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Awareness and Nutrition for HIV/AIDS Patients

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ABSTRACT

The situation of HIV/AIDS is alarming in India. Nearly 4 to 5 million people are affected and suffering from HIV/AIDS. The present study was designed to educate the common people about the consequences of HIV/AIDS. In all total 100 subjects consisting of male and female were selected who were willing to cooperate for the study. Awareness was imparted to the 100 subjects of different age group who were at a risk of HIV/AIDS. Different methodology like street play, Puppet show, Discussion, Brainstorm and Slide show were used to bring awareness amongst these subjects. The remaining 84 subjects were the actual patients comprising of 65 males and 19 females who were in the first phase of the HIV/AIDS. The information on these subjects was collected in the form of pre-designed questionnaire. The information on anthropometric measurements, biochemical & medicinal and nutritional status of the patients were recorded. The data was used for the counseling the patients regarding medication and diet importance. These subjects were informed about the necessity of proper balanced diet during their medical treatment. The importance of diet was explained for the fight against the infection as well as nutrition during the asymptotic period of diseases.

The results of this study reveal that the patient showed positive response towards diet practices which was indicated by the improvement on their anthropometric measurement, BMI, hemoglobin level and total protein level.

KEYWORDS : – HIV/AIDS, Awareness, Nutrition

INTRODUCTION

HIV is rapidly spreading to rural areas through migrant workers and truck drivers. Survey has shown that 5-10% of few truck drivers in the country are infected with HIV[1]. This causative agent for the AIDS is HIV which is highly replicating retroviruses that enforce its genetic information into infected cell via enzyme Reverse Transcriptase. This enzyme allows RNA to act as a template for DNA transcription and incorporation into the host genome.

Once an individual is HIV positive i.e. the viruses has been detected in his / her blood the diseases progress in four phases.

Phase I Acute HIV Syndrome, which is characterized by fever, nausea vomiting and diarrhea.

Phase II Asymptomic stage which is a phase of clinical latency

Phase III: Persistent generalized lymphadenopathy which is characterized by enlargement of lymph nodes.

Phase IV: Clinical diseases which are subdivided as constitutional diseases, neurologic diseases, secondary opportunistic diseases, neoplasm most of which are AIDS defining illness.

The incubation period of viruses is between 6 months to 8years. Persons with genital ulcers, malnutrition, smoking and alcohol habits may develop AIDS more rapidly on being exposed to HIV infection than otherwise healthy individuals.

Twenty years into the **H**uman **I**mmunodeficiency **V**irus/**A**cquired **I**mmuno **D**eficiency **S**yndrome (HIV/AIDS) pandemic, social and behavioral research on HIV/AIDS remains limited[2]. Data on sexual behavior and AIDS-related knowledge and attitudes are sparse and difficult to compare. Information about risk-related behaviors, their determinants and the context within which they occur has direct relevance to the effective targeting of AIDS prevention efforts.

As AIDS is no longer only public health issue but has become a seriously socio-economic and developmental concern, there is an immediate need to act with an utmost sense of urgency and seriousness[3]. When a disease is a multifaceted malady which impacts and affects a society, remedies have to be multi pronged. More so, when the disease defies treatment, cure has to precede and be synchronous with efforts to identify treatment. Such can be the process to combat and control the menace of HIV/AIDS. Media is one of the instrumentalities which facilitates and gives a directional thrust to the efforts to cure the disease if not to treat it. If medicine can treat HIV/AIDS, media is capable to prevent it with an ultimate goal to cure it through its capabilities to impart education through entertainment. This indicates the enough scope to undertake the research and detailed survey on HIV/AIDS patient in India[4]. It is evidenced from the fact that from one reported HIV case in 1986, the number of HIV positive people in India has already crossed the five million mark.

Review of Literature

HIV/AIDS is the worst epidemic humanity has ever faced. It has spread further faster and with more catastrophic long 'term effects than any other disease. Its impact has become a devastating obstacle to development[5]. Broadcast media have tremendous reach and influence with young people, who are the key to any successful fight against HIV/AIDS. The fight to halt HIV/AIDS through awareness, prevention and education is of prime importance. An Article entitled 'An innovative approach to reducing HIV/AIDS prevalence through targeted mass media communications in Mumbai, India' focuses on the need for dissemination of related information and realities pertaining to the epidemic so that the ignorance is replaced by awareness and then creating multiplier effects of awareness engulfing the wider cross sections of the society. India is poised on the precipice of devastating HIV/AIDS epidemic[6]. Twenty years after the first case of AIDS was reported in India, it is now home to second largest number of HIV infected people in the world with around 5.1 million people as in 2003 being infected by the deadly disease. Despite ardent efforts to proliferate awareness of HIV/AIDS being made by governmental and non-governmental agencies, the misconceptions relating to HIV/AIDS continue to outpace the efforts to educate people regarding the disease. Thus, with the passage of time role of media has become increasingly significant.

