for desirable range category]; $P < 0.05$).

Clinical assessment of the women (Table 15A) revealed that only the farmers (3%) and petty traders (2%) suffered from angular stomatitis. Fewer teachers (6.1%) were wasted compared with the farmers (16%) and petty traders (14.1%).

The average age in years, height (cm) and weight (kg) of the teachers (34.3 ± 4.10, 161 ± 6.57 and 61.77 ± 1.24 respectively) were higher than those of the farmers (31.4 ± 3.9, 158.99 ± 5.43 and 53.56 ± 6.3 respectively). and the petty traders (30.7 ± 3.6, 158.0 ± 4.42 and 52.71± 5.74 respectively). Farmers and petty traders had had similar age, height and weight ranges. The BMI ranges showed that majority of the farmers (72.7%), petty traders (78.0%) and teachers (49.2%) were within the desirable range. However, the number of the farmers and petty traders that had low BMI was higher than that of the teachers ($Z = 2.14$ $P<0.05$) while the number of the teachers who were over-weight were higher than those of the farmers and petty traders ($Z = 2.47$ $P<0.05$).

Table 16: Mean nutrient intake ± SE of the Non-pregnant, Non-lactating women compared with FAO/WHO/UNU Recommendations

No of women		Weight (kg)		Energy (MJ)	Protein (g)	Calcium (mg)	Iron (mg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	VIT. A (mg RE)	Ascorbic acid (mg)
	Farmers											
4		57.7 ± 1.2	Actual Intake	4.8 ± 0.5	35.8 ± 8.4	472 ± 1.6	17.5 ± 11.9	0.61 ± 5.1	0.34±0.08	4.8±1.5[a]	154±587	30.4±10.8
			Rec. Intake	6.5	45.0	450	29.0	0.9	1.3	15.8	500	30
			Percentage	(73.8%)	(80%)	(104.8%)	(60.3%)	(66.6%)	(26.1%)	(30.3%)	(308%	(101%)
	Petty Traders											
7		64 ± 3.1	Actual Intake	5.9 ± 0.6	43.1 ± 5.0	491 ± 68.6	16.9 ± 2.4	0.79±0.18	0.4 ± 0.6	6.2 ± 1.3[a]	1325±970	30.0±7.2
			Rec. Intake	6.5	45.0	450	29	0.9	1.3	15.8	500	30
			Percentage	(91%)	(95.7%)	(109%)	(58.2%)	(87%)	(30.7%)	(40.7%)	(265%)	(100%)
	Teachers											
6		63 ± 3.5	Actual Intake	6.4 ± 0.74	58.6 ± 13.8	623.1 ± 129	22.2 ± 3.5	0.95 ± 0.1	0.52 ± 0.1	11.2±1.7[b]	2410±150	52.7±14
			Rec. Intake	6.5	45	450	29	0.9	1.3	15.8	500	30
			Percentage	(98.5%)	(130%)	(138.4%)	(76.5%)	(105%)	(40%)	(70.8%)	(482%)	(175%)

a - b values with different superscripts in the same column are statistically different ($P<0.05$).

Source:

Calcium requirements (FAO/WHO Report No. 230, 1962). Thiamin, riboflavin and niacin requirements (WHO Report No. 362, 1967). Ascorbic acid requirements (WHO Report No. 452, 1970). Energy and protein requirements (from FAO/WHO/UNU Report No 724 1985) vitamin A and Iron requirements (from FAO Report No 23, 1988).

A comparison of the nutrient intake of these three groups of women on Table 16 showed that the teachers had a better intake than the farmers and petty traders. This is because, the teachers were able to meet their requirements for protein (130%), calcium (138.4%), thiamin (105%), vitamin A (482%) and ascorbic acid (175%). On the other hand, the farmers and petty traders were only able to meet their requirements for calcium (104.8%) and 109%, respectively, Vitamin A (308% and 265%, respectively) and Ascorbic acid (101% and 100%, respectively). While farmers did not meet their energy intake (<75%), the intakes for petty traders and teachers were marginal (91% and 98.5%, respectively). However, analysis of variance (ANOVA) of the actual intake of the three revealed that there is no significant difference ($P<0.05$) in the mean intake of these women except for the mean intake of niacin. The mean niacin intake of the teachers (11.2 mg/day) was significantly ($P<0.05$) higher than those of the farmers (4.8mg/day) and petty traders (6.2mg/day).

Table 17: Mean nutrient intake ± SE of the women according to physiological group compared with FAO/WHO/UNU recommendations

No of women	Weight (kg)		Energy (MJ)	Protein (g)	Calcium (mg)	Iron (Mg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	VIT. A (Mg RE)	Ascorbic acid(mg)
Neither Pregnant Nor Lactating women											
17	62.2 ± 2.0	Actual Intake	5.8 ± 9.4	46.9 ± 5.6	532.9± 56.8	18.9 ± 1.7	0.83± 0.1	0.43±0.05	7.6±0.96	1758.6±587	30.4± 11
		Rec. Intake	6.5	45	450	29	0.9	1.3	15.8	500	30
		Percentage	(89.2%)	(104%)	(118.4%)	(65.2%)	(92.2%)	(33.1%)	(48.1%)	(351%	(101%)
Lactating Women											
8	52.1 ± 4.2	Actual Intake	4.9 ± 0.4	35.3 ± 5.8	424 ± 37.2	13.5 ± 2.5	0.65± 0.1	0.31±0.05	5.86 ± 1.2	305±200	44.5± 14
		Rec. Intake	68	62.5	1100	17	1.08	1.49	17.82	580	50
		Percentage	(61.2%)	(56.5%)	(38.5%)	(79.4%)	(60.1%)	(20.8%)	(33%)	(35%)	(89%)
Pregnant women											
3	67.3 ± 6.1	Actual Intake	5.9 ± 0.3	45 ± 7.0	662.2 ± 2.0	15.8 ± 0.87	0.65 ± 0.1	0.48±0.02	9.3± 2.7	2858±1055	57.2±1.1
		Rec. Intake	7.3	51	1100	29	1.0	1.37	16.4	600	50
		Percentage	(81.5%)	(88.2%)	(60.2%)	(54.45%)	(65%)	(35%)	(56.7%)	(476%)	(114%)

Source:

Calcium requirements (FAO/WHO Report No. 230, 1962). Thiamin, riboflavin and niacin requirements (WHO Report No. 362, 1967). Ascorbic acid requirements (WHO Report No. 452, 1970). Energy and protein requirements (from FAO/WHO/UNU Report No 724 1985) vitamin A and Iron requirements (from FAO Report No 23, 1988).

Table 17 revealed that the women who were neither pregnant nor lactating were able to meet their recommended intake for protein (104%), calcium (118.4%), vitamin A (351%) and vitamin C (101 %). This same group had a marginal intake of thiamin (92.2%) but their riboflavin intake (33.1%) was low. There was no increase in nutrient intake during pregnancy and lactation. As a result, these women met less of their recommended intake during such periods. The pregnant women met their requirement for vitamin A and vitamin C (476% and 114%, respectively) while the lactating women only met their vitamin A requirement (353%). Riboflavin intake was lowest during lactating period (20.8%).

