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Faculty of Graduate Studies

Nutrition of Elderly in the City of Nablus

Prepared By

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This thesis was defended successfully on 16/5/2004 and approved by

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2- Dr. Suleiman Khalil	---------------------
3 - Dr. Jamal Alaul	---------------------

Dedication

This study is dedicated to the pure soul that is the first cause behind it. Who advised encouraged and urged me to go after the M.Sc. To my father, hope you rest in peace

Your daughter

Acknowledgment

I would like to expire my profound gratitude and appreciation to my adviser Dr. Samar Chazal for her support, guidance and efforts that contributed to the completion of this study.

My special thanks for my mother; sister, my family and community service center (CSC) An-Najah University.

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Glossary:

1- BMI (Body mass index).

2- WHO (World health organization).

3- FAO (Food and agriculture organization).

4- PCBS (Palestinian Central Bureau of Statistics).

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Abstract

The challenge of meeting the nutritional needs of elder population is compounded by the lack of research in this area, This challenge is augmented by the interaction of current and past social, economic, and psychologic factors, a wide range of individual differences in the biologic process of aging.

Nutritional requirements should, at least in part, be based on biologic changes caused by aging as well as requirements of disease processes prevalent in aging, such as cardiovascular disease.

The goal of our study, the first of its kind in Palestine is to find out the nutrition status and it's risk factors in elderly people in Palestine represented by elderly in Nablus.

The study sample consisted of 223 elderly from the city of Nablus, who were randomly chosen. They were asked to answer a questionnaire about their social profile, health profile and risk factors affecting nutrition, also Body Mass Index (BMI) was measured. All data were analyzed using Statistical Package for Social Studies (SPSS version 10).

Although some results were inconsistent with our expectation, especially those related to BMI and its relation with risk factors, we had very important positive results.

There was an over all poor knowledge about nutrition among elderly that necessitates public education about nutrition facts.

Our results highlight the need for more attention from the health policy makers to the relationship of nutrition and disease.

More important role of professional nutrition specialists in the health system is called for.

Chapter one

Introduction

1. Introduction:

1.1 Aging process

1.1.1 What does aging mean?

Aging is a process in which there is a reduced capacity to replace worn out cells .It is a continuous process that occurs throughout   life cycle, resulting in procreative body changes. Aging is individual and it's a part of a total life process. Susceptibility to disease increases with age, since there is a reduced capacity to handle physical stresses. (Harrick, 1982).

1.1.2 Theories of aging process:

  Many theories have been advanced to explain the biochemical and physiological bases of the aging process, the following are of importance :

1. " The clinker " theory ; which attributes the loss of cell function with aging to the accumulation of waste in the body.
2. The wear and tear theory, which attributes aging to the chemical and mechanical exhaustion of the cells.
3. The somatic mutation theory, which suggests that somatic cells are inactivated.
4. The auto immune theory, which suggests that, with aging, antibodies that usually attack bacteria and foreign cells start to attack normal body cells (Guthrie, 1986).

1.1.3 Factors affecting aging:

There are many factors that influence the aging process and the effects on different people. These include:

• Genetics; the tendencies inherited from our parents ؛
• Wear and tear; the wearing out of body tissues ؛
• Life styles; the habits people adopt during their lives and the work they do؛
• Illness; developing at any stage of life ؛
• Social factors; stress, relationships, culture ؛

• Occupation; different occupations may be more likely to increase wear and tear and also cause some illnesses.(Irving ,Munday, Rowlands, 2001)

1.2 Definition of elderly people

The definition of an older or elderly person is dependent upon a multitude of issues and many definitions can be correctly applied. In 1875, in Britain, the Friendly Societies Act, enacted the definition of old age as, "any age after 50" (Roebuck, 1979).

The selection of age of 65 years, which has been most common, is attributed to Otto von Bismarck, who arbitrarily chose that age in establishing Germany's social security program in the 1880s, and for century that age level has persisted (Beal, 1980).Yet pension schemes mostly used age 60 or 65 years for eligibility. (Roebuck, 1979).

At the moment, there is no United Nations standard numerical criterion, but the United Nation agreed that the cutoff is 60+ years to refer to the older population (Harare MDS Workshop, 2001)

1.3 Classifications of elderly people

Age classification varies between countries and over time, reflecting in many instances the social class differences or functional ability related to the workforce, but more often it is a reflection of the current political and economic situation. (Thane, 1978).

Elders may be placed in one of three categories based on biologic characteristics:

1. Successful agers, who have little or no loss in functioning (Kahn RL, 1987)
2. Usual agers , who have a variety of chronic medical conditions and disabilities but live independently (FeldmanJJ,1991)
3. Accelerated agers, who carry a heavy burden of chronic diseases and disabilities(Wielen RPJ,1995).

Another classification refers to age:

1. The young old: are people aged 60 to ٧٥ years and
2. The old old: are people over 75 years. The old old is often referred to as the vulnerable old in that they are especially at risk of physical, psychological and social traumas .(Irving, Munday, Rowlands, 2001)

One of the more vulnerable groups among the aging elderly is the so-called **"frail elderly."** There is no operational definition for "frailty," and

definitions vary. Often, frailty is described broadly, such as "a chronic disease threatening life expectancy" (MacAdam M, 1989)

1.4 Changes in health status & organ functions that take place during aging :

1.4.1 Physical changes observed during aging:

The average ages at which various physiological changes occur are shown in the following figures: (Qnawi,1998)

age in years

age in years

age in years

age in years

Mean nerve conduction velocity — age in years

Mean BMR — age in years

Mean brain weight — age in years
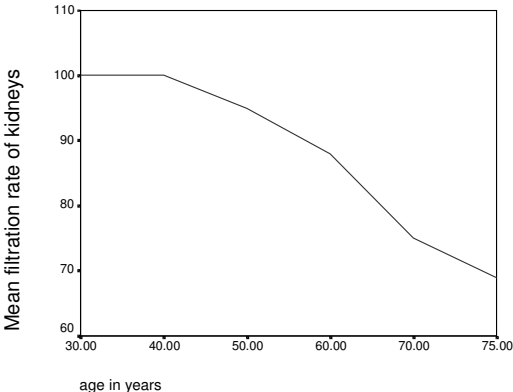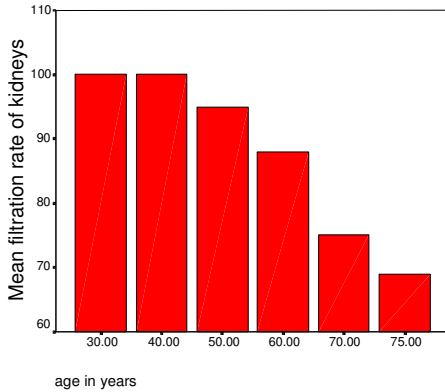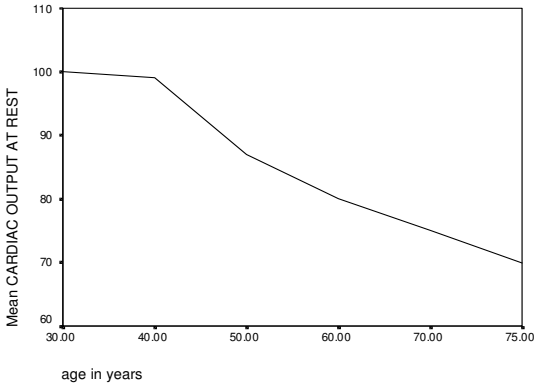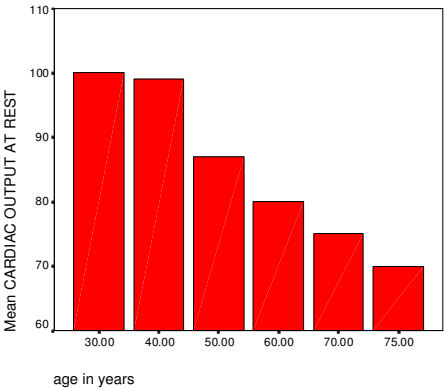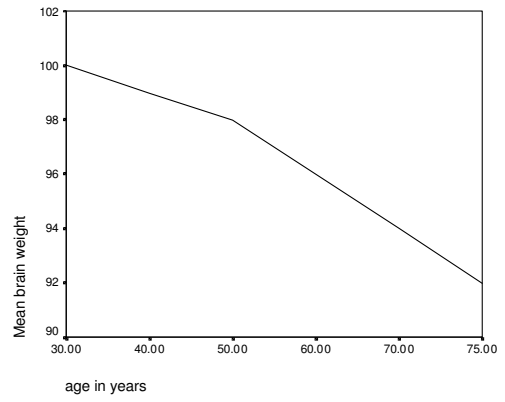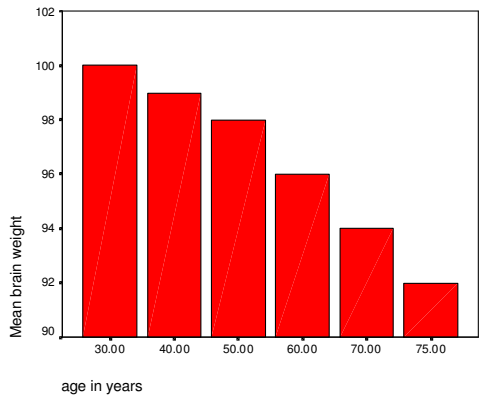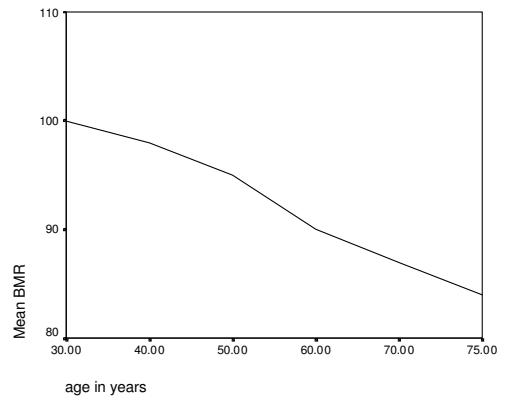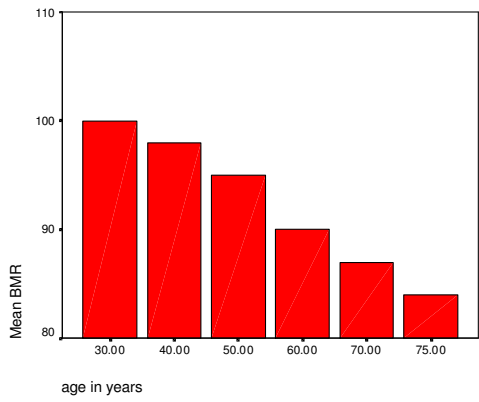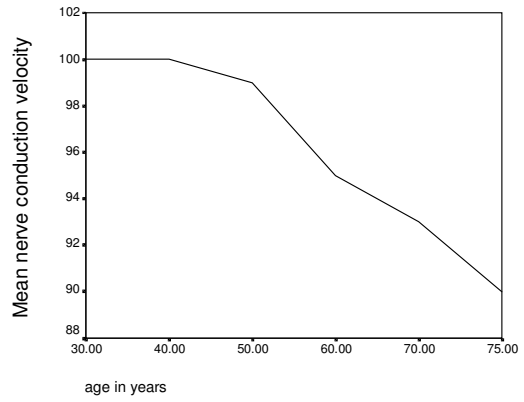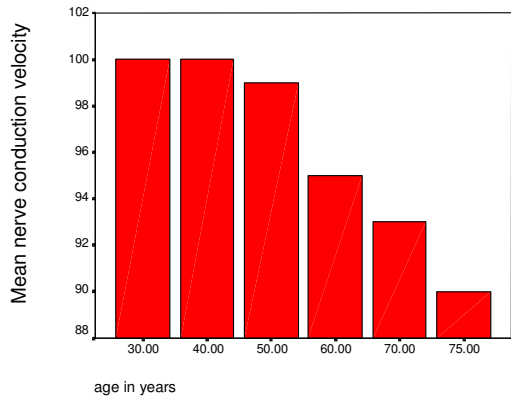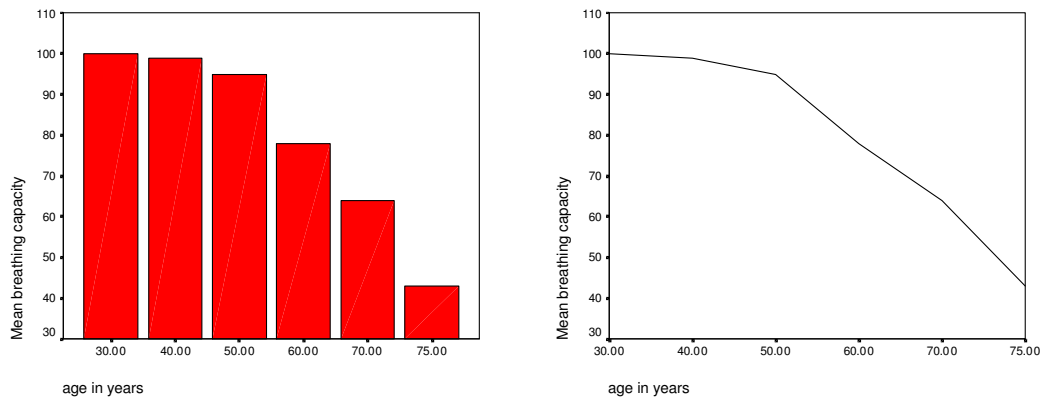
Fig. (1) physiological changes noticed during aging