HIV infects human cells and uses the energy and nutrients provided by those cells to grow and reproduced by killing or damaging cells of the body's immune system[7]. HIV progressively destroys the body's ability to fight infections and certain cancers[8,9]. People diagnosed with AIDS may get life threatening diseases called opportunistic infections, which are caused by microbes such as viruses or bacteria that do not make healthy people sick. The level of awareness of AIDS is high. At least 90% of the population has heard of AIDS. However, awareness remains low in India. In most countries, awareness of AIDS is higher among men than women. This gender gap reaches 34% in the Niger and 28% in Chad. Gender differences in AIDS awareness in Bangladesh (19%), Benin (13%), Eritrea (17%), Mali (19%), Mozambique (1%) and Nigeria (15%); Awareness grows with the incidence of HIV/AIDS. Urban residents are more aware of AIDS than rural populations. In 31 countries for which data are available, at least 95% of the

educated female respondents knew about AIDS[20]; In Indonesia, 88% of the educated groups are aware of AIDS, compared with only 14% of those with no education. In Brazil, Malawi, Uganda and Zambia, fully 98% of those with no education say they know about AIDS. The literature reveals that citizen from many countries not yet fully aware of the ill consequences of the HIV/AIDS. Also there is a lack of knowledge about the nutrition and its benefits for the HIV patients. .

Methodology

The present publication, rely primarily on a unique source of information to document AIDS awareness and AIDS-related behaviors. The Surveys contain a wealth of data on HIV/AIDS which until now was not disseminated to a wider audience. The study provides a picture of HIV and AIDS-related awareness and behavior across the countries and population groups, age and gender. It suggests nutritional status and need for nutrients for HIV/AIDS patients. The present study was undertaken for assessing the nutritional status of HIV positive patients and to determine whether nutritional education and nutrition intervention in adult HIV positive patients affected nutritional status and weight maintenance.

Subjects: The subjects were selected from HIV clinic i.e. the out patients department of K.E.M. hospital and from Voluntary Testing Center (VTC) of AIDS surveillance center department of microbiology KEM hospital located in Mumbai.

Criteria for inclusion for:

a. The individual should be adult HIV positive patients with the age of 18years or above.

b. Subjects belong to the class I, II, III stages of progression of diseases

c. Subjects should not be under any form of dietary treatment.

Sample: A total of 100 adult HIV patients of which males and females were recruited for nutritional assessment and for follow up visits.

Data Collection: Information about the subjects was collected with the help of detailed recording tool. The tool was used for nutritional assessment and for follow up visits.

Sub heading for nutritional assessment: For general information. Background information, Occupation and bad habits.

Anthropometric information like height, weight and BMI.

Biochemical information: consisting of haemoglobin, total protein, CD4, CD8 count.

Protocol and outline of methodology

Before counseling	Food frequency questionnaire and 24 hour dietary recall. Noting symptoms like, nausea, vomiting, anorexia, diarrhea.

Following parameters were studied before and after counseling.

Biochemical	Hemoglobin by calorimetric Total protein by Biurate method CD4 and CD8 by Becton Dickinson Immuno Cytometry system
Anthropometric	Weight(Kg) Bathroom Scale Height Mid-Arm Circumference and Thigh Circumference using non stretchable measuring tape.

Counseling and follow-up for patients.
Counseling protocol

Introduction	01
Transmission of HIV	01
Scientific explanation about HIV	01
Basic nutrition knowledge and explanation about malnutrition	05
Side effects helping patients to overcome side effect	04
Follow-up	03

Duration of study: 6 months

A proper method is followed to collect the survey data and results obtained are tabulated. All the observations are critically examined and discussed in the light of medical therapy and recommended the nutritional education to HIV/AIDS patients.