Table 18: Diseases normaly suffered by Farmers, Petty trades and Teachers (Percentage)

Diseases	Farmers N = 100	Petty traders N = 99	Teachers N = 99	Total N = 298
Malaria	79	88.8	84.8	84.2
Diarrhoea	13	15.1	6	11.4
Headache	85	86.8	60.5	77.2
Bodyache	73	52.5	30.3	52
Excessive fatigue	48	36.3	11.1	31.8
Dizziness	30	16.1	2	16.1
Cold	7	5	25.2	12.4
Cough	29	4	20.2	17.8
Pains in the joints	45	15.1	4	21.4
Typhoid fever	4	1	18.1	7.7
Waist/chest pain	13	3	-	5.3
Stomach ache	12	10.1	1	7.7
Worm infestation	1	1	13.1	5
Others	4	6	3	4.3

Table 18 showed that the common illness occurring among all the groups were malaria (84.2%), headache (77.2%), body ache (52%), and excessive fatigue (31.8%). Apart from cold, typhoid fever and worm infestation that were more prevalent among the teachers, farmers suffered from other types of diseases like waist/chest pain, stomach ache, pains in the joint and dizziness more than the other two groups. Diarrhoea was more common among the petty traders (15.1%). On the other hand, few petty traders (4%) suffered from cough compared with the farmers (29%) and teachers (20.2%)

Table 19: Illness experienced within the last two weeks by the Farmers, Petty traders and Teachers (percentage)

Diseases	Farmers	Petty traders	Teachers	Total
	N = 100	N = 99	N = 99	N = 298
Malaria	20	28.2	54.5	34.2
Diarrhoea	3	4	2	3
Headache	40	43.4	43.4	42.2
Bodyache	29	14.1	19.2	20.8
Excessive fatigue	9	12.1	5	8.7
Dizziness	6	9	-	5
Cold	2	2	9.1	4.3
Cough	13	3	9.1	8.3
Pains in the joints	15	10.1	1	8.7
Worm infestation	1	1	8	3.3
Typhoid fever	2	1	7	3.3
Stomach ache	9	5	1	5
Waiste/chest pain	13	3	-	5.3

Table 19 revealed that these women had suffered from different types of diseases in the recent past (within two weeks). Malaria and headache were still the most commonly occurring diseases. More teachers (54.5%) than farmers (20%) and petty traders (28.2%) suffered from malaria. Occurrence of diseases like excessive fatigue, dizziness/palpitation, stomach ache and pains in the joints were more among the farmers and petty traders. Here again, more teachers suffered from cold (9.1%), worm infestation (8.0%) and typhoid fever (7.0%). Waist/chest pain was still found more among the farmers.

Table 20: Treatment seeking behaviours of Farmers, Petty traders and Teachers (percentage)

A	Reaction to ill health	Farmers	Petty traders	Teachers	Total
		N = 98	N = 96	N = 96	N = 290
	Seek for help immediately	29.9	22.9	37.5	30
	Wait to see if it becomes serious	68.1	75.0	60.4	68
	Seek for help if symptom persist$	2	2.0	2.1	2
	Total	100	100	100	10

B	Reason for not seeking for help immediately	Farmers	Petty traders	Teachers	Total
		N = 70	N = 74	N = 68	N = 212
	Too busy	20	27	-	16
	Nobody to complain to	1.4	5.4	13.2	6.6
	No Money	47.1	45.9	29.4	41
	I believe I will be okay	27.1	21.6	57.4	35
	Don't like medicine	4.3	-	-	1.4
	Total	100	100	100	100

C	Where treatment is sought	Farmers N = 98	Petty traders N = 96	Teachers N = 98	Total N = 292
	Hospital	4.1	8.3	67.3	67.7
	Patent medicine dealer	57.1	68.8	14.3	46.8
	Pharmacist	2.0	-	4.1	2
	Self medication	33.6	20.9	7.1	25
	Prayer house	3.1	1.0	5.1	3.1
	Diviner	-	1.0	2.0	1
	Total	100	100	100	100

Table 20A revealed that majority of the women (68%) waited till ill health became serious before complaining. More farmers (68.1%) and petty traders (75%) reported that they wait till the illness was serious than the teachers (60.4%). Teachers (37.5%) sought for help immediately more than the farmers (29.9%) and petty traders (22.9%).

The major reason for not seeking for help immediately was due to lack of money (41%). This reason was more among the farmers (47.1%) and petty traders (45.9%) than the teachers (29.4%). However, more teachers (57.4%) did not seek for help because they believed they will be alright than the farmers (27.1%) and petty traders (21.6%). Majority of the teachers (67.7%) sought for treatment at the hospital while majority of farmers (57.1%) and petty traders (68.8%) sought for treatment from the patent medicine dealers.

Table 21: Practice and attitude of Farmers, Petty traders and Teachers towards medical check up (percentage)

A	Go for medical check up	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 99	N = 298
	Yes	3[a]	4[a]	29.3[b]	12
	No	97	96	70.7	88
	Total	100	100	100	100

B	Frequency of medical check up	Teachers	Total
		N = 28	N = 35
	Weekly	3.6	8.5
	Forth nightly	7.1	8.5
	Monthly	35.7	28.5
	Yearly	17.1	14.3
	Twice a year	21.4	28.5
	When I feel like	10.7	8.5
	As directed by doctor	3.6	2.8
	Total	100	100

C	Reason for not going for check up	Farmers	Petty traders	Teachers	Total
		N = 97	N = 66	N = 61	N = 224
	It is not necessary	13.4	33.3	20.2	18.5
	No money	67	40.9	50.8	60.2
	No time	5.2	3	11.5	5.9
	I am not sick	14.4	22.7	16.4	15
	Hospital is far	-	-	1.6	0.4
	Total	100	100	100	100

a - b values with different superscript in the same row are significantly different ($X^2 = 41.4$; $P<0.01$, $Z = 3.28$; $P<0.05$).

Table 21 showed that the number of the teachers (29.3%) that went for check up was higher ($Z = 3.28$; $P<0.05$) than that of the farmers (3%) and petty traders (4%). Generally as much as 88% of these women did not go for check up, the major reason being "lack of money" (60.2%).

Table 22: Reasons for going to hospital and how medical bill were paid by Farmers, Petty traders and Teachers (percentage)

A	Reason	Farmers	Petty traders	Teachers	Total
		N = 100	N = 98	N = 95	N = 294
	To see sick friends/relatives	32	25	9.5	22.4
	For ante/post natal	59	67.7	40	55.1
	For delivery	2	2.0	4.2	2.7
	For treatment	3	5.1	44.2	17
	Children sick	-	2.0	1.1	1
	Don't go at all	4	-	-	1.4
	To confirm causes	-	-	1.1	0.3
	Total	100	100	100	100
B	How bills were paid	Farmers	Petty traders	Teachers	Total
		N = 97	N = 96	N = 96	N = 289
	By husband	40.2	24	64.6	43
	By the women	11.3	46.9	28.1	28.7
	Husband/wife	46.4	28.1	7.3	27.3
	Don't use medicine	2.1	1.0	-	1
	Total	100	100	100	100

Table 22 showed that women went to the hospital mainly for ante natal and post natal care (55.1%) or to see patients (22.4%). Only among the teachers did a substantial percentage (44.2%) go to the hospital for disease treatment.

Medical bills of the teachers were paid mainly by their husbands (64.6%). About 40.2% of the farmers reported that their husbands paid their medical bills while 46.4% shared the bills with their husbands. The petty traders often paid their bills themselves (46.9%) or shared it with their husbands (28.1%).