Many changes in various physiological functions take place in 75-years old compared to 30-years old. Fig.1 presents changes in tissue size. The reduced capacities of the heart to pump blood and the kidneys to filter the blood, the reduced reaction time for nerves and other physiological changes in the utilization of nutrients are effects. Overall, the most influential change is probably the decrease in lean body mass, and the concurrent decrease in energy need. . (Guthrie, 1986). Other changes have more specific effects on nutrition such as changes occurring in the G.I.T., loss of teeth, decreased production of saliva, decline of taste buds & change in food preferences, and decreasing in the gastric secretions of acid of enzymes. (Munro,1982)

1.4.2 Cellular changes with aging:

Studies of individual cells showed that each type of cell is capable of a limited number of cell divisions during it's life time. For most tissues, the number of divisions of cell is some where between 50 and 55. After that,

the cell type is incapable of any further divisions and therefore is unable to repair or replace itself. (Guthrie, 1986)

The age at which a cell reaches this stage is determined by great many factors such as socioeconomic status, ethnicity, education, health status, perception of health status, functional ability, access to health / nutrition care, food security, and food choices. (McBean, 2001)

1.5 Specific nutritional needs of older persons

Elderly people are particularly vulnerable to malnutrition. Moreover, attempts to provide them with adequate nutrition encounter many practical problems. Their nutritional requirements are not well defined. Since both lean body mass and basal metabolic rate decline with age, an elderly person energy requirement per kilogram of body weight is also reduced .The challenge of meeting the nutritional needs of older population is compounded by the lack of research in this area, the interaction of current and past social, economic, and psychological factors, and the wide range of individual differences in the biologic process of aging (Williams 1985)

1.5.1 Elderly Diet and Fiber:

As the body ages, the gastrointestinal tract changes and people tend to develop more problems with constipation. A high-fiber diet and Cooked or baked vegetables, fresh fruit and high-fiber breakfast cereals can prevent that (Remig2002)

1.5.2 Elderly People and Calorie Needs

Table 1 Average Calorie Needs Throughout Life

Age Group	1-3	4-6	7-10	11-14	15-18	19-59	60-74	75+
Calorie Needs (Male)	1230	1715	1970	2220	2755	2550	2350	2100
Calorie Needs (Femal)	1165	1545	1740	1845	2110	1940	1900	1810

Table 1 describes the average values only. Heavier or more active people may need more. (Remig, 2002).

FAO/WHO recommends a decrease of 10%in energy from ages 60to 69, and additional 10% after age 70. Since both lean body mass and basal metabolic rate decline with age, an elderly person's energy requirement per kilogram of body weight is also reduced. (GUTHRIE, 1986).

1.5.3 Foods to Include for Optimum Health

A balanced diet must contain a mixture of important food groups daily. The following food groups have special importance for optimum health.

- **Fruit** In particular those rich in Vitamin C like blackberries, strawberries, blackcurrants, citrus fruit etc.
- **Vegetables** In particular vegetables high in Vitamin A (beta-carotene) and Vitamin C., like Carrots, squash, sweet potato, tomatoes, spinach, kale, collard greens etc.
- **Protein** Eggs, white fish, milk, cheese, yogurt, lean meat, chicken etc.

- **Pulses and Grains for Fiber** Including lentils, chickpeas, brown rice, whole wheat bread, whole wheat cereals, whole wheat crackers. (Remig2002)

1.6   Factors affecting the intake of food:

- As with any age- group, the adequate nutrition for elderly's diet is the result of a variety of factors that determine dietary intake, the utilization of nutrients, and finally the nutrient requirements.
- Both nutrient intake and nutrient needs are determined by biological and social /psychological factors (Guthrie,1986)

1.6.1 Physical factors:

1.6.1. 1 Loss of teeth.

The longer people live, the more likely they are to lose their teeth. Some dental problems are attributed to the periodontal disease(Disease in tissue surrounding the teeth). Causes of periodontal disease include a low calcium/phosphorous ratio in the diet, and low vitamin D intake. Regardless of the cause, the absence of a satisfactory method of chewing food leads a person without teeth to many modifications in eating patterns.

When foods high in cellulose (such as fruit & vegetables) are eliminated from the diet, dietary bulk is reduced, with a resulting decrease in gastro - intestinal motility and more problems of elimination. A reduced intake of meat- one of the best sources of available iron- will possibly result in impaired iron status, which in turn may influence behavior, particularly activity.

If fluoridation of the water supply, by reducing tooth decay, decreases the number of edentulous senior citizens (those without teeth), its benefits may be as great in later yeas as in childhood. (Guthrie, 1986)

1.6.1. 2 Loss of neuromuscular coordination:

The ability to maintain fine neuromuscular coordination declines with age, frequently slowing up in the ability to manipulate eating utensils In order to avoid the embarrassment that comes with spilling food or the inability to cut meat, or eat soup, the elderly people often avoid such food. This may lead to significant dietary changes & frequent nutritional inadequacy. (Irving, Munday, Rowlands, 2001)

1.6.1. 3 Physical discomfort

Older people have more discomfort associated with eating certain foods. Some foods may cause heartburn; others may cause gastric distension. Still others, many elderly believe, are incompletely digested. Efforts to avoid the offending foods may lead to the exclusion of nutritious foods from the diet.

1.6.1. 4 Impaired hearing & vision

The loss of visual & auditory acuity has many implications on food selection. Someone who is unable to read labels or identify foods that are not at eye level will have trouble selecting foods. Inability to read label directions decrease interest in trying new products, and poor hearing may lead to an older person's not asking for information for fear of hearing embarrassed. (Beal,1980)

1.6.2 Physiological factors:

1.6.2. 1 Body composition

The changes in body composition that occur throughout adult life assume greater importance in later years. The decline of over 5% in lean body mass during each decade and its replacement with body fat account in part for the decline in basal metabolic rate.

The following figure shows the changes in body composition with age. (Qnawi, 1998)
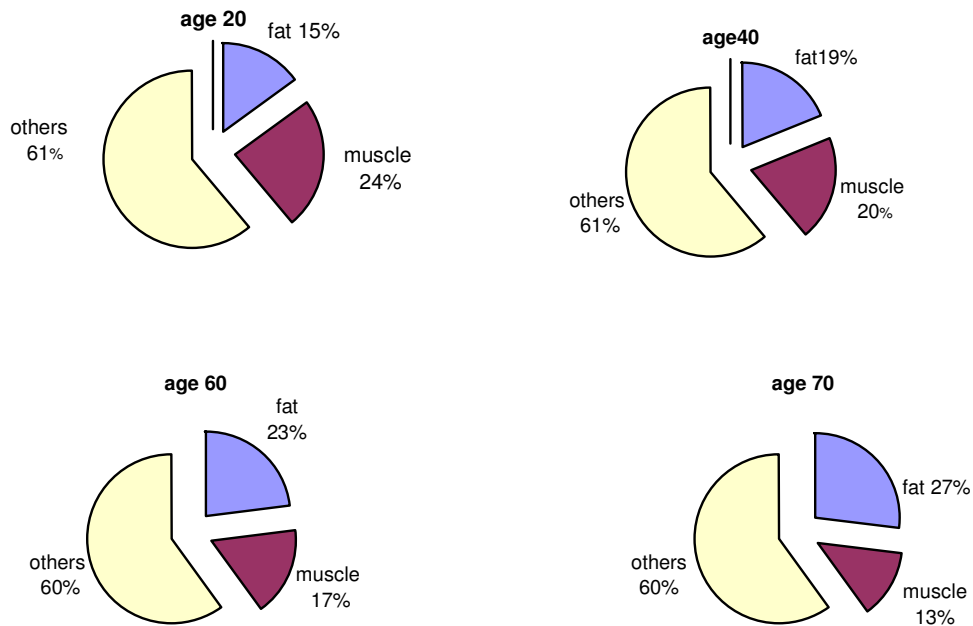
Fig (2) changes in body composition with age

Fig.2 depicts the change in body composition with age ,it shows the gradual decrease in lean body mass with increasing fat . An observed slow increase in body weight is not necessarily bad. Similarly, nutrient uptake by

cells may decrease by as much as 40% leading to cellular malnutrition even when adequate nutrients are available. This helps to explain why older people do not respond as well as might be expected to nutrient supplementation**.** (Qnawi, 1998)

1.6.2.2 Diminished sense of taste & smell

The decline in the number of taste buds at age 70 to 36% of those at age 30 explains decreased interest in food. With fewer and less sensitive taste buds, it is understandable that the pleasure of eating is diminished. A zinc deficiency may be involved; it too is a cause of hypogeusia (decreased taste sensitivity) hyposmia (a loss of the sense of smell). The ability to taste salt declines, whereas sensitivity to sweat tastes is not diminished. Many older people complain of unpleasant taste in their mouth that reduces their enjoyment of food. (williams,1985)

1.6.2. 3 Anorexia

The basis for the loss of appetite, or anorexia, may be either physiological or psychological. On a physiological level, depressed appetite may reflect an absolute or relative thiamine or zinc deficiency. Psychologically, it may be a manifestation of loneliness, anxiety, or unhappiness. Sometimes the use of appetizers such as light soups will stimulate eating and improvement in the physical or social environment as well as frequent and smaller meals may also improve appetite. (Guthrie,1986)

1.6.3 Social factors:

1.6.3.1 Economic considerations

Economic pressures play an important role in determining dietary adequacy. Because many people over 65 years of age are living on fixed income; they have a limited food budget. This will force many older people to choose the least expensive foods that provide them with energy and satisfy their hunger. This, frequently means substituting relatively inexpansive carbohydrate foods such as bread and cereal products (williams, 1986).

1.6.3.2 Nutrition misinformation:

Many elder people suffer from a fear that they may become ill and be unable to look after themselves, or handle the cost of medical care. This makes them ready prey for the food faddist or promoter of natural food and food supplements, who promises them excellent health, eternal youth, and increased vitality and assures them that they will avoid the debilitating diseases so feared in old age. (Beal, 1980).

1.6.4 Psychological factors:

1.6.4.1 Living alone:

For people who live alone, the lack of motivation to cook regular meals leads to the use of snack foods, at irregular times, resulting in poorly balanced meal. It is not usual for older people to have a very erratic eating pattern a day of nibbling for example, followed by a day of overeating. Not surprisingly, it has been found that many older people eat more food with greater pleasure when they have company (Guthrie,1986).

1.6.4. 2 Depression:

Sometimes, depression takes the form of overeating, food is seen as a pleasant and always available experience- away of compensation emotional poverty. Compulsive eating comes with it the problem of resulting obesity. On the other hand, depression can also lead to rejection of food. (Beal, 1980).

1.6.4.3 Anxiety:

Conditions of emotional stress or deprivation often lead to modifications both in attitude towards food and food habits, and changes in utilization of nutrients. People who are anxious or concerned frequently experience the loss of appetite, and hormonal changes associated with anxiety lead to a depressed flow of digestive juices with resulting inefficiencies in the absorption of food. (williams, 1985).

1.7 Other factors may indirectly affect food consumption in elderly such as:

- **Memory**

The brain is made up of billions of brain cells or neurons and is responsible for all of the body's activities. After the age of about 25 years, some of these brain cells die every day and are not replaced. With most functions this does not seem to have any effect, but it does seem to impair short-term memory. The result is that many older people can remember clearly events that happened in the distant past, but not what happened yesterday. Genetics seem to play an important part in the age at which this

occurs, and there is no real treatment for this condition. (Irving, Munday, Rowlands, 2001).