Results and Discussion

Task before visual and non-visual vehicles of media besides creating awareness and providing knowledge base about HIV/AIDS is to remove the misconceptions about the transmission of the virus and the social ostracism of affected persons. All such issues are capable of being resolved when ignorance gives place to knowledge. Another misconception is that HIV/AIDS incidence is escalating in high-risk groups such as commercial sex workers (CSWs)[11,12], truckers and those indulging in immoral trade but strangely enough all of us fall under the high risk groups as long as the restraints and precautions are accorded low priority matter of choices. The general information data collected during survey were tabulated in Table 1

A total of 84 subjects were interviewed out of which 77% were males (n=65) and 23% were females (n=19). Majority of them were in the age group of 25-35 years averaging to 32 years. Similarly 59% had formal education up to 12 standards (n=45) while 17% were graduates and 9% were illiterate. The results survey also indicates that 80% of males and females were married. The subjects were HIV positive of which 63 subjects were infected during sexual transmission while 19 subjects were infected during blood transfusion. Only 2 subjects were the victim due to infected syringe needle. The subjects were classified on the basis of phase of diseases and found that 67 subjects were in acute phase and 16 subjects were in the clinical latency. Only one subject was found with persistent lymphoadenpathy. None of the subject was in the study group with known AIDS symptoms.

These subjects were financially from lower socioeconomic group and attending general OPD of a corporation hospital for treatment. The subjects were classified on the basis of their bad habits wherein 47% subjects were found to be tobacco chewing and 46% were smoking tobacco. Only 7 % subjects were identified as alcoholic.

The patients were classified on the basis of type of treatment. 45 patients were receiving allopath drugs while 21 patients were receiving homeopathic drugs. 16 patients were not taking any drug therapy but attending HIV OPD for counseling. The patients with homeopathic treatment developed mild side effects like vomiting, anorexia, diarrhea and patients taking allopath treatment indicated varied degree of side effect like vomiting, anorexia, diarrhea taste alteration and dry mouth feeling. It was recommended that patients with vomiting, anorexia, and diarrhea may temporarily withdraw intake of any dietary irritants. The poor nutritional status of HIV patients can arise due to different side effect[13].

Major symptoms of HIV/AIDS

Malnutrition is a common complication of HIV/AIDS infection. It affects immune system, leading to increase in rates of opportunistic infections. HIV and nutrition are intimately linked. HIV infection can lead to malnutrition, while poor diet can in turn speed the infection's progress it may complicate the treatment of diseases by affecting the intestinal tracts ability to absorb drug and decrease survival rate. Various factors affect the malnutrition like Infections, Fever, Gastrointestinal illness, Developmental problems Economical issues, Psychological issues. Hence HIV patients must be treated by Change in metabolism, Change in oral intake, Functional impairment and Economic issues. People with AIDS require twice the normal daily calorie intake to protect patients from dangers of HIV related malnourishment. Good nutrition means consumption of enough macronutrients and micronutrients from food. An evidence-based response is required to alleviate the overall burden of malnutrition and to reduce the severity and complexity of the impact that HIV/AIDS and malnutrition have on each other. Policy-makers and actors in both nutrition and HIV/AIDS have to be reached with clear and culturally acceptable messages with innovative partnerships. Malnourished people are less likely to benefit from antiretroviral treatment[14]. Patients with mild malnutrition were twice as likely to die in the first three months of treatment. With severe malnutrition the risk was greater than for those of healthy body weight. Without food or the right nutrition, taking antiretroviral drugs can be so painful that people simply don't. In a

choice between taking pills with no immediate or obvious effect, and eating food to survive, food will certainly take priority every time. A health worker explained that taking antiretroviral drugs on an empty stomach is like digesting razor blades. The result is that many simply do not take them.