Table 23: Nutrition/health knowledge scores of Farmers, Petty traders and Teachers (Percentage)

Scores	Farmers	Petty traders	Teachers	Total
	N = 100	N = 99	N = 98	N = 297
0 - 30 (Poor)	29[a]	24.2[a]	3.1[b]	18.8
40 - 60 (Fair)	62	68.7	35.7	55.5
70 - 100 (Good)	9[b]	7.1[b]	61.2[a]	25.6
Total	100	100	100	100

a - b values with different superscript in the same row are significantly different ($X^2 = 103$; $P<0.01$, $Z = 3.13$ [for poor score category], $Z = 4.5$ [for good score category]. $P<0.05$).

Table 23 showed signficant difference in the nutrition/health knowledge scores of farmers, petty traders and teachers ($X^2 = 103$; $P<0.01$). Majority of the teachers had high scores (61.2%) while majority of the farmers (62%) and petty traders (68.3%) had average score. It is also seen here that the number of the teachers that had poor scores were lower than that of the farmers and petty traders ($Z = 3.13$; $P<0.05$). Fewer farmers and petty traders ($Z = 4.5$; $P<0.05$) had good scores than the teachers.

4.5 PERCEPTIONS AND ATTITUDES TOWARDS STATE OF HEALTH, FAMILY PLANNING, EDUCATIONAL ATTAINMENT AND SOCIETAL/SELF CONCEPT OF FARMERS, PETTY TRADERS & TEACHERS

Table 24: Percieved health status of Farmers, Petty traders and Teachers (Percentage)

A	In good health state	Farmers	Petty traders	Teachers	Total
		N = 98	N = 95	N = 88	N = 281
	Yes	26.5	43.2	88.6	51.6
	No	73.5	56.8	11.3	48.4
	Total	100	100	100	100

B	Perceived indicators of good health	Farmers	Petty traders	Teachers	Total
		N = 25	N = 31	N = 79	N = 135
	Feel no pain	88	93.5	60.8	73.3
	Symptom not serious	4	3.2	32.9	20.7
	I believe I am well	-	-	2.5	1.5
	I monitor my health	8	3.2	3.8	4.4
	Total	100	100	100	100

Table 24 revealed that most of the teachers (88.6%) perceived themselves as healthy. More farmers (73.5%) than the petty traders (56.8%) felt otherwise.

Among the women who reported that they were in good health condition, the major reason for such answer was "feel no pain". Majority of the petty traders (93.5%) and farmers (80%) gave this reason. More teachers (32.9%) than petty traders (3.2%) and farmers (4%) perceived themselves as healthy when they do not have any "serious symptoms" of illness.

Table 25: Family planning practices of farmers, petty traders and teachers (Percentage)

A Mothers want more children	Farmers	Petty traders	Teachers	Total
	N = 100	N = 98	N = 93	N = 291
Yes	75	67.3	72	71.5
No	25	32.7	28	28.5
Total	100	100	100	100

B Do family planning?	Farmers	Petty traders	Teachers	Total
	N = 100	N = 99	N = 97	N = 296
Yes	2	2	57.7	20.3
No	98	97	42.2	97.7
Total	100	100	100	100

Reason for not planning	Farmers N = 98	Petty traders N = 97	Teachers N = 41	Total N = 236
Husband does not like it	7.2	14.4	24.4	13.1
Because of religion	2	-	27	4.7
Do not have enough information	90.8	84.5	34.1	78.4
Husband not around	-	-	9.8	1.7
Do not need it	-	-	7.3	1.3
Others	-	1	2.4	0.8
Total	100	100	100	100

Table 25 revealed that most of the women (71.5%) still wanted to have more children. Almost all the farmers and petty traders (98%) did not do family planning. On the other hand, more than half of the teachers (57.7%) did plan their family. Most farmers (90.8%) and petty traders (84.5%) claimed they did not plan their families because they "do not have enough information". Only 34.1% of the teachers said they did not have enough information about family planning. More teachers than other respondents gave reasons such as husband does not like it (24.4%), religion (22%), absence of husbands (9.8%) and "do not need it" (7.3%).

Table 26: Perception of Farmers, Petty traders and Teachers about their educational attainments

A	Adequacy of educational attainment	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 99	N = 298
		%	%	%	%
	Adequate	1[b]	-	48.5[a]	16.4
	Inadequate	99	99	51.5	83.6
	Total	100	100	100	100

B	Reason for perceived inadequacy	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 46	N = 244
		%	%	%	%
	Parents had no money	40.8	30.3	28.3	34
	Parents prefered to train the males	27.3	23.2	2.1	20.9
	Did not like schooling	4	7.1	-	4.5
	Husband did not permit it	1	12.1	15.3	8.1
	Got pregnant while schooling	1	5.1	4.3	3.2
	Was helping at home	-	1.0	2.1	0.8
	Hope to continue	-	-	6.5	1.2
	Got married while schooling	26.3	1.2	41.3	27
	Total	100	100	100	100

a - b values with different superscript in the same row are significantly different ($X^2 = 96.41$; $Z = 6.57$; $P<0.01$)

Chi square analyses of the data on Table 26 revealed that there were significant differences in the perception of these women about their educational attainment (X^2 = 96.41; P<0.01). All petty traders and 99% of farmers perceived their educational attainment as very inadequate.

The major reason for low educational attainment of respondents was lack of money by their parents (34%). This reason was given by more farmers (40.8%) when compared with 30.3% petty traders and 28.3% teachers. Another factor that exerted much influence on educational attainment of the farmers (27.3%) and petty traders (23.2%) was parents prefering to train their male children. The number of teachers who had this problem was quite low (2.1%). On the other hand, getting married while in school was a more common response among teachers (41.3%) than farmers (26.3%) and petty traders (21.2%). Some petty traders (12.1%) and teachers (15.2%) claimed that their husbands did not allow them to continue with their education. Up to 6.5% teachers still indicated that they will go back to school but none of the farmers and petty traders did so.

Table 27: Societal/self concept of Farmers, Petty traders and Teachers

A	Societal rating of women	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 95	N = 294
		%	%	%	%
	Equal to men	14	15.2	23.2	17.3
	Higher than men	4	3.0	1.1	2.7
	lower than men	82	81.8	75.7	80
	Total	100	100	100	100
B	Womens' self rating	Farmers	Petty traders	Teachers	Total
		N = 100	N = 99	N = 97	N = 296
		%	%	%	%
	Equal to men	19	32.3	64.9	38.5
	Lower than men	81	67.7	35.1	61.5
	Total	100	100	100	100

Up to 80 percent of the women reported that the society rated women lower than men. Also 61.5% of the women rated themselves low. However, it can be seen here (Table 27) that fewer teachers (35.1%) rated themselves low when compared with the farmers (81%) and the petty traders (67.7%).