- **Dementia**

Dementia is a general decline in all areas of mental ability, with decreasing intellectual ability being the most obvious feature. (Irving,Munday,Rowlands,2001).

- **Alzheimer's disease**

Injuries or treatable illnesses cause about 10 per cent of dementia cases, but the majority of cases are due to Alzheimer's disease. Alzheimer's is currently completely irreversible, as there is gradual loss of brain cells and shrinkage of the brain substance. (Irving,Munday,Rowlands,2001).

1.8 Elderly statistics

1.8.1 General statistics

In 1900, 3 million people (4% of the population in the United States) were over 65 years of age. Between1900 and 1960 the total population doubled, but the numbers were over 65 quadrupled. In 1985, 24 million people (11% of the population in the United States) were over 65 years of age. (Guthrie, 1986). In 2001 one in 8 Americans, or about 13% of U.S population, is 65 years of age or older (WJ, 1997).

Today there are an estimated 580 million elderly people in the world, about 350 million (61%) of whom live in developing countries. By 2020,

the figure is expected to rise to 1000 million elderly people, with 710 million (71%) living in developing countries. (WHO, 2003).

1.8.2 Female statistics

Women comprise the majority of the older population in virtually all countries, largely because globally women live longer than men do. 2025 project the number of older women in Asia projected to soar from the current 107 to 248 million, and in Africa from 13 to 33 million. (WHO, 2003).

Most aging women are living in the developing regions of the world. Currently, more than half of the world's women aged 60 years and over is living in developing regions, 198 million compared with 135 million in the developed regions. (Fact sheet, WHO 2000).

1.8.3 World wide (aging statistic)

The percentages of population for elderly people in all the world in mid-2001:

The percent of population of age over 65 in all over the world is 7% (14% of this population in developed countries, 5% in less developed, 4% in less developed (excluding China).

The population percent of elderly people in Africa:

In North Africa Tunisia was the highest percent (6%), in Western Africa the highest percent was Cape Verde (7%), in Eastern Africa the highest percent was Rwanda (8%), in Middle Africa the highest percent was Gabon (6%) and in Southern Africa the highest percent was South Africa (5%).

The population percent of elderly people in North America is 13% in both Canada and US.

The population percent of elderly people in Southern America is 6%, the highest percent was in Uruguay (13%).

The population percent of elderly people in Asia:

In Western Asia the highest percent was in Israel and Cyprus both was 10%, in East Asia the percent is 8%, the highest percent was in Japan (17%).

The population percent of elderly people in Europe:

In Northern Europe the highest percent was in Sweden (17%), in Western Europe the highest percent was in Monaco (23%), in Southern Europe the highest percent was in Italy (18%) ,and in Eastern Europe the highest percent was in Bulgaria (16%) (2002 world population data sheet).

1.8.4 The population percent of elderly people in Palestine:

For people over 65 years old in the West Bank, the total males were 27592 and the total females were 33645 leading to an elderly percent of 3.8%. In Gaza Strip, for males the total was 12493 and for females it was 16489 with elderly percent of 2.9%. The over all percentage in Palestinian Territories for male was 40085 and for female was 50134 with over all elderly percent of 3.5% (2002 world population data sheet).

1.8.5 The population percent of elderly people in the city of Nablus

For people over 65 years old in the city of Nablus, males were 1742 and females were 2042 with over all elderly percent of 3.8% (PCBS, 1997).

1.9 Aim of the study:

• Studying different factors that affect the intake of food and nutrition status in our community in elderly people.

• Studying nutrition status of elderly individuals from different parts of the community.

1.10 Research hypothesis:

• Knowledge about proper nutrition affects heath.
• Positive attitude affects nutrition in elderly.
• Social condition affects nutrition in elderly.
• Medical condition affects nutrition in elderly.
• Overall nutrition affects health in elderly.

Chapter Tow

Methodology

2. Methodology:

This chapter describes the population and the subject of the study, data collection, the measuring instrument, tool & the analysis method .

2.1 Population of study (sample)

- The study population was chosen from different categories of elderly people in the city of Nablus; those are the elders at the nursing home, those residing with their families and those living alone

- The total of the study sample was 223 elder, every resident in the nursing home was included, while in other areas individuals in the samples were randomly chosen.

- The age of study sample was from 60 to above 80 years old, divided into three groups; the first between 60-70, the second 70-80 and the third over 80 age

2.2 Data Collection

Data was collected between the 1st of April 2003 and the 1st of September 2003 using structured interview and body weight and height measurements.

2.2.1 Tools

The questionnaire used in the interview has been evaluated and reviewed carefully .It consisted of questions focusing on four parts :

- The first part is about the social and demographic status including age, sex, residence, economic status, educational standards and religion .

- The second part is about questions related to nutrition, nutritious problems & food habits (Q from 1-17)

- The third part is about medical information that includes questions about diseases related to nutrition problems "i.e. D.M, digestive

system disease, osteoporosis, coronary diseases. "This information also includes questions about kind and quantity of medication used (Q 18 and 19).

- A measurement of Body Mass Index (B.M.I), (Q20).

2.3 Procedure

The data was collected through personal interviews for each sample. First each elder was interviewed and the researcher filled the questionnaire. B.M.I. was calculated after measuring body weight, each subject's weight was measured on manual (ordinary) scale , after a 12- to 14-hour fast. Standing height was measured with a wall-mounted stadiometer. Body mass index (BMI) was calculated according the formula (B.M.I= weight (kg)/height^2) (Guthrie, 1986). Some of participants couldn't stand up at all so we couldn't register their body weight.

2.4 Data analysis:

All data were entered and results were computed using SPSS software version 10 and applying the following statistical methods:

2.4.1 Analysis of descriptive studies

Tables containing descriptive studies were obtained, such as sex, age, residence, monthly income, B.M.I. and educational status of the sample study .

2.4.2 Analysis of medical – Nutrition studies

Tables for medical – nutrition obtained, such as B.M.I measurements, history of chronic diseases and daily medication .

2.4.3 Analysis of relationships

Relationships between factors that affect nutrition of elderly people and age, sex, residence, educational standard, monthly income, B.M.I and any other risk factors were obtained applying contingency coefficient with significance at P≤0.05.

Chapter Three

Results

3. Results:

The results of the study includes three main categories:

- Profile of the study population: social, health &risk factors profile.

- BMI measurements.

- Relationships.

3.1 Profile of the study population:

3.1.1 Social and demographic profile:

Table 2 Gender, age, residence & religion profile of the study population

Gender	Frequency	Percent
Male	٩٠	٤٠,٤
Female	١٣٢	٥٩,٢
Missing	١	٠,٤
Total	**٢٢٣**	**١٠٠,٠**
Age	Frequency	Percent
60-70	٩٤	٤٢,٢
70-80	٨٨	٣٩,٥
more than80	٤١	١٨,٤
Total	**٢٢٣**	**١٠٠,٠**
Residence	Frequency	Percent
Nursing house	٣٩	١٧,٥
with family	١٣٣	٥٩,٦
alone at home	٥٠	٢٢,٤
Missing	١	٠,٤
Total	**٢٢٣**	**١٠٠,٠**
Religion	Frequency	Percent
Muslim	١٩١	٨٥,٧
Christian	٣١	١٣,٩
Missing	١	٠,٤
Total	**٢٢٣**	**١٠٠,٠**

Table 2 shows the distribution of samples as follows:

- 40.٤٠% of the study sample were males, 59.2 % were females.

- ٤٢،٢%of the study sample were in 60-70 years old, 39.5 % were in 70-80 years old & 18.4 % were more than 80.

- ١٧،٥% of the study sample live in nursing home,59.6 % live with their family, & 22.4% live alone at their homes.

- 85.7% of the study population are Muslims while, 13.9% are Christians.

Table 3 Education, income & wages of the study sample population

Educational level	Frequency	Percent
No education	١٠٩	٤٨،٩
Basic	٧٤	٣٣،٢
High education	٣٩	١٧،٥
Missing	١	٠،٤
Total	**٢٢٣**	**١٠٠،٠**
Income	Frequency	Percent
Yes	١٧١	٧٦،٧
No	٤٩	٢٢،٠
Missing	٣	١،٣
Total	**٢٢٣**	**١٠٠،٠**
Wages	Frequency	Percent
more than 400 JD	٥	٢،٢
٢٠٠-٤٠٠JD	33	14.8
100-200 JD	133	59.6
No income	49	22
Missing	3	1.3
Total	**223**	**100%**

Table 3 describes the education, income and wages of study sample as follows:

- 48.9% of the study population had no education, the percentage of basic education level was 33.2%, while high education level percentage was 17.5%.

- 76.7%of the study population had income, while 22% has no income .

- 2.2%of the study population had monthly income more than 400JD,14.8% had 200-400JD,59.6% had 100-200JD, while ٢٢% had no income.

٣،١،٢ Health profile:

The health profile of the study population included chronic diseases affected by nutrition; medications taken that may interfere with nutrition and number of medications taken daily.

Table 4 Chronic diseases distribution

Disease	Frequency	Percent
Hypertension	١٢	٥,٤
D.M	١٧	٧,٦
Heart diseases	٣	١,٣
Digestive system diseases	١٢	٥,٤
Breathing diseases	٣	١,٣
Osteoporosis	٩	٤,٠
More than one diseases	١٢٥	٥٦,١
Total	181	81.1

Table 4 shows the distribution and frequency of chronic diseases among the study sample as follows:

- Total 181 assuming that 181(81.1%) had one or more chronic disease, and table 4 show this.

- 5.4% of the study sample had hypertension, 7.6% had D.M,1.3% had heart diseases, 5.4% had digestive disorders, 1.3% had breathing diseases, 4% had osteoporosis, and 56.1% of the study sample had more than one disease.

Table 5 Medication use & Number taken daily

Medication taken	Frequency	Percent
No	٦٠	٢٦,٩
Yes	١٦٣	٧٣,١
Total	**223**	**100**
Number of medicine	Frequency	Percent
1-2	٦٦	٢٩,٦
3-5	٦٩	٣٠,٩
5-8	٢٣	١٠,٣
More than 8	5	2.2
Total	**163**	**73**

Table 5 shows the frequency of medication use and number of medications taken daily the study sample as follows:

- 26.9% of the study sample stated that they don't take medication, while 73.1 % did take medications.
- 29.6% of the study population take 1-2 kinds of medicine daily, 30.9% take 3-5, 10.3% take 5-8, and 2.2 % take more than 8 medicines daily.

٣,١,٣ Risk factors profile:

٣,١,٣,١ Denture :

Table 6 Denture profile of the study population

Denture use	Frequency	Percent
No	١٣١	٥٨,٧
Yes	٩١	٤٠,٨
Missing	1	.5
Total	**223**	**100**
Difficulties of denture	Frequency	percent
No	٣٥	٣٨,٥
Yes	٥٦	٦١,٥
Total	**91**	**100**
Kind of food	Frequency	percent
Meat	٢٧	١٢,١
bread and rice	٤	١,٨
Other	٣	١,٣
all of the food	١٥	٦,٧
Total	**49**	**21.9**
Chewing &swallowing difficulties	Frequency	Percent
No	١٤٠	٦٢,٨
Yes	82	36.8
Total	**222**	**99.6**

Table 6 describes the frequency of denture use and denture problems in the study population as follows:

- 58.7%of the study population don't use denture, while 40.8 %are using it.

- 61.5 % of the study population that using denture are facing difficulties when using it, while 38.5% are not.

- 12.1% of these cases of the study population with using denture had difficulties in eating meat, 1.8% with bread and rice, 1.3% with other kinds of food, and 6.7%experience difficulties with all of the food.

- 62.8% of the study sample had no problems in chewing and swallowing, while 36.8% had problems.

3.1.3.2 Vision and hearing :

Table 7 Vision and hearing of the study population

Impaired vision & hearing	Frequency	Percent
No	١٢٢	٥٤,٧
Yes	١٠١	٤٥,٣
Total	**223**	**100**

Table 7 describes the frequency of vision and hearing problem in the study sample as follows:

- 54.7% of the study population had no problem in their vision and hearing , while 45.3% had some problems.

3.1.3.3 Food taste:

Table 8 Food taste of the study population

Taste impaired	Frequency	Percent
No	١٨١	٨١,٢
Yes	٤٢	١٨,٨
Total	**223**	**100**

Table 8 describes the frequency of food taste impairment in the study sample as follows:

- 81.2% of the study population had no problems with their food taste, while only 18.8% had taste problems.