Weight loss

In children, HIV is linked to growth failure. Children with HIV were on average around 7 kg lighter and 7.5cm shorter than uninfected children at the age of 10years. One factor behind HIV related weight loss is increased energy expenditure. People with HIV tend to burn around 10% more calories while resting, compared to those who are uninfected. People with advanced infection or AIDS particularly children may expend far more energy. In normal circumstances, a small rise in energy expenditure may be offset by eating slightly more food. There are two other important reasons why people with HIV may lose weight or suffer childhood growth failure[5]. Once HIV has weakened the immune system, various infections can take hold, some of which can affect appetite and ability to eat. For example, sores in the mouth or throat may cause pain when swallowing, while diarrhea or nausea may disturb normal eating patterns. Stress and psychological issues may contribute. Secondly, weight loss can occur when the body is less able to absorb nutrients, particularly fat from food, because HIV or another infection has damaged the lining of the gut. Diarrhea is a common symptom of such malabsorption[15]. Current antiretroviral drug treatments control HIV infection and prevent severe wasting, of other AIDS-related conditions. Emaciated people tend to regain weight once they begin treatment and stunted children start to grow faster. Studies have found that small weight loss between 5% and 10% over six months is quite common among people with HIV who are taking treatment and not trying to lose weight[16]. Weight loss strongly predicts illness or death among people with HIV. Losing 3-5% of body weight significantly increases the risk of death; while losing more than 10% is associated with a four- to six-fold greater risk. Failure to gain weight for six months after the start of antiretroviral treatment increases the chance of death. The mean anthropometric parameters were recorded for HIV patients & are tabulated in Table 2.

The mean weight of patients was recorded before and after the nutritional counseling. It was observed that mean weight of 47.69 Kg and mean height of 163 cm at was calculated before the counseling. There was marginal change in the weight of patients after third follow up in either gender. The BMI of the patients was averaged at 18.45. The weight parameter was increased to 49.12 Kg in male patients and 50.53 Kg in female patients at the end of three follow up. Similarly the BMI was increased to 19.11 in male and 19.84 in female patients at the end of third FU sessions. The study indicates marginal differences in the parameters among the male and female patients. The improvements in these anthropometric parameters indicate the success of the nutritional education. The nutritional intervention in HIV patients can improve the nutritional and anthropometric parameters and may lead to enhanced ability to fight infection. (Mckinley 1994)[17]

The common biochemical parameters like haemoglobin, serum protein and CD4 counts were recorded at basal and after each follow up, for each HIV positive patients. The results are summarized in Table 3.

The haemoglobin and total serum protein levels are the early indication of malnourished status of HIV patients. The total CD4 and CD8 counts indicate immunological status of the patients. (McCorkindale 1990)[18]. Both these count has shown increased value suggesting favorable effect of nutritional counseling. Nutritional counseling is the major co-factor in HIV disease progression. According to (Timbo 1994)[19] poor nutrient intake and infection affect the immune system of the body and interact with each other. The relationships lead to the development of opportunistic infections. In order to evaluate nutritional status of the HIV patients, mean nutrients intake was recorded tabulated in Table 4.

Nutritional intervention will either in the form of nutrient supplement or counsel is essential to help to patients which may combat secondary opportunistic infections. Chelbowski (1995)[20] has shown that counseling improves nutritional status of HIV infected patients.

The energy level in the diet of patients showed improvement at each follow up (FU) as a direct effect of nutritional counseling. The mean energy at based level for male patients was 1168 Kcal/ day which gradually increased to 1491Kcal/day after three FU at an interval of 4 weeks each time. Similarly female patients at base mean energy was 1139 Kcal/day increased to 1411 Kcal/day at the end of three FU. Such degree of improvement in the energy intake up to 74% was reported by Lunder (1995)[21] while our patients have shown improvement up to 70%.

Some antiretroviral drugs have been linked to lipodystrophy.in which HIV-related wasting tends to deplete lean tissue. Lipodystrophy involves changes in fat distribution. Prolonged treatment is associated with losing fat from the face, limbs or buttocks, or gaining fat deep within the abdomen, between the shoulder blades, or on the breasts. Antiretroviral treatment can contribute to lipid abnormalities by raising LDL cholesterol, lowering HDL cholesterol, and raising triglyceride levels in the blood. This may result in higher risks of heart disease, stroke and diabetes. Other side effects of antiretroviral treatment include insulin resistance, which can lead to diabetes[22].

The fat, protein and carbohydrate level and status of mineral iron in the diet of patients showed increased le3vel in all the patients irrespective gender. All theses nutritional parameters indicated a definite trend of increase at each FU sessions. Thus improvement in nutritional status may be attributed to proper nutritional counseling. Castelbon 1997 evaluated the nutritional status and reported weight loss parameter was independent of protein, carbohydrate and fat intake.