4.6 CORRELATIONS BETWEEN HEALTH, NUTRITIONAL STATUS AND SOME SELECTED VARIABLES

Table 28: Correlations of health (BMI and disease count) and nutritional (energy and nutrient intake) status of Farmers, Petty Traders and Teachers with their age at marriage, level of education, income and workload

	Age at Marriage	Level of Education	Income	Workload
BMI	0.25	0.176	0.405*	-0.032
Disease count	0.29	0.045	-0.143	0.07
Energy	0.259	0.334*	0.463*	0.239
Protein	0.362*	0.149	0.541*	-0.346*
Calcium	0.358*	0.293	0.379*	-0.139
Iron	0.362*	0.172	0.410*	-0.186
Thiamin	0.106	0.140	0.371*	-0.033
Riboflavin	0.364*	0.239	0.325*	-0.049
Niacin	0.634*	0.330*	0.645*	0.291
Vitamin C	0.478*	0.348*	0.175	0.047

* represents significant correlation coefficient ($P<0.05$)

Table 28 showed that the BMI and disease count (health status) of these women had positive but non significant ($P<0.05$) correlation with age at marriage. On the other hand, only energy and thiamin intake of these women did not have significant positive correlation ($P<0.05$) with age at marriage.

Educational level correlated positively with their health and nutritional status. However, only energy, niacin and ascorbic acid intake were significant ($P<0.05$). The BMI both positively and significantly ($r = 0.405$; $P<0.05$) correlated with level of income. Disease count had a negative and non significant ($r = -0.143$; $P<0.05$) correlation with level of income. Nutrient intakes of these women positively and significantly correlated with their level of income except for ascorbic acid intake ($r = 0.175$; $P<0.05$). Workload correlated negatively (-0.032) with BMI and positively (0.07) with disease count. However, none of these were significant ($P<0.05$). Energy, niacin and ascorbic acid intake correlated positively and non significantly with workload while other nutrients had negative association with workload. Among the nutrients that correlated negatively with workload only protein intake was significant ($r = 0.346$; $P<0.05$).

Table 32: Correlation of income level of Farmers, Petty traders and Teachers with their age at marriage, level of education, workload and nutrient/health knowledge.

	Income
Age at marriage	0.719*
Level of education	0.837*
Workload	-0.078
N/H knowledge	0.601*

*represents significant correlation coeficients (P<0.05).

Table 32 revealed that income positively and significantly (P<0.05) correlated with age at marriage, education and nutrition/health knowledge of the women. However, for workload and income level, there was a negative and non significant association (r = -0.078; P>0.05).

CHAPTER FIVE

DISCUSSION

5.1 SOCIO-ECONOMIC CHARACTERISTICS AND THEIR EFFECT ON THE NUTRITIONAL AND HEALTH STATUS OF WOMEN

The socio-economic characteristics of women looked at in this paper include educational attainment and income level. These women, farmers and petty traders in particular, had low educational attainment. This could be attributed to sex discrimination/strong preference for male children as well as poverty. Thus, older male focus group discussants agreed that in a situation where funds are limited, the male child should preferentially be educated. Some of them even referred to female children as strangers who could leave to an unknown destination at my moment and therefore on whom limited resources should not be spent. This arises from the fact that in older generation Nigeria as in many other societies (Katona-Apte, 1988; Chaudhury, 1988) girls become members of other families upon marriage and do not bear the social responsibility for supporting their parents at old age. They are thus regarded as temporary and somewhat less valuable members of the family than boys.

The views of the younger male discussants also differed markedly from that of older male discussants. The concensus among this group is that if the

female child is more intelligent than the male, even when resources are limited, such female child should be preferentially educated. From the above statement, one can see that the trend of sex discrimination against the females in the area of education is fast changing. All discussants, however, agreed that where funds are available, both male and female children should be educated. This tends to show that the major constraint to increased education for women is finance. In other words, if resources are available, these parents would train both their male and female children. It therefore means that improving the economic status of parents and introduction of free education are some of the several ways of removing this gender bias in education in our rural communities.

From the above findings, it is therefore not surprising to see "poverty of parents" as another reason why most of the women used in this study were of low educational attainment. The study revealed that majority of the women as well as their husbands earned low income It means then that this problem called poverty is often transfered from parents to their children. Since majority of these women and their husbands are poor (earned low income), they too may not be able to train their children adequately thereby perpetuating the trend of poverty especially in this era of global economic crisis. Poverty is almost

exclusively the problem of the third world countries. According to Jacobson (1993), a decline in per-capita income caused by global economic recession, together with balance-of-payments problems, deteriorating terms of trade, and heavy debt burdens carried by Third World countries, left a growing number of households unable to meet their basic needs.

It seems that it is very difficult to separate education from the other aspect of socio-economic status. This is because the better educated women in this study earned more income monthly. One could then say that education improves women's earning potential. There was a significant and positive correlation ($r = 0.837$ $P<0.05$) between education and income of these women confirming that the more women were educated the more income they earned. Education affected the type of work they were engaged in. The more educated mothers were teachers whereas the lower educated ones were farmers and petty traders. As Berio (1984) had stated, low educational background equips women for employment only in the informal sector.

These two socio-economic variables, education and income were found to affect women's nutritional and health status. Educational level correlated positively with nutrient intake showing that as education increased, nutrient intake increased. This could be attributed to nutrition/health knowledge as well

as income of the women which might have influenced both the quantity and quality of food they consumed. The teachers had better nutrition/health knowledge, better income and also better nutritional status. Education also had a positive correlation with BMI showing that as education increased, BMI increased. However, this was not significant ($r = 0.176$ $P<0.05$) probably due to the sample size used. Surprisingly, disease count (number of diseases suffered within two weeks) positively correlated with education. It is possible that there were some elements of under-reporting by the farmers and petty traders in the study. This under-reporting could be attributed to poor health consciousness, shyness, and other factors. As Chatter jee and Lamber (1990) have observed, female morbidity is often under estimated because women are "shy" to reveal illness, or purposely downplay them to avoid seeking medical care.

There was a significant and positive correlation between income, and BMI and income and nutrient intake. On the other hand, there was a negative but non-significant correlation between income and disease count ($r = -0.143$; $P<0.05$). This implies that the more income these women earned, the higher their BMI; nutrient intake and the lower the number of diseases they suffered. The level of income might have affected nutrient intakes positively because the study revealed that the more income women earned, the more snacks they

consumed and the more varied their diets. Better food intake of course would result to better nutritional status.

Furthermore, the study revealed that majority (88%) of the women hardly went for check up. The major reason for such practice was due to lack of money. However, significantly ($Z = 3.8$; $P < 0.05$) more teachers went for check up than the farmers and petty traders. This suggests that income has an effect on treatment seeking behaviour of women. More farmers and petty traders than the teachers did not react immediately to ill health (did not seek for help immediately) and visited patent medicine dealer/chemist for cheaper treatment. It was also revealed that husbands of the teachers who earned higher income than those of the farmers and petty traders assisted in the payment of medical bills for their wives. All these accounted for the better health status of the teachers and also revealed the effect of income on the health seeking behaviour and health status of women. As Jacobson (1993) pointed out, the impact of poverty and social status on women's health is a universal issue.

Income significantly correlated with nutrient intake more than the other variables examined. This means that the income of these women exerted the strongest pressure on their nutrient intake. A lot of studies have indicated a relationship between income level and nutrient usage (Lamb, 1954; Harjue,

1981; Holmboe-Ottesen *et al.* 1988). Therefore, given the low income and multiple roles frequently fulfiled by women in settings of poverty, they are more likely to have trouble meeting their food needs and to be at risk for general undernutrition (Merchant and Kurz, 1993).