٣،١،٣،٤ Smoking:

Table 9 Smoking profile of the study population

Cigarette	Frequency	Percent
No	١٨١	٨١,٢
Yes	٤٢	١٨,٨
Total	**223**	**100**
Narghile	Frequency	Percent
No	١٨١	٨١,٢
Yes	٤٢	١٨,٨
Total	**223**	**100**
Breathing difficulties	Frequency	Percent
No	١٦٠	٧١,٧
Yes	٦٢	٢٧,٨
Total	***222**	**99.5**

*1 missing

- 81.2% of the study population were not smokers neither cigarettes nor Narghile at the same percentage , while 18.8 %were smokers, whether cigarettes or Narghile at the same percentage.

٣،١،٣،٥ Physical activity:

Table 10 Physical activity profile of the study population

Past sport practice	Frequency	Percent
No	١٥٣	٦٨,٦
Yes	٦٨	٣٠,٥
Total	***221**	**99.1**
Current Sport practice (walking)	Frequency	Percent
No	١٠٥	٤٧,٥
Yes	١١٧	٥٢
Total	****222**	**99.5**

*2 missing   **1 missing

- 68.6% of the study population had no past sport practices while 30.5% had past sport practices.

- 47.5% of the study population don't practice any sport currently (at least walking) ,and 52.5 % do some sport practices (walking).

٣،١،٣ .٦ Kind of food consumption:

Table 11 Food consumption of the study population

Kind of food	Frequency	Percent
Milk		
No	١٢١	٥٤،٣
Yes	١٠٠	٤٤،٨
Total	***221**	**99.1**
Veg. & fruit		
No	٣٦	١٦،١
Yes	١٨٦	٨٣،٤
Total	****222**	**99.5**
Fat & Sweet		
No	٨٣	٣٧،٢
Yes	١٣٨	٦١،٩
Total	***221**	**99.1**

*2 missing   **1missing

In response to the type of food consumed, 54.3% of study sample was not taking milk, while 44.8% was consuming milk daily.

- 16.1 % of the study sample had low consumption of vegetable and fruit, while 83.4% had high consumption.

- 37.2% of the study population had low consumption of fat and Sweet , while 61.9% had high consumption.

3.2 Body mass index measurements:

Table 12 B.M.I of the study population

B.M.I categorized	Frequency	Percent
Under weight (less than 20)	1	0.4
Normal weight 20-24.5	23	10.3
Over weight 25-29.5	61	27.4
Clearly over weight 30-40	33	14.8
Obese (more than 40)	8	3.6
Total	***126**	**56.5**

Table 12 shows B.M.I frequency of the study population as follows:

- Not all study sample individuals were able to stand up, therefore we were unable to measure their weight and height. Only (56.5%) of individuals had their BMI measured. Most residents of nursing home didn't have BMI measured.

- 0.4% of the study sample are under weight , 10.3% are normal weight , 27.4% are over weight, 14.8 %are high over weight, and 3.6% are obese.

3.3 Relationship Results:

3.3.1 Age:
3.3.1.1 Age & Food Difficulty:

To study the relationship between Age & food difficulty, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table13 Age & Food Difficulty

			Age			Total
			٧٠_٦٠	٨٠_٧٠	More than 80	
Food Difficulty q2	No	Count	٤٦	٤٧	١٧	١١٠
		%within q2	%٤١,٨	%٤٢,٧	%١٥,٥	%١٠٠,٠
	Yes	Count	١٦	١٩	٢١	٥٦
		%within q2	%٢٨,٦	%٣٣,٩	%٣٧,٥	%١٠٠,٠
Total		Count	٦٢	٦٦	٣٨	١٦٦
		%within q2	%٣٧,٣	%٣٩,٨	%٢٢,٩	%١٠٠,٠

The contingency coefficient value for Age & Food Difficulty was .242 ,p value was <0.006.

Bars below demonstrated this table:
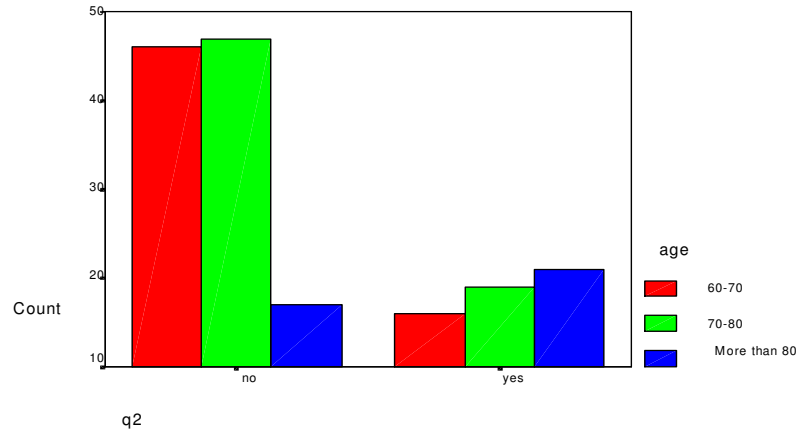
Fig (3) Age & Food Difficulty

٣٬٣٬١٬٢Age & bone problems:

To study the relationship between Age, and Bone & Joint problems, we computed the contingency coefficient for both of them ,the results were as shown in the table below.

Table14 Age & bones problems

			age			Total
			٧٠-٦٠	٨٠-٧٠	more than 80	
Bone problems Q11	No	Count	٣٨	١٨	٧	٦٣
		%within Q11	%٦٠٬٣	%٢٨٬٦	%١١٬١	%١٠٠٬٠
	Some times	Count	٣٤	٤٢	١٤	٩٠
		%within Q11	%٣٧٬٨	%٤٦٬٧	%١٥٬٦	%١٠٠٬٠
	Daily	Count	٢٢	٢٦	٢٠	٦٨
		%within Q11	%٣٢٬٤	%٣٨٬٢	%٢٩٬٤	%١٠٠٬٠
Total		Count	٩٤	٨٦	٤١	٢٢١
		%within Q11	%٤٢٬٥	%٣٨٬٩	%١٨٬٦	%١٠٠٬٠

The contingency coefficient value for Age & Bone Joints was .264, p value was <0.002.

Bars below demonstrated this table:
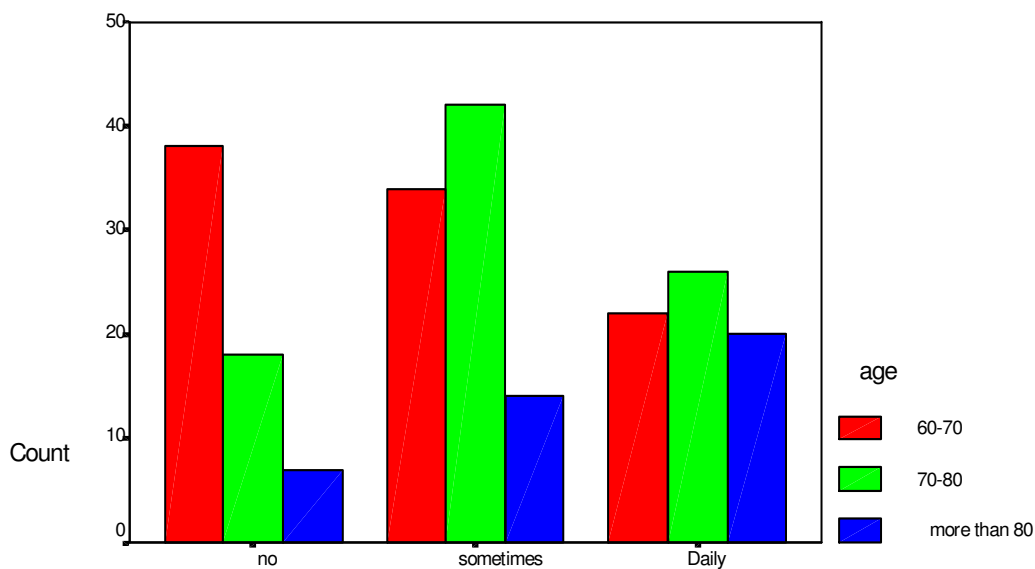
Fig (4) Age & Bones problems

٣،٣،١،١ Age & current Sport Practice:

To study the relationship between Age & sport practice ,we computed the contingency coefficient for both of them ,the results were as shown in the table below.

Table15 Age & current Sport Practice

			Age			Total
			٧٠_٦٠	٨٠_٧٠	more than 80	
Current Sport practiceQ14	No	Count	٣٣	٤٣	٢٩	١٠٥
		%within Q14	%٣١,٤	%٤١,٠	%٢٧,٦	%١٠٠,٠
	Yes	Count	٦١	٤٤	١٢	١١٧
		%within Q14	%٥٢,١	%٣٧,٦	%١٠,٣	%١٠٠,٠
Total		Count	٩٤	٨٧	٤١	٢٢٢
		%within Q14	%٤٢,٣	%٣٩,٢	%١٨,٥	%١٠٠,٠

The contingency coefficient value for Age & current sport practice was .250 ,p value was <0.001.

Bars below demonstrated this table:
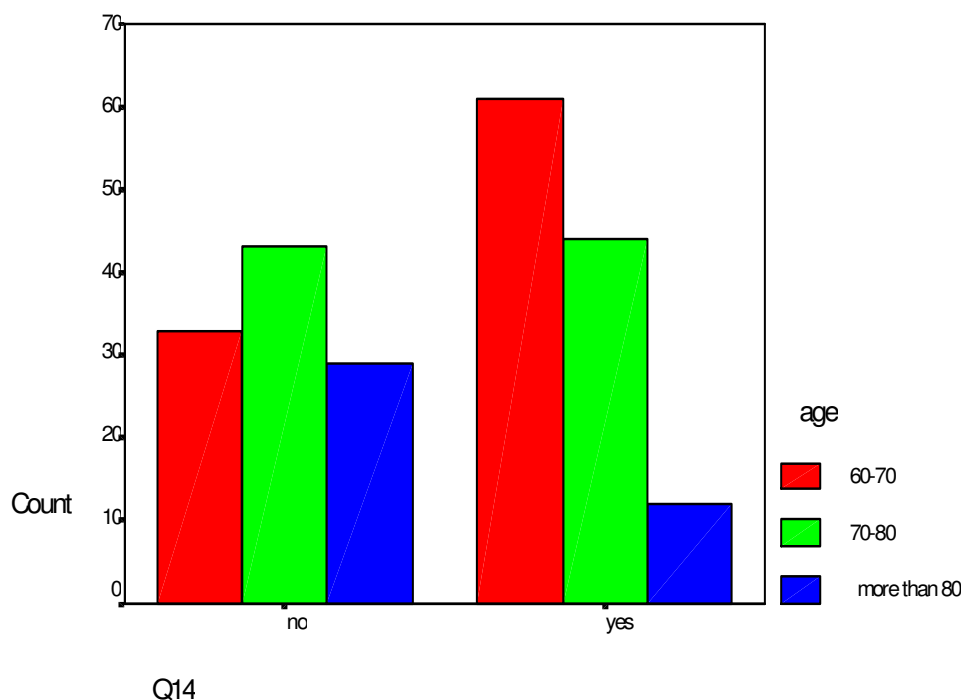
Fig (٥) Age & current sport practice

٣٬٣٬٢Place Of Living:

٣٬٣٬٢٬١Place Of Living & Milk consumption:

To study the relationship between Place Of Living & Milk consumption, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table16 Place Of Living & Milk consumption

			place of living			
			nursing house	with family	alone in home	Total
Milk Consumption Q10	No	Count	١٠	٧٥	٣٥	١٢٠
		%within Q10	%٨٬٣	%٦٢٬٥	%٢٩٬٢	%١٠٠٬٠
	Yes	Count	٢٨	٥٨	١٤	١٠٠
		%within Q10	%٢٨٬٠	%٥٨٬٠	%١٤٬٠	%١٠٠٬٠
Total		Count	٣٨	١٣٣	٤٩	٢٢٠
		%within Q10	%١٧٬٣	%٦٠٬٥	%٢٢٬٣	%١٠٠٬٠

The contingency coefficient value for place of living & milk consumption was .275 ,p value was <0.000.