Micronutrients are vitamins and minerals that the body needs to maintain good health. Researchers have found that people with HIV are more likely to show signs of micronutrient deficiencies, compared to uninfected people. Specifically they have found low levels of vitamin A, vitamin B_{12}, vitamin C, vitamin D, arytenoids, selenium, zinc and iron in the blood of various populations. It is possible that HIV might affect the markers used to measure micronutrient levels more than it affects the actual amounts of micronutrients available in the body. Various micronutrients have been linked to changes in the rate at which HIV infection progresses to AIDS. Low levels of vitamin A, vitamin B_{12}, vitamin E and selenium seem to accelerate progression. Zinc is essential for a healthy immune systems, it has been shown to play a role in HIV's replication cycle[23]

Different awareness methods were experimented on HIV patients but each method has few limitations.

Awareness methods:

Radio is by far the often cited source of knowledge about AIDS. About half of the female respondents and more than 7 in 10 male respondents have heard about AIDS on the radio. In many countries, men are far more likely than women to have heard about AIDS on the radio.

Friends and relatives prove to be one of the most important sources of AIDS information in many countries. At least 50% of female respondents in 10 African countries say they have heard of AIDS from friends or relatives.

Schools and teachers appear to play little of a role currently in AIDS awareness. In many countries—particularly those with low levels of AIDS awareness—schools and teachers are mentioned by fewer than 10% of respondents.

Using a condom and having only one sexual partner are the two safe behaviors most often mentioned by respondents who knew about the sexual transmission of HIV.

Only a small percentage of respondents began using condoms to prevent HIV transmission. Fewer than 8% of women in all countries report that they have changed their behavior by using condoms. Among married women, the percentages are low.

The psychological parameters of the patients were assessed in terms of depression scale using Zung's score method. According to this degree for depression is directly proportional to scale score. Depression rating was measured initially and after the nutritional counseling has shown positive effect on the patients[24].

Nutrition and HIV/AIDS

The HIV/AIDS epidemic poses an inescapable challenge to the world at large. A massive effort is needed to cushion the impact of the epidemic and nutritional care and support should be integral elements of any action taken. The basic principles of healthy eating will serve well if HIV-positive. These principles include:

Eating a diet high in vegetables, fruits, whole grains, and legumes

Choosing lean, low-fat sources of protein

Limiting sweets, soft drinks, and foods with added sugar

Including proteins, carbohydrates and little good fat in all meals

In HIV-positive, good nutrition can have several benefits. It can:

Improve your overall quality of life by providing nutrients your body needs.

Keep your immune system stronger so you can better fight disease.

Help manage HIV symptoms and complications.

Process medications and help manage their side effects.

Today, HIV and AIDS are considered chronic, yet manageable, diseases thanks to three decades of advanced medical research and the breakthrough discovery of combination medication therapy HAART (Highly Active Antiretroviral Therapy), which changed the model of HIV care. With proper medical care, maintaining a healthy body weight and eating a variety of nutritious foods, people living with HIV/AIDS can likely delay progression of the disease and expect to live a long, healthy life.

Good nutrition can cure HIV/AIDS and maintains and improve the nutritional status of a person with HIV/AIDS. It delays the progression from HIV to AIDS related diseases. It maintains body weight and fitness and improves the performance of the immune system. It reinforces the effect of the drug taken. It is important to get enough nutrients to help you stay well. Good nutrition is important during the time before you start HIV treatment. It is an important part of helping anti-HIV drugs work as well as possible once taking them. While taking anti-HIV drugs it is important to eat a healthy, balanced diet, as HIV medication can cause changes to the way the body metabolizes some fats and sugars. A good diet will consist of a balance of the following types of food:

The results from this study highlight the enormous challenges lying ahead in the prevention of the spread of HIV/AIDS. HIV/AIDS campaigns have significantly raised awareness and knowledge of the infection, particularly in urban areas. Key messages on HIV prevention have reached out to individuals at risk, as evidenced by changes in their sexual behavior. Prevention measures that are promoted globally are at odds with what couples perceive as acceptable strategies to protect themselves within their own social and family environment. In countries where large families are the norm, the promotion of safer sexual behavior comes up against the desire for more children.