5.2 WOMEN'S WORK AND ITS EFFECT ON THEIR NUTRITION AND HEALTH STATUS

The education of women in this study determined the type of work they performed. The more educated women were teachers while the less educated were farmers and petty traders. According to Berio (1984), low educational background equips women for employment only in the informal sector where workload and stress among other things are usually high. Generally, these women worked long hours (6-11.2 hrs). This supports the finding by Tobisson (1980) that the total time women allocate to work on a yearly basis seems to average between 8 and 10 hours a day. However the number of hours spent by farmers on work in this study was lower than that of teachers and petty traders. This could be because the research was conducted during the preplanting season when these farmers had less farmwork. This collaborates the view that women have heavy workload and that it varies with season.

According to Holmboe-Ottesen *et al.* (1988), women's workload is especially high in peak agricultural season for women who participate in the fields.

A cross examination of the average workload of these three groups of women showed that all of them had higher workload when the activity pattern was monitored by the researcher than when the informaton on workload was provided by the women themselves. This shows women's underestimation of their workload which was mainly due to their elimination of house work from the total workload per day. According to McGuire and Popkin (1988), economically, women play such roles as provision of food, fuel, water, childcare and healthcare. However, most of this labour which is worth 25 - 40% of the world gross national product (GNP) is not counted in the standard estimation of production such as GNP. So the tendency to underestimate total workload of women is not only by economists but by the women themselves.

The type of work women do as well as number of hours spent on it per day do affect their food habit and also nutritional and health status. There was negative correlation between nutrient intake (except energy) and workload. This shows that as workload increased, nutrient intake decreased while energy intake increased. The decrease in protein intake was significantly affected by workload. It could be that high workload of these women resulted to their

eating easily prepared unbalanced meals eg yam/cocoyam and oil, abacha, akpu/garri and poorly prepared soup etc. These unbalanced meals, contain more starch than protein. As Holmboe-Ottesen (1988) have stated, that a heavy workload for women may lead to a poorer diet not only for their children and other members of the families but also for women themselves.

Another way by which heavy workload could affect women is through ill health due to over work or over use of the body tissue. When women put in several hours in their place of work, they still come home to face some domestic responsibilities. This means that so many of them work round the clock-thereby over labouring their body. The effect of long working hours on the health status of these women was shown by the type of diseases women of different occupational groups normally suffered (Table 18). The numbers of farmers and petty traders that suffered from such ill health like headache, body ache, excessive fatigue, pains in the joints (this could be arthritis) and waist/chest pain were higher than that of the teachers. All the above mentioned ill health could be said to be the resultant effect of over work and lack of rest. The teachers suffered less from these sicknesses probably because they had free periods for relaxation especially in the afternoon due to the nature of their job. On the other hand, farmers and petty traders come home late in the evening yet to face domestic chores.

This study proved that high workload affects the health status of women negatively. The negative correlation between BMI and workload implied that as workload increased, BMI decreased. It then means that these women's workload was not comensurable with their food intake which then result to loss of weight. Disease count correlated positively with workload showing that as workload increased, number of diseases women suffered from increased. However, none of these correlations was significant probably due to sample size used. The above finding is in accordance with the existing literature reports. According to Holmboe-Ottesen *et al* (1988) heavy workload can affect women's nutritional and health status indirectly through increased energy use in heavy work that is not matched by a corresponding increase in food consumption or "wear and tear" effect causing body pains, arthritis or premature deliveries.

5.3 CULTURAL PRACTICES AFFECTING HEALTH AND NUTRITIONAL STATUS OF WOMEN

The cultural practices discussed in this section include age at marriage, food taboos, food distribution practices and societal rating.

The mean ages at marriage for farmers and petty traders were 16.5 and 17.1 years respectively compared to teachers' (24 years) (Table 5B). The fact that these

women live in the same environment suggest that education may delay age at marriage of women. In fact, results from several research have made it clear that women with education are more likely to marry later (Harrison, 1980; Montieth *et al*. 1987). The implication of late marriage is a later, safer start to childbearing and lower lifetime fertility. This suggests that age at marriage could have serious implication on family planning or the total number of children women eventually bear. According to Population Reports (1988), women who marry between 15 and 19 years bear six or seven children on the average - three or more times as many as women who marry later. However, in this study, farmers, petty traders and teachers had equal number of living children and majority were desiring to bear more children. This could be as a result of the fact that in these communities, bearing many children is linked with high social prestige. It then means that age is the only determinining factor to the number of children women in these communities would bear. Since teachers married later, they would most likely end up with lower number of children than the other groups because of lower lifetime fertility.

In terms of parity, farmers and petty traders had more pregnancies than teachers. Cases of child mortality among farmers and petty traders were significantly ($P<0.05$) higher than among the teacher. This may not only be due

to the better nutritional status and better health and nutritional knowledge of the teachers but also due to their better adorption of modern family planning techniques. According to Waterlow (1992) child spacing or family planning has much influence on mortality. The health implication of repeated pregnancies and childbirth (due to non use of modern family planning technique) on women can never be over emphasised. However, Henry and Piotrow (1979) found in Sri lanka that raised average age at marriage and increased use of family planning reduced the number of risky pregnancies in adolescents and in older women with many children.

From this study, it was proved that average age at marriage do affect nutritional and health status of women as it significantly correlated positively with protein, calcium, iron, riboflavin, niacin and ascorbic acid intake. There was also a positive though non-significant correlation between age at marriage and BMI. Surprisingly, age at marriage has a positive but non-significant correlation with disease count (number of diseases suffered within two weeks). This means that as age at marriage increased, disease count increased as well. This again can be explained by the under reporting by farmers and traders as discussed earlier.

Food taboos did not seem to have an important impact on the nutrition and health status of these women. This is because very few of them could even mention some of the culturally forbidden foods. The greater majority (91.6%) were not aware of the existence of food taboos in the community. This is because most of these forbidden foods like snake, monkey, kite, owl etc are very rare. Even the men who eat them hardly come across them. Others that are not so rare like snails and grass-cutters (forbidden during pregnancy) are too expensive. During the focus group discussion, a young woman from Enugu-Ezike revealed that they are being encouraged at health centres to eat snail but they cannot afford it . This therefore means that it is the purchasing power of these women rather than food taboos which affect intake of these foods. The above finding agrees with some existing literature on food taboos. According to Hamilton *et al* (1984) food taboos characteristically put on protein foods which are directed towards pregnant and lactating women are common throughout the world. However, in a few studies there is evidence that food taboos are more often breached than followed (Leslie *et al.*, 1988).

Up to 80 percent of the women both educated and uneducated agree to the fact that women are rated lower than men in the society. Infact, a young

female focus group discussant from Enugu-Ezike compared women's societal rating to that of goats. In a similar study by Obbo (1980) among the women of Uganda, these women emphatically said "we are not primarily interested in theories of equality, superiority or even inferiority. We are interested in being treated with justice and with respect due to human beings". This means that cultural degradation of women is still a common feature in many African communities.

Though majority of these women agreed that the society rated them low, more teachers rated themselves higher than farmers and petty traders. It could be that education as well as level of exposure of women has an impact on women's self perception or image. This may be true because the petty traders who may be considered to be more exposed than the farmers had better self image than the farmers who hardly moved outside their immediate environment. From this study, it was found that poor societal perception about women could affect their nutrition and health status indirectly through "under investment in female" especially in the area of education. This is true since education significantly correlated positively with income which is a major determinant of health and nutritional status.