Bars below demonstrated this table:
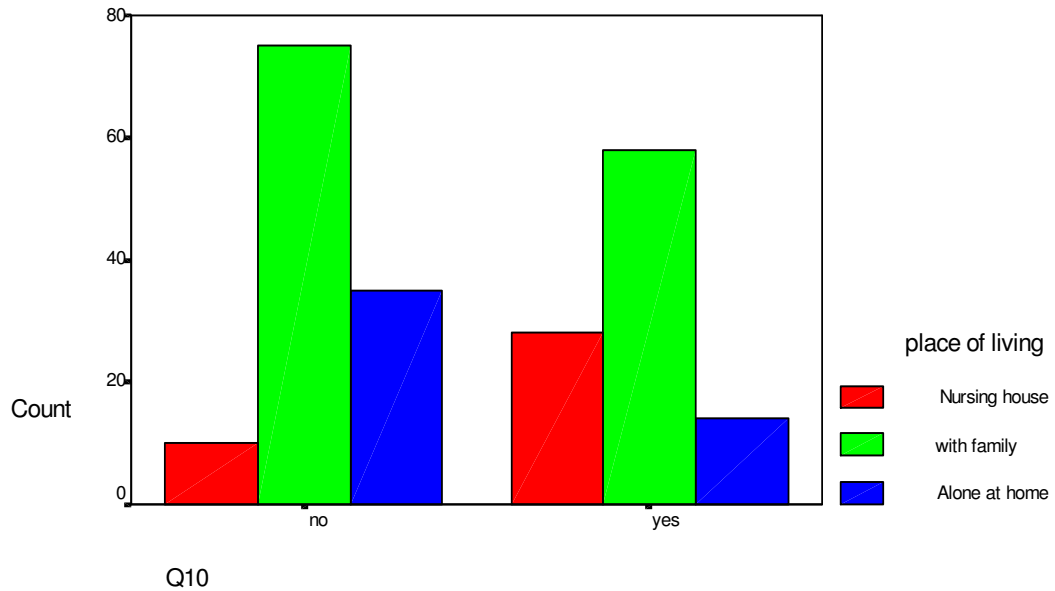
Fig (6) place of living & milk consumption

٣,٣,٢,٢ **Place Of Living & Vegetable and fruit consumption:**

To study the relationship between place of living & vegetable and fruit consumption, we compute the contingency coefficient for both of them, the results were as shown in the table below.

Table17 Place of Living & vegetable and fruit consumption

			place of living			Total
			nursing house	with family	alone in home	
Vegetable &fruit consumption Q12	no	Count	٤	١٨	١٤	٣٦
		%within Q12	%١١,١	%٥٠,٠	%٣٨,٩	%١٠٠,٠
	yes	Count	٣٤	١١٥	٣٦	١٨٥
		%within Q12	%١٨,٤	%٦٢,٢	%١٩,٥	%١٠٠,٠
Total		Count	٣٨	١٣٣	٥٠	٢٢١
		%within Q12	%١٧,٢	%٦٠,٢	%٢٢,٦	%١٠٠,٠

The contingency coefficient value for place of living & vegetable and fruit consumption was .171, p value was <0.035.

Bars below demonstrated this table:
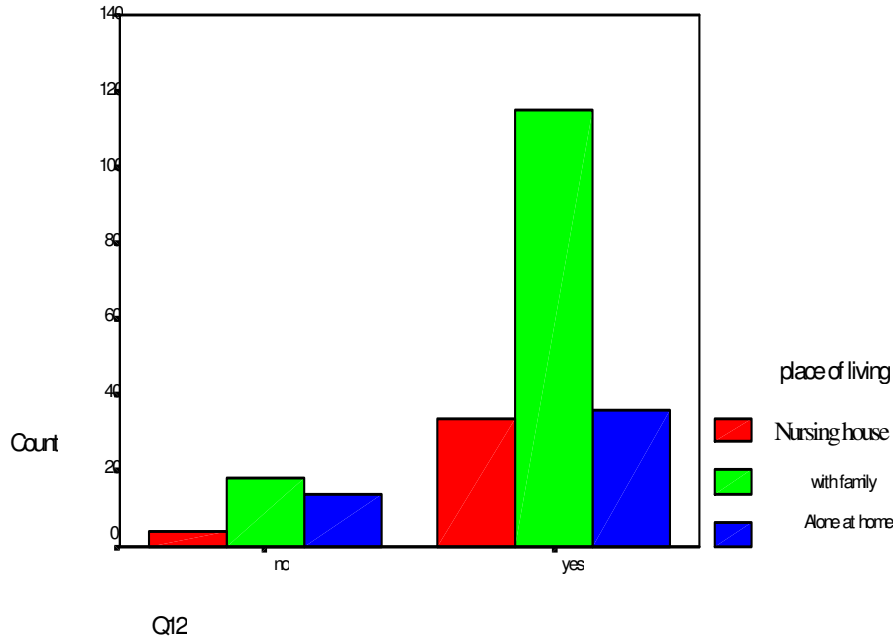
Fig (7) place of living & vegetable and fruit consumption

٣,٣,٢,٣ Place Of Living & current Sport Practice

To study the relationship between place of living & current sport practice, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table18 Place Of Living & Sport Practice

			place of living			Total
			nursing house	with family	alone in home	
Current Sport practice Q14	No	Count	٢٨	٥٠	٢٧	١٠٥
		%within Q14	%٢٦,٧	%٤٧,٦	%٢٥,٧	%١٠٠,٠
	yes	Count	١٠	٨٣	٢٣	١١٦
		%within Q14	%٨,٦	%٧١,٦	%١٩,٨	%١٠٠,٠
Total		Count	٣٨	١٣٣	٥٠	٢٢١
		%within Q14	%١٧,٢	%٦٠,٢	%٢٢,٦	%١٠٠,٠

The contingency coefficient value for place of living & current sport practice was .264 ,p value was <0.000.

Bars below demonstrated this table:
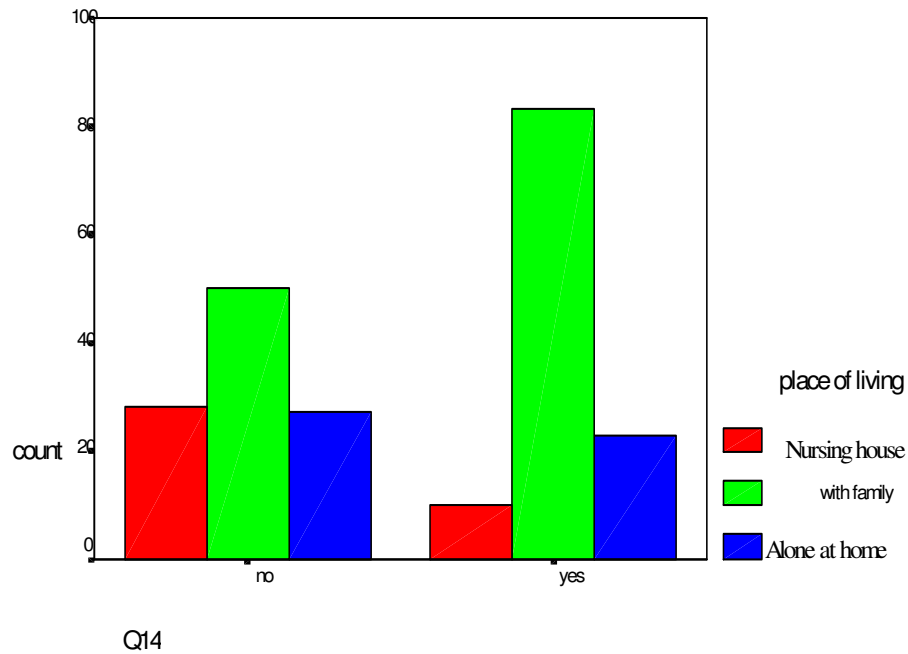
Fig (8) place of living & sport practice

٣,٣,٢,٤ **Place Of Living & Fat and Sweet consumption:**

To study the relationship between place of living & fat and sweet consumption, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table19 Place Of Living & Fat and sweet consumption

			place of living			Total
			nursing house	with family	alone in home	
Fat and sweet consumption Q17	no	Count	٤	٥٥	٢٣	٨٢
		%within Q17	%٤,٩	%٦٧,١	%٢٨,٠	%١٠٠,٠
	yes	Count	٣٤	٧٧	٢٧	١٣٨
		%within Q17	%٢٤,٦	%٥٥,٨	%١٩,٦	%١٠٠,٠
Total		Count	٣٨	١٣٢	٥٠	٢٢٠
		%within Q17	%١٧,٣	%٦٠,٠	%٢٢,٧	%١٠٠,٠

The contingency coefficient value for place of living & fat and sweet consumption was .247 ,p value was <0.001.

Bars below demonstrated this table:
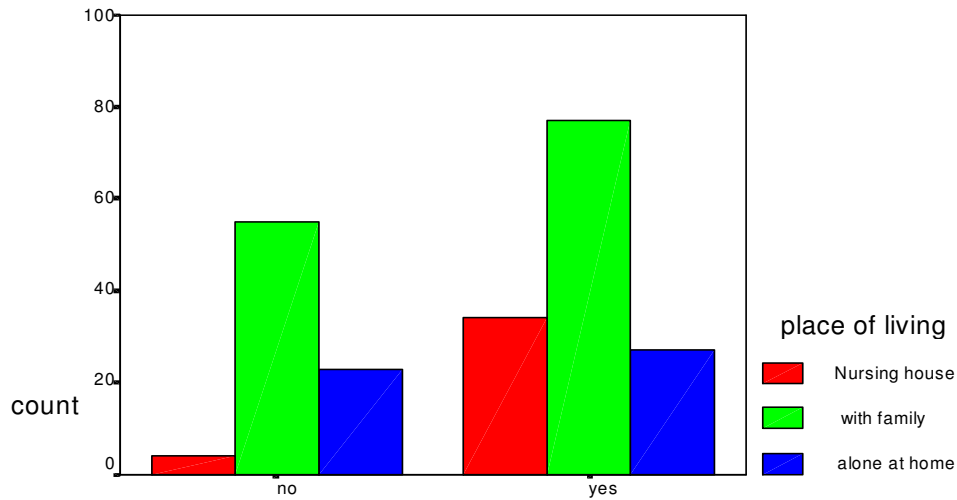
Q17

Fig (9) place of living & Fat-sweet consumption

٣,٣,٣ Gender :

٣,٣,٣,١Gender & smoking:

To study the relationship between gender & smoking, we computed the contingency coefficient for both of them; the results were as shown in the table below.

Table 20 Gender & Smoking

			gender		Total
			male	female	
Smoking Q6	no	Count	٦٢	١١٨	١٨٠
		%within Q6	%٣٤,٤	%٦٥,٦	%١٠٠,٠
	yes	Count	٢٨	١٤	٤٢
		%within Q6	%٦٦,٧	%٣٣,٣	%١٠٠,٠
Total		Count	٩٠	١٣٢	٢٢٢
		%within Q6	%٤٠,٥	%٥٩,٥	%١٠٠,٠

The contingency coefficient value for gender & smoking was 0.249, p value was <0.000.

Bars below demonstrated this table:

Fig (10) gender & smoking

٣,٣,٣,٢ Gender & Past Sports practice:

To study the relationship between gender & past sport practice, we computed the contingency coefficient for both of them; the results were as shown in the table below.

Table21 Gender & Past Sport practice

			Gender		Total
			male	female	
Past Sport practice Q13	no	Count	٥٣	٩٩	١٥٢
		%within Q13	%٣٤,٩	%٦٥,١	%١٠٠,٠
	yes	Count	٣٧	٣١	٦٨
		%within Q13	%٥٤,٤	%٤٥,٦	%١٠٠,٠
Total		Count	٩٠	١٣٠	٢٢٠
		%within Q13	%٤٠,٩	%٥٩,١	%١٠٠,٠

The contingency coefficient value for gender & past sport practice was 0.181 ,p value was <0.006.

Bars below demonstrated this table:

Fig (11) gender & past sport practice

٣٫٣٫٤ Income:

٫٣٫٣٫٤٫١ Income & smoking:

To study the relationship between income & smoking, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table 22 Income & Smoking

			income		Total
			yes	no	
SmokingQ6	no	Count	١٤٦	٣٢	١٧٨
		%within Q6	٨٢٫٠%	%١٨٫٠	%١٠٠٫٠
	yes	Count	٢٥	١٧	٤٢
		%within Q6	٥٩٫٥%	%٤٠٫٥	%١٠٠٫٠
Total		Count	١٧١	٤٩	٢٢٠
		%within Q6	٧٧٫٧%	%٢٢٫٣	%١٠٠٫٠

The contingency coefficient value for Income & smoker was 0.142 ,p value was <0.033.