India has recorded declining trends of HIV/AIDS infection and demonstrated that this pandemic beats a retreat in the face of determined and sustained massive efforts in generating awareness among people, and empowering people with information to combat it effectively. Leaders of media, in cooperation with other segments of our polity and society, can play a significant role in educating public opinion. According to a survey conducted in India, 70% of Indians identified television as a primary source of information about HIV/AIDS. In conclusion existing programs have done little, so far, to adequately inform the vast majority of couples who live in the rural areas of many Asian countries. Clearly, dramatic changes in sexual and reproductive awareness and behavior in many less developed countries are needed in order to defeat the HIV/AIDS epidemic.

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Table 1. Distribution of subjects according to General information

Parameter/ Number of subjects	Males(n=65)	Female (n-19)	Total (n=84)
Age (Years)			
18-25	14	03	17
25-35	34	09	43
35-45	16	05	21
>45	01	02	03
Education			
Illiterate	06	02	08
1-6 Std	10	04	14
6-12 Std.	38	07	45
12-16 Std.	11	06	17
Martial status			
Single	09	03	12
Married	54	15	69
Widow	02	01	03
Mode of transmission			
Sexual Transmission	47	16	63
Blood Transfusion	16	03	19
Use of infected syringe needle	02	-	02
Phase of diseases			
Acute phase	53	14	67
Clinical latency	11	05	16
Persistent lymphadenopathy	01	-	01
AIDS	-	-	-

Table 2. Mean weight and BMI of patients

Parameter/ Period	Basal	FU1	FU2	FU3
Male(n=65)				
Weight (Kg)	47.69 ÷ 8.25	48.31 ÷ 8.12	48.68 ÷ 8.03	49.12 ÷ 8.03
Height (cm)	163 ÷ 3.45	164 ÷ 3.16	164 ÷ 2.98	164 ÷ 3.04
BMI	18.45	18.63	18.89	19.11
Female(n=19)				
Weight (Kg)	49.26 ÷ 11.71	49.74 ÷ 11.15	50.11 ÷ 10.90	50.53 ÷ 10.75
Height (cm)	154 ÷ 4.45	154 ÷ 3.97	155 ÷ 1.87	155 ÷ 2.21
BMI	19.16	19.47	19.68	19.84

Table 3. Biochemical parameters of patients

Parameter/ Period	Basal	FU1	FU2	FU3
Male(n=65)				
Hemoglobin (g/dl)	10.79 ÷ 1.34	11.14 ÷ 1.13	-	-
Total protein (g/dl)	6.2 ÷ 0.64	6.4 ÷ 0.52	-	-
CD4 Count (g/dl)	310.86 ÷ 47.69		-	-
Female(n=19)				
Hemoglobin (g/dl)	10.61 ÷ 0.91	11.09 ÷ 0.78	-	-
Total protein (g/dl)	6.2 ÷ 0.61	6.4 ÷ 0.50	-	-
CD4 Count (g/dl)	316.84 ÷ 48.02		-	-

Table 4. Mean nutrient intake before and after counseling

Nutrient/Period	Basal	FU1	FU2	FU3
Male(n=65)				
Energy (Kcal)	1186 ÷ 222	1373 ÷ 201	1414 ÷ 182	1491 ÷ 208
Protein (gm)	32.5 ÷ 6.48	40.3 ÷ 7.52	41.3 ÷ 6.9	42.7 ÷ 7.7
Fat (gm)	34.07 ÷ 8.1	40.16 ÷ 11.2	43.41 ÷ 10.9	47.32 ÷ 14.46
Iron (mg)	10.39 ÷ 3.81	13.70 ÷ 5.07	13.28 ÷ 3.97	15.11 ÷ 4.29
Carbohydrate (gm)	180.3 ÷ 38.77	208.51 ÷ 33.85	215.4 ÷ 27.43	222.9 ÷ 27.58
Female(n=19)				
Energy (Kcal)	1139 ÷ 200	1286 ÷ 228	1345 ÷ 109	1411 ÷ 119
Protein (gm)	31.79 ÷ 6.84	37.40 ÷ 7.68	46.54 ÷ 6.35	39.68 ÷ 5.43
Fat (gm)	34.45 ÷ 9.76	40.63 ÷ 17.37	40.42 ÷ 5.14	41.59 ÷ 5.17
Iron (mg)	9.19 ÷3.39	12.52 ÷ 5.91	13.71 ÷ 4.38	14.45 ÷4.75
Carbohydrate (gm)	176.7 ÷ 34.10	192.8 ÷ 26.73	208.5 ÷ 20.22	220.7 ÷ 26.47

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