Based on focus group discussion, the sacrificial roles of mothers in family food distribution is a societal expectation. However, the survey data revealed that the educated mothers met less of such societal expectations than the low educated ones. More farmers and petty traders dished out their husbands' portion first and also gave best portion to husbands more than the teachers. Also when food was small, the number of farmers and petty traders who would sacrifice it to their husbands were statistically higher ($Z = 2.4$; $P<0.05$) than that of the teachers. The number of farmers and petty traders who did not eat with their husbands were statistically ($Z = 2.7$; $P<0.05$) higher than that of the teachers. Among this group that did not eat with their husbands their husbands consumed greater quantity of the family food. Here we see also that the teachers' portion was more than that of the farmers and petty traders. The cultural barriers against women which leads to discriminatioin against them might have had stronger hold on farmers and petty trader probably because the teachers had better nutritional health knowledge. This means that teachers know their food needs more than farmers and petty traders. It could also be as a result of several years of education and socialization which might have increased the self esteem of the teachers. Increased self esteem would mean that these women know their worth as individual family members and therefore

do not work with unfavourable cultural norms. It is therefore not surprising to see that teachers were of better health and nutritional status than the other groups

The above findings agree with the focus group discussioin finding. The view of majority (95%) of the male discussants was that a good woman must make sure she serves her husband first and foremost and also give the man the best portion of the family meal because he is the head of the family. One could then say that it is the cultural practice obtainable in these villages which has forcefully subjected these women into discriminating against themselves thereby putting their own food need last. Several authors have also discussed women's sacrificial roles in household food distribution. According to Maletnlema *et al.* (1974) in Tanzania, food is made by women for men and often the better share in quantity and quality is given to men. In Southern India, women feed their husbands first, then the children and only then do they think of themselves (Katona-Apte, 1975). In another study in Sri lanka,Wandel and Homboe-Ottesen (1988) reported that the poor women took pride in being able to provide their husband and children with satisfying and adquate meals every day even if they had to work extra hours to reduce their own intake. All these reports go to confirm that the tendency for women to put their own food need

last in the family is a universal phenomenon and is the societal expectation. However, this study has shown that education has a way of modifying such sacrificial roles of women.

5.4 CONCLUSION

Women occupy a vital position in the development of any given economy and also play a major role in the family in terms of child-up-bringing, house-keeping and economic support among other things. Due to global economic recession, women's unceasing effort to meet up with their expected role inspite of all odds do give rise to serious health and nutritional problems. However, prior to now several researchers have investigated women's work as it affects the child and not the mother. Other studies have attributed women's poor nutritioin and health status to such factors like food taboos and sex discrimination. On the other hand, this study stands to prove that the major determinant of women's nutritional and health status is education since it most significantly affected income. Other factors might as well come into play; affecting the nutritional and health status of women either directly or indirectly as shown in the flow chart below.

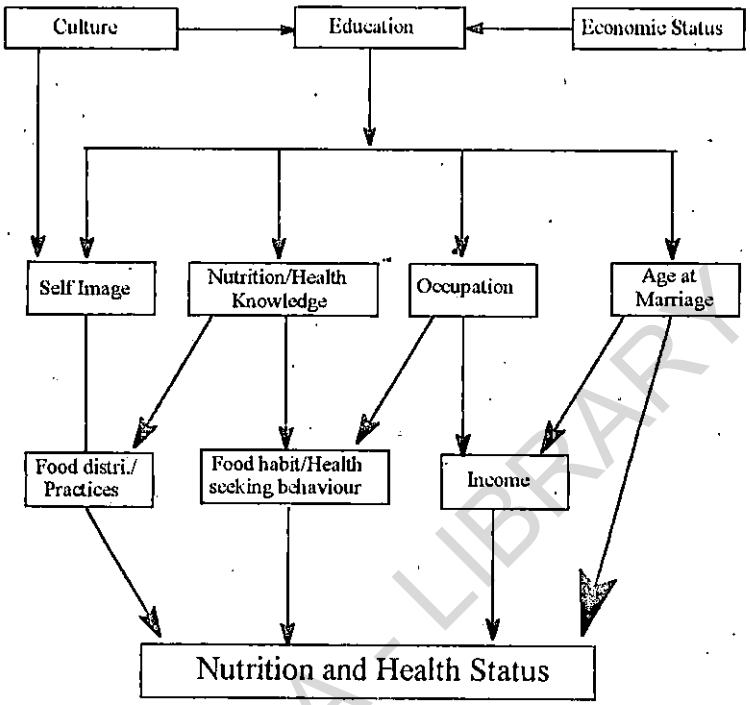

Fig. 1: Flow chart showing factors that affect women's nutrtional and health status

Fig 1 shows that the two factors which determine whether a woman would be educated or not is the parents' economic status as well as their cultural standing (whether they consider females unimportant). It therefore becomes very clear that women's nutritional and health status cannot be significantly improved without actions to uplift parents' economic conditions as well as the removal of cultural barriers that discriminate against women.

5.4 RECOMMENDATION

1. Female education should be given highest priority. This could be facilitated by improving the economic condition of rural dwellers, introduction of free education by the government and also the breaking of cultural barriers which discriminate against female education. Adult education for women should also be organised.
2. Women should be taught how to take up more income generating activities so as to increase their income as well as the amount spent on family food and health care services.
3. The introduction of labour saving devices into homes is of extreme importance if the increased effort of women towards economic empowerment and self fulfilment would not result to "wear and tear".

5.5 CONTRIBUTION TO KNOWLEDGE

1. Most of the studies on effect of socio-economic and cultural factors on women's health and nutritional status are foreign to our society. This study is one of the very few which have localized such studies.
2. This study has shown that education and income are very vital in upliftment of nutritional and health status of women.

3. It has also been revealed from this study that the effect of food taboos and sex discrimination/strong preference for the male on the nutritional and health status of women have rather been over emphasised. If resources are readily available, the influence of these factors would be greatly suppressed.

5.6 NEED FOR FURTHER RESEARCH

1. There is the need for more elaborate study which will incorporate women of every occupational and age group.
2. The study on how socio-economic and cultural factors affect women's health and nutritional status should also be duplicated in other cultures.
3. Since this study was carried out among rural women, there is also the need to find out how such factors affect the nutritional and health status of urban women so as to draw comparison

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APPENDIX I

Triger questions used for the focus group discussion

1. What is the position of a woman in your community?
2. How do you rate yourself as a woman?
3. In what ways do you think that such position assigned to women in your community have influenced you?
4. What effort are you making to improve the status of women in your community?
5. What problems do you encounter?
6. If a woman does not have a male child what is her fate in the family?
7. If you have a male and a female child ..., which of them would you send to school in a situation where resources are limited?
8. If your daughter is schooling and a spouse comes, what do you do?
9. If your daughter is sick, how do you take care of her?
10. What are the gender roles in your community?
11. What are the cultural prohibitions against women in your community?
12. How many people do comply to such prohibitions.
13. How is food distributed in the family in your community eg who gets the best portion, when does the mother eat etc.