Bars below demonstrated this table:
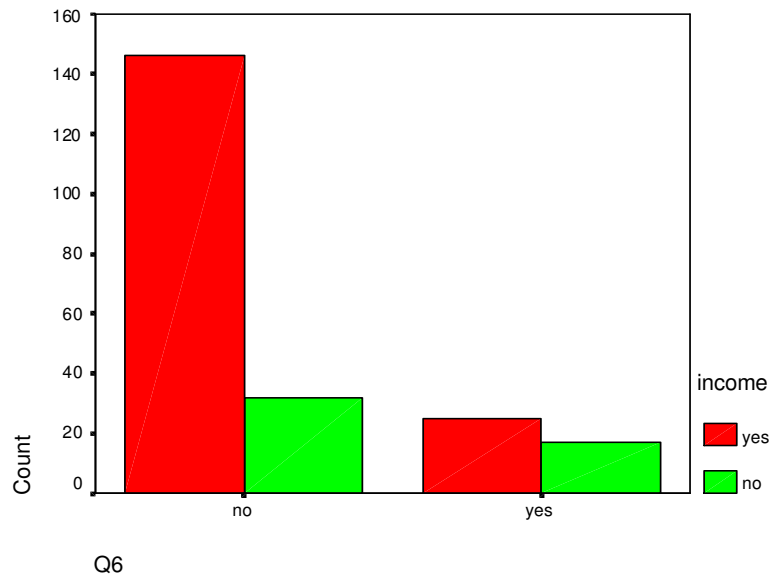
Fig (12) income & smoking

.٣,٣,٤,٢Income & Milk Consumption:

To study the relationship between income & milk consumption ,we computed the contingency coefficient for both of them ,the results were as shown in the table below.

Table23 Income & milk consumption

			income		Total
			Yes	no	
milk consumption Q10	No	Count	١٠٧	١٣	١٢٠
		%within Q10	%٨٩,٢	%١٠,٨	%١٠٠,٠
	yes	Count	٦٣	٣٥	٩٨
		%within Q10	%٦٤,٣	%٣٥,٧	%١٠٠,٠
Total		Count	١٧٠	٤٨	٢١٨
		%within Q10	%٧٨,٠	%٢٢,٠	%١٠٠,٠

The contingency coefficient value for Income & milk consumption was 0.286, p value was <0.000.

Bars below demonstrated this table:
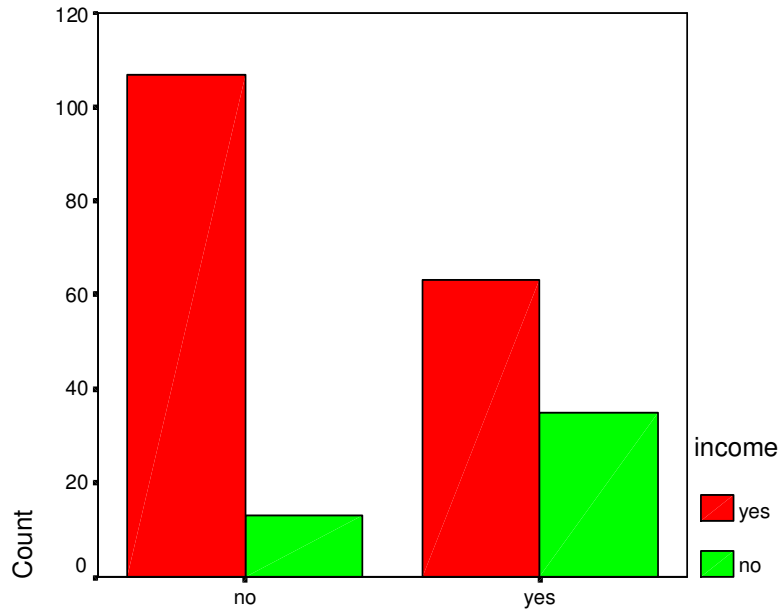
Q10

Fig (13) income & milk consumption

٣,٤,٣ .٣Income & Past Sport practice:

To study the relationship between income & past sport practice, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table24 Income & past sport practice

			Income		Total	
			Yes	no		
Past sport practice Q13	No	Count	١٣٦	١٥	١٥١	
		%within Q13	%٩٠,١	%٩,٩	%١٠٠,٠	
	Yes	Count	٣٤	٣٣	٦٧	
		%within Q13	%٥٠,٧	%٤٩,٣	%١٠٠,٠	
Total		Count	١٧٠	٤٨	٢١٨	
		%within Q13	%٧٨,٠	%٢٢,٠	%١٠٠,٠	

The contingency coefficient value for Income & past sport practice was 0.401, p value was <0.000.

Bars below demonstrated this table:

Q13

Fig (14) income & past sport practice
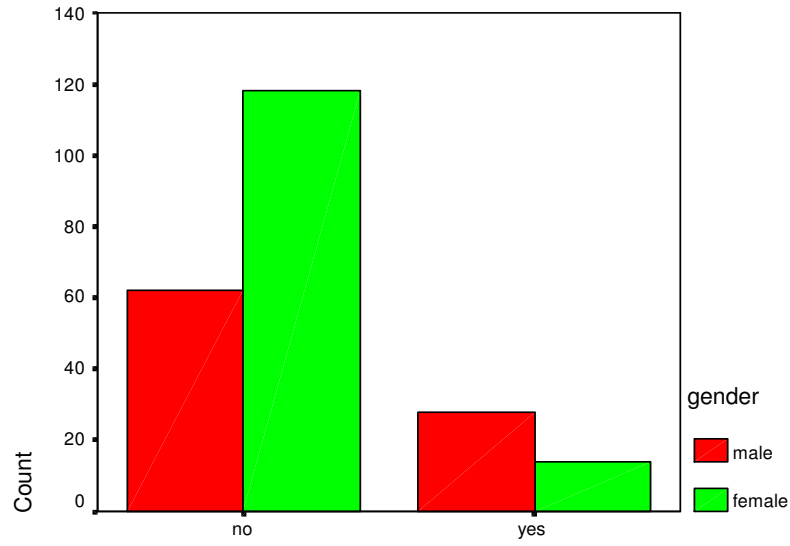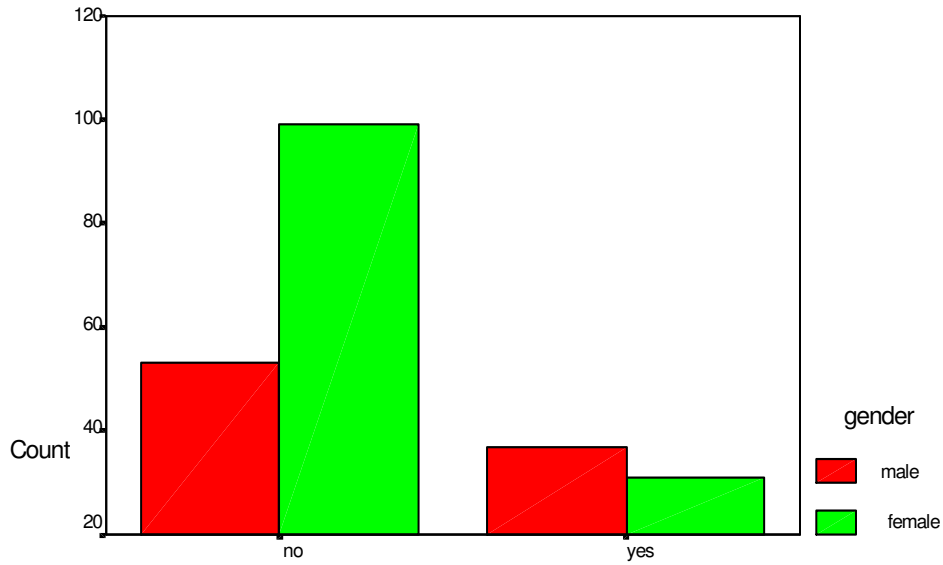
٣,٣,٤,٤Income & current Sport Practice:

To study the relationship between income & sport practice ,we computed the contingency coefficient for both of them ,the results were as shown in the table below.

Table25 Income & sport practice

			income		Total
			Yes	no	
Current Sport practice Q14	No	Count	٩٠	١٣	١٠٣
		%within Q14	%٨٧,٤	%١٢,٦	%١٠٠,٠
	Yes	Count	٨٠	٣٦	١١٦
		%within Q14	%٦٩,٠	%٣١,٠	%١٠٠,٠
Total		Count	١٧٠	٤٩	٢١٩
		%within Q14	%٧٧,٦	%٢٢,٤	%١٠٠,٠

The contingency coefficient value for Income & current sport practice was 0.215 ,p value was <0.001.

Bars below demonstrated this table:

Fig (15) income & sport practice

٣,٣,٥ Education level:

٣,٣,٥,١ Education level & Milk consumption:

To study the relationship between education level & milk consumption, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table26 Educational level & milk consumption

			Education level			Total
			No education	basic	high education	
Milk consumption Q10	no	Count	٧٣	٣٩	٨	١٢٠
		%within Q10	%٦٠,٨	%٣٢,٥	%٦,٧	%١٠٠,٠
	yes	Count	٣٥	٣٥	٣٠	١٠٠
		%within Q10	%٣٥,٠	%٣٥,٠	%٣٠,٠	%١٠٠,٠
Total		Count	١٠٨	٧٤	٣٨	٢٢٠
		%within Q10	%٤٩,١	%٣٣,٦	%١٧,٣	%١٠٠,٠

The contingency coefficient value for education level & milk consumption was 0.318,p value was <0.000.

Bars below demonstrated this table:
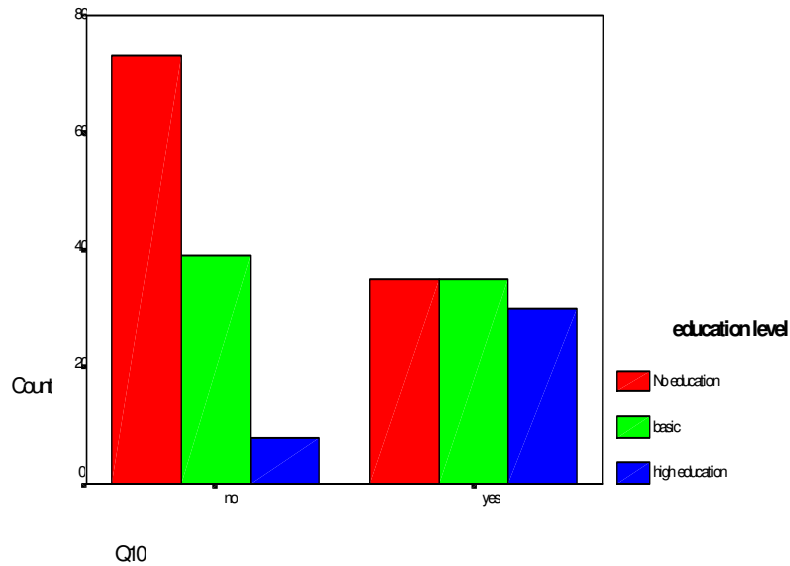
Fig (16) Education level & milk consumption

٣,٣,٥,٢ Education level & Bone and Joint problems:

To study the relationship between education level & bone and joint problems, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table27 Education Level & Bone & Joint problems

			education level			Total
			No education	basic	high education	
Bones & Joints problems Q11	No	Count	١٨	٢٣	٢٢	٦٣
		%within Q11	%٢٨,٦	%٣٦,٥	%٣٤,٩	%١٠٠,٠
	Someti mes	Count	٤٨	٣٠	١١	٨٩
		%within Q11	%٥٣,٩	%٣٣,٧	%١٢,٤	%١٠٠,٠
	Daily	Count	٤١	٢١	٦	٦٨
		%within Q11	%٦٠,٣	%٣٠,٩	%٨,٨	%١٠٠,٠
Total		Count	١٠٧	٧٤	٣٩	٢٢٠
		%within Q11	%٤٨,٦	%٣٣,٦	%١٧,٧	%١٠٠,٠

The contingency coefficient value for education level & bones joints was 0.307, p value was <0.000.

Bars below demonstrated this table:
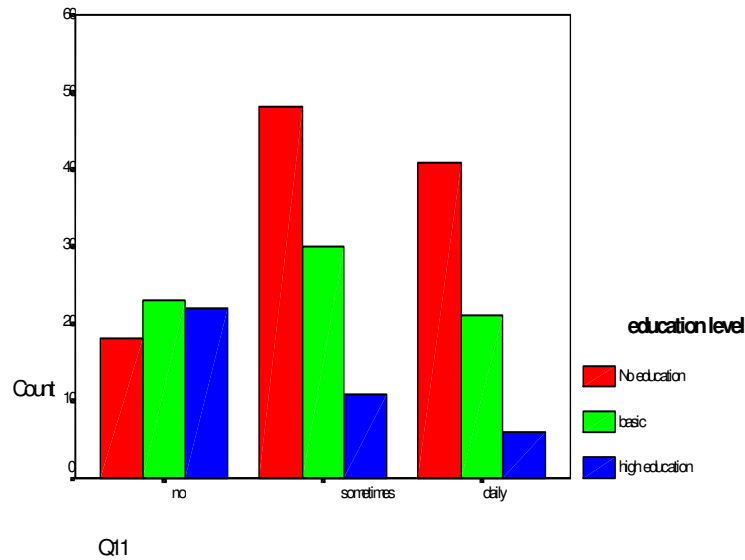
Fig (17) education level & bones and joints problems

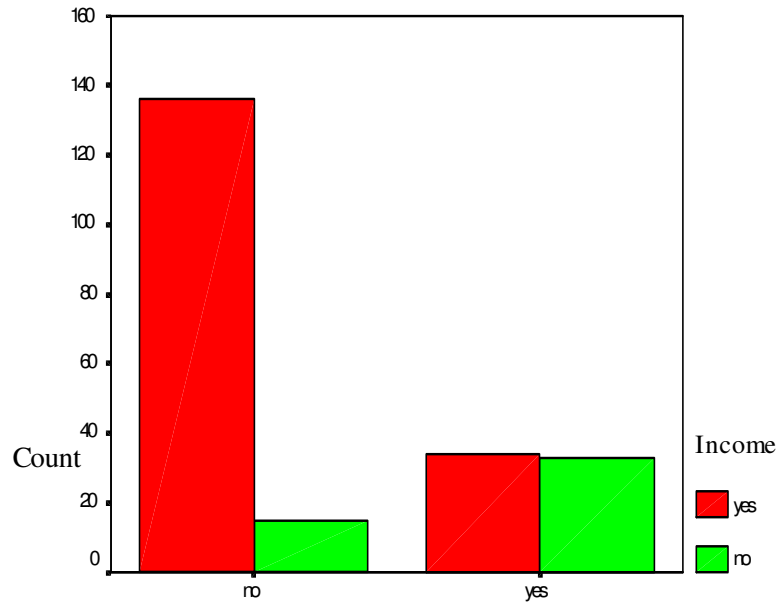**٣,٣,٥,٣ Education level & Past Sport practice:**

To study the relationship between education level & past sport practice, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table28 Educational level & past sport practice

			education level			Total
			No education	basic	high education	
Past sport practice Q13	no	Count	٨٩	٥٣	١٠	١٥٢
		%within Q13	%٥٨,٦	%٣٤,٩	%٦,٦	%١٠٠,٠
	yes	Count	١٨	٢١	٢٩	٦٨
		%within Q13	%٢٦,٥	%٣٠,٩	%٤٢,٦	%١٠٠,٠
Total		Count	١٠٧	٧٤	٣٩	٢٢٠
		%within Q13	%٤٨,٦	%٣٣,٦	%١٧,٧	%١٠٠,٠

The contingency coefficient value for education level & past sport practice was 0.411 ,p value was <0.000

Bars below demonstrated this table:
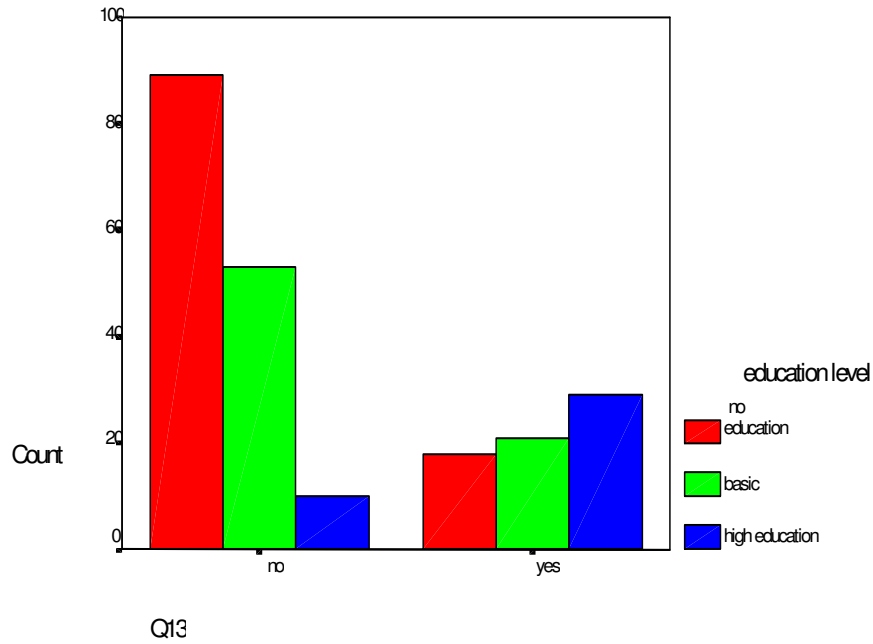
Fig   (18) education level & past sport practice

 ٣,٣,٦ **B.M.I Categorized:**

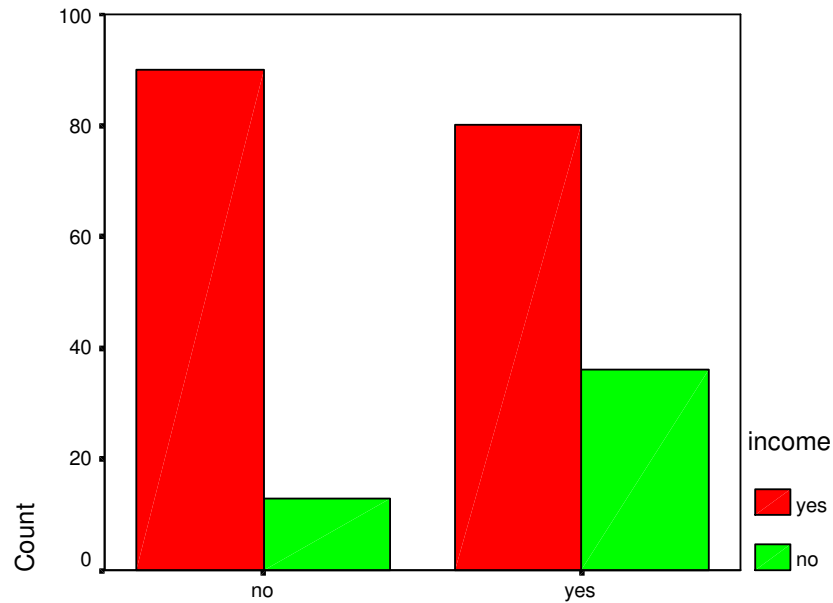 ٣,٣,٦,١ **B.M.I Categorized & smoking:**

To study the relationship between B.M.I categorized & smoker we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table29 B.M.I Categorized & smoking

			B.M.I categorized					
			Under weight less than 20	normal weight 20-24.9	over weight 25-29.9	clearly over weight(3 0-40)	Obese more than 40	**Total**
smoker Q6	no	Count	١	١٤	٥٥	٢٥	٧	١٠٢
		%within Q6	%١,٠	%١٣,٧	%٥٣,٩	%٢٤,٥	%٦,٩	%١٠٠,٠
	yes	Count		٩	٦	٨	١	٢٤
		%within Q6		%٣٧,٥	%٢٥,٠	%٣٣,٣	%٤,٢	%١٠٠,٠
Total		Count	١	٢٣	٦١	٣٣	٨	١٢٦
		%within Q6	0.8%	%١٨,٣	%٤٨,٤	%٢٦,٢	%٦,٣	%١٠٠,٠

The contingency coefficient value for   B.M.I categorized &smoking was 0.276 ,p value was <0.024.

Bars below demonstrated this table:
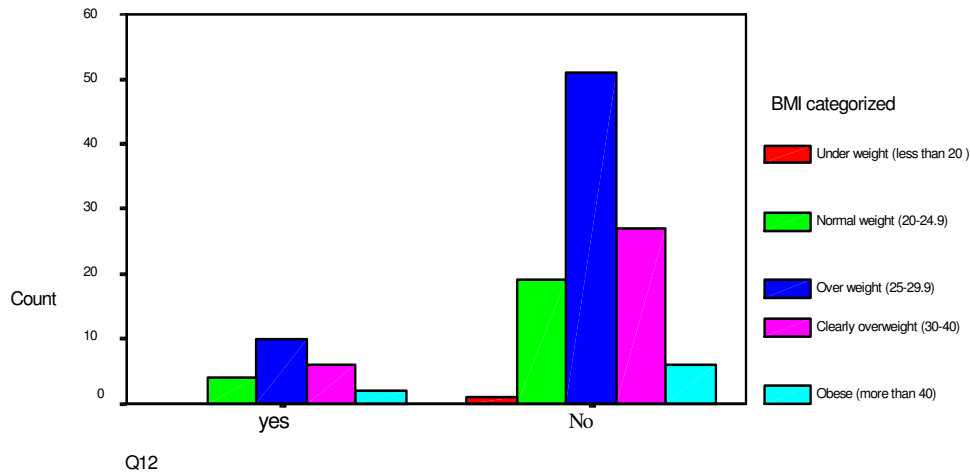
Fig (19) B.M.I categorized &smoking

٣,٣,٦,٢ B.M.I Categorized & Vegetable and fruit consumption:

To study the relationship between B.M.I categorized & vegetable and fruit consumption, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table30 B.M.I Categorized & Vegetable and fruit consumption

			B.M.I categorized					
			Under weight less than 20	normal weight ٢٠- ٢٤,٩	over weight ٢٥- ٢٩,٩	clearly over weight (٣٠-٤٠)	Obese more than 40	Total
Vegetable and fruit Q12	no	Count		٤	١٠	٦	٢	٢٢
		%within Q12		%١٨,٢	%٤٥,٥	%٢٧,٣	%٩,١	%١٠٠,٠
	yes	Count	١	١٩	٥١	٢٧	٦	١٠٤
		%within Q12	%١,٠	%١٨,٣	%٤٩,٠	%٢٦,٠	%٥,٨	%١٠٠,٠
Total		Count	١	٢٣	٦١	٣٣	٨	١٢٦
		%within Q12	0.8%	%١٨,٣	%٤٨,٤	%٢٦,٢	%٦,٣	%١٠٠,٠

The contingency coefficient value for B.M.I categorized & vegetable and fruit consumption was 0.068 ,p value was>0.964.

Bars below demonstrated this table:

Fig (20) B.M.I categorized & vegetable and fruit consumption

٣,٣,٦,٣ B.M.I Categorized & current Sport Practice:

To study the relationship between B.M.I categorized & current sport practice we computed the contingency coefficient for both of them ,the results were as shown in the table below.

Table31 B.M.I Categorized & Sport practice

| | | | \multicolumn{5}{c}{B.M.I categorized} | Total |
			Under weight less than 20	normal weight (٢٠- ٢٤,٩)	over weight (٢٥- ٢٩,٩)	clearly over weight (٣٠-٤٠)	obese more than 40	
Current Sport practice Q14	no	Count		٦	٢٣	١١	٤	٤٤
		%within Q14		%١٣,٦	%٥٢,٣	%٢٥,٠	%٩,١	١٠٠,٠%
	yes	Count	١	١٧	٣٨	٢٢	٤	٨٢
		%within Q14	%١,٢	%٢٠,٧	%٤٦,٣	%٢٦,٨	%٤,٩	١٠٠,٠%
Total		Count	١	٢٣	٦١	٣٣	٨	١٢٦
		%within Q14	%٨.	%١٨,٣	%٤٨,٤	%٢٦,٢	%٦,٣	١٠٠,٠%

The contingency coefficient value for B.M.I categorized & sport practice was 0.136 ,p value was>0.668.

Bars below demonstrated this table:
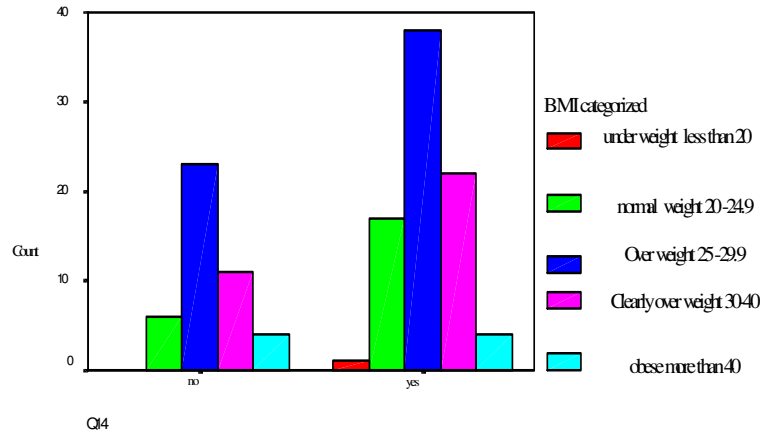
Fig (21) B.M.I categorized & current sport practice

3.3.6.4 B.M.I Categorized & Fat and Sweet consumption:

To study the relationship between B.M.I categorized & fat and sweet consumption we computed the contingency coefficient for both of them ,the results were as shown in the table below.