14. What are the common diseases among women in your community?

15. What do you think are the causes of these specific women diseases?

16. What effort do women make to get themselves treated whenever they are sick?

17. What are the problems they could encounter that could hinder them from taking proper care of themselves health wise?

APPENDIX II

CALCULATION OF INDIVIDUAL INTAKE OF EACH INGREDIENT IN A RECIPE

1. Code No _____ 2. Age _____ 3. Sex _____ Wt. _____

Meal [B] [L] [S] | Sn | Day [M] [T] [W] [Th] [F] [S] [S]

Ingredient/Recipe	(a) Amt in recipe (g)	(b) Total cooked weight of recipe (g)	(c) Amt. of recipe consumed (g)	(d) conversion factor (c/b)	(e) Amt. of ingredient consumed (g) (c/bxa)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

APPENDIX III

FOOD AND AGRICULTURE ORGANISATION WORLD HEALTH ORGANIZATION RECOMMENDED INTAKES

		Energy		Protein				Vitamin A					
Subject	Age (yrs)	Kcal	MJ	g/kg	g/day	Calcium (mg)	Iron (mg)	(i.u)	(µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Ascorbic acid (mg)
Children	0.5-11	880 (98/kg)	3.7	1.58	14	550	14	1167	350	0.4	0.6	6.6	20
	1-3	1250	5.2	1.18	14.5	450	8.5	1333	400	0.5	0.8	8.6	20
	4-6	1550	6.5	1.05	17.5	450	9	1333	400	0.7	1.1	11.2	20
	7-9	1950	8.1	1.0	27.0	450	16.0	1333	400	0.8	1.2	13.9	20
Boys	10-12	2200	9.2	1.0	44.0	650	16.0	1667	500	1.0	1.4	16.5	20
	13-15	2525	10.5	0.98	47.0	650	24.0	2000	600	1.2	1.7	20.4	30
	16-19	2850	11.9	0.87	56.0	550	15.0	2000	600	1.4	2.0	23.8	30
Adults		2800	11.7	0.75	49.0	450	15.0	2000	600	1.3	1.8	21.1	30
Girls	10-12	1950	8.1	1.0	36.0	650	16.0	1667	500	1.0	1.4	17.2	20
	13-15	2125	8.9	0.93	47.0	650	27.0	1667	500	1.0	1.4	17.2	30
	16-19	2150	9.0	0.87	42.0	550	29.0	1667	500	1.0	1.3	15.8	30
Adults		2200	9.2	0.75	45.0	450	29.0	1667	500	0.9	1.3	15.8	30
Pregnancy		+285	1.2		+6.0	1100	-	2000	600	1.0	1.37	16.4	50
Lactation		+500	2.1		+17.5 (first 6 months) +13.0 (after 6 months)	1100	17.0	2833	850	1.08	1.49	17.82	50

Source:

Calcium requirements (FAO/WHO Report No. 230. 1962). Thiamin, riboflavin and niacin requirements (WHO Report No. 362, 1967). Ascorbic acid requirements (WHO Report No. 452, 1970). Energy and protein requirements (from FAO/WHO/UNU Report No 724 1985) vitamin A and Iron requirements (from FAO Report No 23, 1988).

UNIVERSITY OF NIGERIA, NSUKKA

QUESTIONNAIRE

INSTRUCTION: This quenstionnaire is required for a research work being carried out by a post graduate student of the above institution on the effect of socio-economic and cultural factors on women's nutrition and health status.

Fill the blank space or tick (✓) where appropriate.

1. Case no [ ][ ][ ] 2. Date [ ][ ][ ]

GENERAL CHARACTERISTICS/ECONOMIC PRIFILE

3. Age (Please state exact age in years) [/]

4. Marital Status: (a) married [ ] (b) Single [ ] (c) divorced [ ]

(d) Widow [ ] (e) Seperated [ ]

5. Ethnic group: (a) Ibo [ ] (b) Hausa [ ] (c) Yoruba [ ]

(d) Others (Please specify) _____

_____

6. Religion: (a) Christianity [ ] (b) Islam [ ]

(c) Traditional religion [ ] (d) Others (Please specify)

_____

7. Educational qualification(s): (a) no formal education [ ]

(b) did not complete primary education [ ]

(c) First school leaving certificate [ ]

(d) did not complete secondary education [ ]

(e) West African school certificate (WASC/GCE/SSC) [ ]

(f) TC II/Diploma [ ]

(g) HND, NCE/B.Sc./B.A [ ] (h) M.Sc./Ph.D [ ]

(i) Others (please specify) _____

8. Do you think you got sufficient education?

Yes [ ] No [ ]

9. If no, Why? (b) My parents didn't have money to train me [ ]

(b) My parents prefered to train their male children [ ]

(c) I didn't want to go to school [ ]

(d) I got married [ ] (e) I got pregnant [ ]

(f) My husband didn't allow me to continue [ ]

(g) Others (please specify) _____

10. Occupation: Tick ( ) against your occupation and also write the number of hours you spend on it per day:

Type of occupation	Number of Hours
Teaching [ ]	.....
Farming [ ]	.....
Petty Trading [ ]	.....

11. What is your income per month? (Please state exactly) .....

12. What are the things you do to supplement your income and how much time do you spend on them per day?

Extra Sources of Income	Number of Hours
Farming [ ]	.....
Evening lession [ ]	.....
Poultary keeping [ ]	.....
Selling cooked food/snacks [ ]	.....
Selling Stored food items [ ]	.....
Selling Clothing materials [ ]	.....
Making soap/pomade etc. [ ]	.....
Hair plainting [ ]	.....
Nothing [ ]	.....
Others (please specify)	.....

13. How much do you realise from such extra activities per month/ (please list the activities you perform and the income as well).

Activity	Income per month
.....	.....
.....	.....
.....	.....

14. What do you do with the money you earn?

(a) put it in the joint account [ ]

(b) put it in my personal account [ ] (c) keep it myself [ ]

(d) give it to my husband [ ] (e) give it to my parents [ ]

(f) spend it on myself [ ] (g) spend it on the family [ ]

(h) Others (please specify) _____

15. How much do you contribute for family feeding each month? (please give the correct estimate)

₦_____

16. What is your husband's income per month? (please state exactly)

₦ _____

17. How much does your husband contribute for food each month (please give the correct estimate) ₦ _____

18. Who purchases family food items?

(a) Myself [ ] (b) My husband [ ]

(c) Other grown ups in the family [ ]

(d) a and c above [ ] (e) a and b only [ ]

(f) b and c only [ ] (g) all of the above [ ]

(h) Others (please specify) _____

19. Family size: Including yourself and your husband how many people are living and feeding in your household?

(a) Total [ ] (b) Pre-school age (10 - 15 yrs) [ ]

(c) Primary school age (6 - 12 yrs) [ ]

(d) Adolescents (13 - 19 yrs) [ ] (e) Adults (20 - 59 yrs) [ ]

(f) Aged (60 yrs and above) [ ]

20. How many children do you have (please state exactly . .....

21. How many are still living with you? .....

22. How many of your children are below the age of six?

.....

MEAL PATTERN/DIET RECALL

23. How many times do you eat each day ... .

24. Do you take snacks? Yes [ ] No [ ]

25. If yes, what type of snacks do you take? (please list the snacks you normally take) .....

1. ..... 4. .....
2. ..... 5. .....
3. ..... 5. .....

26. Why do you take these snacks? (a) to replace meal [ ]

(b) to make up my meal [ ] (c) I just like taking them [ ]

(d) Others (please specify) .....

27. Do you miss any meal/snacks Yes [[No [ ]

28. If yes which of these do you normally miss

(a) breakfast [ ] (b) Lunch [ ] (c) Dinner [ ]

(d) Snacks [ ]

29. If you miss meal/snacks, why?

	Breakfast	Lunch	Dinner	Snacks
to save money				
I am very busy				
to loose weight				
I am out for work				
food not enough				
I am too tired				
I have formed the habit				
When I am upset				
Others (please specify)				

30. What did you eat yesterday? (please describe in details)

.....

	Dish	Ingredients
Breakfast		
Lunch		
Dinner		
Morning snacks		
Afternoon snacks		
Night snacks		

HEALTH STATUS/HEALTH SEEKING BEHAVIOUR

31. How many pregnancies have you had in all .....

.....

32. How many of your children died before the age of six .....

.....

33. What is your physiological state now (a) pregnant [ ]

(b) Lactating [ ] (c) None of the above [ ]

34. Do you still hope to have more children? Yes [ ] No [ ]

35. Do you use any family planning technique? Yes [ ] No [ ]

36. If no to question 35 why?

(a) My husband doesn't like it [ ]

(b) My religion does not allow it [ ]

(c) I don't have enough information about family planning [ ]

(d) I don't know about family planning at all [ ]

(e) My culture does not allow it [ ]

(f) Others (please specify) .....

37. What are the illness/diseases or symtomes you normally suffer from?

(a) high blood pressure [ ] (b) Diabetes [ ]

(c) Hypertention [ ] (d) Malaria [ ]

(e) Diarrhoea [ ] (f) Headache [ ]

(g) Migrane [ ] (h) Bodyache [ ]

(i) Excessive fatigue [ ] (j) Anaemia [ ]

(k) Cold [ ] (l) Cough [ ]

(m) Arthritis [ ] (n) Sunburn [ ]

(o) Worm infestation [ ] (p) Thyfoid fever [ ]

(q) others (please specify) .....

38. How many of the above ill health have you suffered from within the past two weeks (please list them).

1. ..... 4. .....

2. ..... 5. .....

3. ..... 6. .....

39. When you are sick what effort do you make to get yourself treated?

(a) go to the hospital [ ] (b) go to the herbalist [ ]

(c) see a patent medicine dealer [ ] (d) see a pharmacist [ ]

(e) try to bear the sickness [ ] (f) use self medication [ ]

(g) see a diviner [ ] (h) consult friends/mother-in-law/parents [ ]

(i) Others (please specify) .....

40. At what point of the illness do you normally complain?

(a) As soon as it starts [ ]

(b) When I cannot bear the pain [ ]

(c) Others (please specify) .....

41. If you do not complain as soon as the sickness starts, why?

(a) I am too busy with so many things [ ]

(b) I know there is nobody to complain to (husband not around)[ ]

(c) I know there is no money for such extra spending [ ]

(d) I believe I will be okay after some time [ ]

(e) Others (please specify) .....

42. When you are sick, who pays for your treatment?

(a) my husband [ ] (b) myself [ ]

(c) my parents [ ] (d) my father/brother in-law [ ]

(e) Others (please specify) .....

43. Do you go for medical check up? Yes [ ] No [ ]

44. If yes how often? (a) Weekly (b) Forthnightly [ ]

(c) Monthly [ ] (d) Yearly [ ]

(e) Twice a year [ ] (f) Others (please specify) .....

.....

45. If no why? (a) It is not necessary [ ]

(b) I do not have money for that [ ]

(c) I do not have time [ ] (d) I know I would'nt be sick [ ]

(e) I live very far away from the hospital [ ]

(f) Others (please specify) .....

46. What do you usually go to the hospital for

(a) to see the sick friends [ ]

(b) for ante/post-natal [ ] (c) for delivery [ ]

(d) for treatment of diseases [ ]

(e) Others (please specify) .....

47. Do you consider yourself healthy? Yes [ ] No [ ]

48. If yes, why do you think so? (a) I don't feel any pain or abnormal at all [ ] (b) the symptoms I feel do not prevent me from doing anything [ ] (c) Others (please specify) .....

CULTURAL CHARACTERISTICS

49. How are women rated in your community?

(a) as important as men [ ] (b) more important than men [ ]

(c) of lesser important than men [ ] (d) Others (please specify)

.....

50. How do you rate yourself as a women

(a) high [ ] (b) low [ ] (c) Very low [ ]

51. At what age did you get married? (please state exact age) .....

52. At what age did you have your first baby? (please state exact age)

.....

53. What are the foods that women are not allowed to eat (please list them)

1 ..... 4 .....

2 ..... 5 .....

3 ..... 6 .....

54. What are the foods that are generally good for the women (please list them)

1. ..... 5 ..... 9 .....

2. ..... 6 ..... 10 .....

3. ..... 7 ..... 11 .....

4. ..... 8 ..... 12 .....

55. If there is shortage of food in the family, what do you do?

(a) I share the available food equally [ ]

(b) I sacrifice my own food to children [ ]

(c) I sacrifice my own food to husband [ ]

(d) Others (please specify) .....

56. When do you dish out your own food

(a) along with my husband's own [ ]

(b) after my husband's own [ ]

(c) after my husband's and children's own [ ]

(d) after every other person's portion [ ]

(e) Others (please specify) .....

57. Who takes the best portion of food in the family

(a) my husband [ ] (b) my children [ ]

(c) my husband and children [ ] (d) myself [ ]

(e) myself and my husband [ ]

(f) Others (please specify) .....

58. Can women eat with their husbands all the time? Yes [ ] No [ ]

59. If no, when are they not surpose to eat with their husbands

(a) when they are pregnant [ ]

(b) when they are breastfeeding [ ]

(c) If the man is not around [ ]

(d) when the wmen are menstrating [ ]

(e) If there are small children to be looked after [ ]

(f) Others (please specify) .....

60. Do you eat with your husband? Yes [ ] No [ ]

HEALTH/NUTRITION KNOWLEDGE QUESTIONS

Mark t(true) or f (false) behind each option as you consider appropriate.

61. A pregnant woman needs to.(a) eat less to control weight [ ]

(b) Eat more nutrient than most adult women [ ]

(c) Abstain from culturaly forbidden foods [ ]

(d) Avoid starchy foods [ ]

62. Comparing young boys and girls, we could say that:-

(a) Young boys require greater quantity & quality of food than young girls [ ]

(b) Boys should have greater access to health care [ ]

(c) Girls should work harder than boys [ ]

(d) Boys should be breasfed longer than girls [ ]

(e) Boys should have greater access to education [ ]

63. A female child should be of good nutritional status because

(a) nutritional status during childhood determines nutritional status later in life [ ]

(b) this will reduce reproductive complications later in life [ ]

(c) She needs to get herself equiped for the double role she will play in her family [ ]

64. For a woman to be healthy, she needs to

(a) eat well [ ] (b) take proper care of her environment [ ]

(c) avoid over work [ ] (d) treat illness at its earliest stage [ ]

65. There is no difference between the nutritional requirement of an adolescent and adult pregnant woman true [ ] false [ ]

66. There is no difference between the nutritional requirement of a man and a pregnant woman of the same category true [ ] false [ ]

67. Low birthweight is caused by poor maternal nutritional status, true [ ] false [ ]

68. Family planning preserves the health of women

true [ ] False [ ]

69. Adolescent mother has higher risk of developing pregnancy complications

true [ ] false [ ]

70. Women should bear as many children as possible

true [ ] False [ ]

ANTHROPOMETRIC MEASUREMENT

Age Yrs	Weight Kg	Height m	Arm Circ. cm	Waist Circ. cm	Hip Circ. cm