Table32 B.M.I Categorized & Fat and sweet consumption

			B.M.I categorized				
			Under weight less than 20	normal weight 20-24.9	over weight 25-29.9	clearly over weight 30-40	Obese more than 40	Total
Fat and sweet Q17	no	Count		١٢	٢٥	١٥	١	٥٣
		%within Q17		%٢٢,٦	%٤٧,٢	%٢٨,٣	%١,٩	%١٠٠,٠
	yes	Count	١	١١	٣٦	١٨	٧	٧٣
		%within Q17	%١,٤	%١٥,١	%٤٩,٣	%٢٤,٧	%٩,٦	%١٠٠,٠
Total		Count	١	٢٣	٦١	٣٣	٨	١٢٦
		%within Q17	0.8%	%١٨,٣	%٤٨,٤	%٢٦,٢	%٦,٣	%١٠٠,٠

The contingency coefficient value for B.M.I categorized fat and sweet was 0.190 ,p value was>0.315.

Bars below demonstrated this table:

Q17
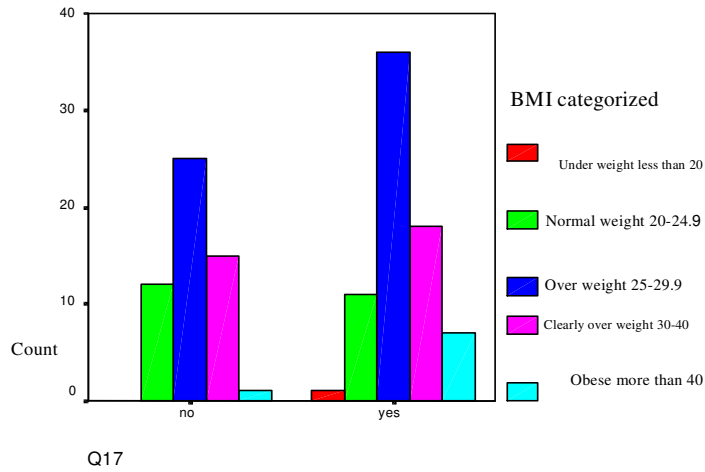
Fig (22) B.M.I categorized & fat and sweet consumption

٣,٣,٧ Constipation:
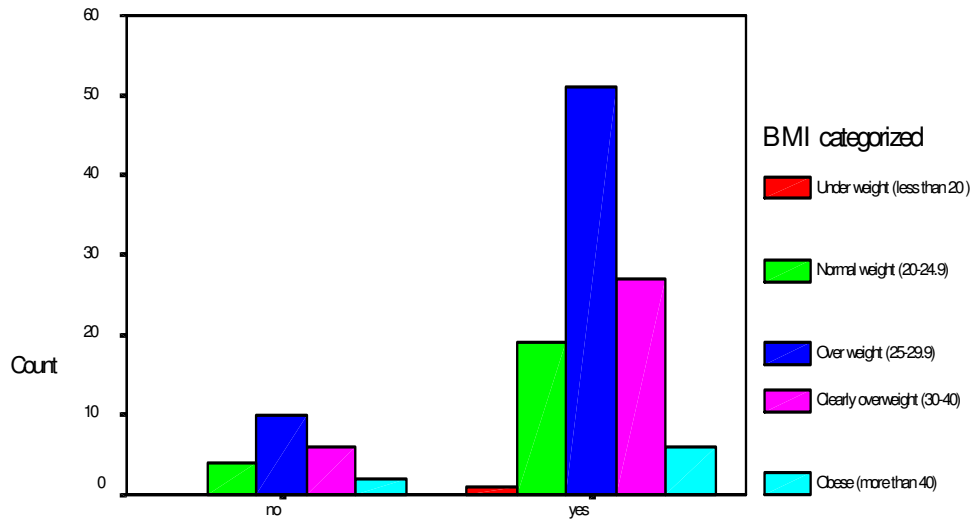
٣,٣,٧,١Constipation & Vegetable and fruit consumption:

To study the relationship between constipation & vegetable and fruit consumption we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table33 Constipation & Vegetable and fruit consumption

			Q12		Total
			no	Yes	
Q15	no	Count	١٣	١٢٨	١٤١
		%within Q15	%٩,٢	%٩٠,٨	%١٠٠,٠
	yes	Count	٢٣	٥٨	٨١
		%within Q15	%٢٨,٤	%٧١,٦	%١٠٠,٠
Total		Count	٣٦	١٨٦	* ٢٢٢
		%within Q15	%١٦,٢	%٨٣,٨	%١٠٠,٠

*1 missing

The contingency coefficient value constipation & vegetable and fruit consumption was 0.243, p value was<0.000.

Bars below demonstrated this table:
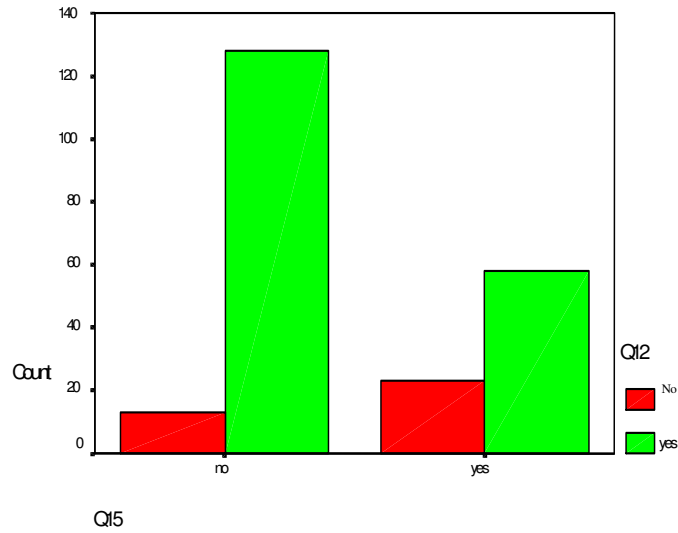
Fig (23) constipation & vegetable and fruit consumption

٣.٣.٧.٢ Constipation & Fat and sweet consumption:

To study the relationship between constipation & fat and sweet consumption, we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table34 Constipation & Fat and sweet consumption

			Q17		Total
			No	Yes	
Q15	no	Count	٥٦	٨٥	١٤١
		%within Q15	%٣٩٫٧	%٦٠٫٣	%١٠٠٫٠
	yes	Count	٢٧	٥٣	٨٠
		%within Q15	%٣٣٫٨	%٦٦٫٣	%١٠٠٫٠
Total		Count	٨٣	١٣٨	*٢٢١
		%within Q15	%٣٧٫٦	%٦٢٫٤	%١٠٠٫٠

*2 cases missing

The contingency coefficient value for constipation & Fat and sweet consumption was 0.059 ,p value was>0.379.

Bars below demonstrated this table:

Fig (24) constipation & fat and sweet consumption

3.3.8 Chronic medical diseases:

٣,٣,٨,١ Chronic diseases & Vegetable and Fruit consumption:

To study the relationship between diseases & vegetable and fruit consumption we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table35 Diseases & vegetable and fruit consumption

			vegetable and fruit		Total
			No	yes	
Diseases	Hypertension	Count	٢	١٠	١٢
		%within q18	%١٦,٧	%٨٣,٣	%١٠٠,٠
	Diabetes	Count	١	١٦	١٧
		%within q18	%٥,٩	%٩٤,١	%١٠٠,٠
	Heart diseases	Count	١	٢	٣
		%within q18	%٣٣,٣	%٦٦,٧	%١٠٠,٠
	Stomach diseases	Count	١	١١	١٢
		%within q18	%٨,٣	%٩١,٧	%١٠٠,٠
	Breathing diseases	Count		٣	٣
		%within q18		%١٠٠,٠	%١٠٠,٠
	Bone diseases	Count	١	٨	٩
		%within q18	%١١,١	%٨٨,٩	%١٠٠,٠
	More than one disease	Count	٢٦	٩٩	١٢٥
		%within q18	%٢٠,٨	%٧٩,٢	%١٠٠,٠
Total		Count	٣٢	١٤٩	١٨١
		%within q18	%١٧,٧	%٨٢,٣	%١٠٠,٠

The total is 181 which represents all case that have chronic disease.

The contingency coefficient value diseases & vegetable and fruit was 0.158, p value was>0.595.

Bars below demonstrated this table:
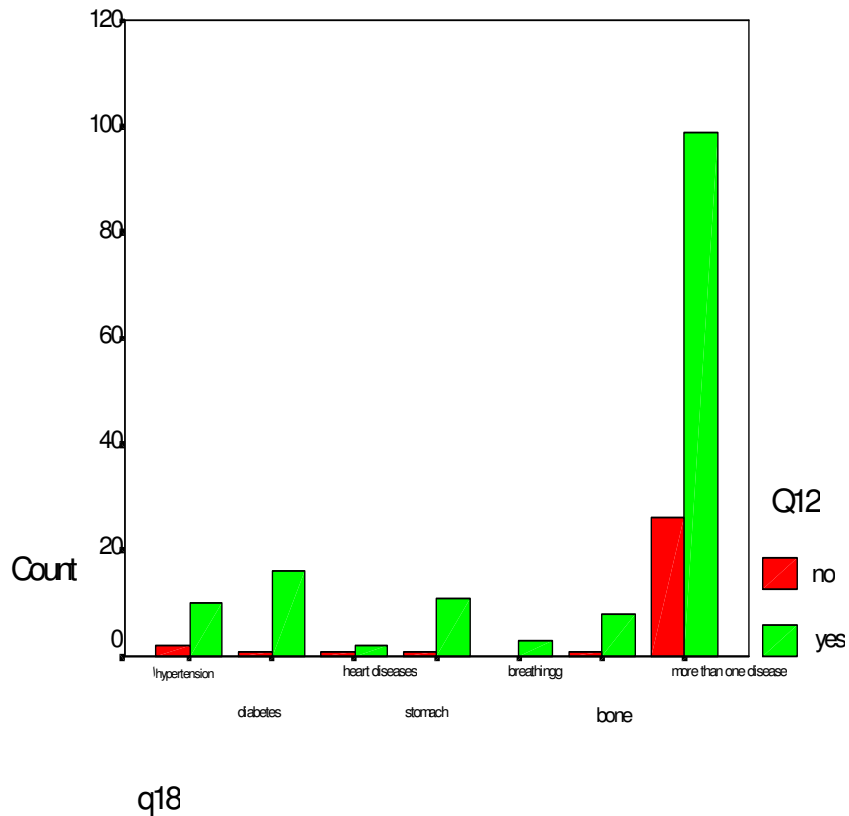
Fig (25) diseases & vegetable and fruit consumption

٣,٣,٨,٢ Chronic diseases & Fat and sweet consumption:

To study the relationship between diseases & fat and sweet consumption we compute the contingency coefficient for both of them, the results were as shown in the table below.

Table 36 Diseases & Fat and sweet consumption

			Q17		Total
			no	yes	
Q18	Hypertension	Count	٣	٩	١٢
		%within q18	%٢٥,٠	%٧٥,٠	%١٠٠,٠
	Diabetes	Count	٧	١٠	١٧
		%within q18	%٤١,٢	%٥٨,٨	%١٠٠,٠
	Heart diseases	Count	١	٢	٣
		%within q18	%٣٣,٣	%٦٦,٧	%١٠٠,٠
	Stomach diseases	Count	٤	٧	١١
		%within q18	%٣٦,٤	%٦٣,٦	%١٠٠,٠
	Breathing diseases	Count	١	٢	٣
		%within q18	%٣٣,٣	%٦٦,٧	%١٠٠,٠
	Bones diseases	Count	١	٨	٩
		%within q18	%١١,١	%٨٨,٩	%١٠٠,٠
	More than one disease	Count	٥١	٧٤	١٢٥
		%within q18	%٤٠,٨	%٥٩,٢	%١٠٠,٠
Total		Count	٦٨	١١٢	١٨٠
		%within q18	%٣٧,٨	%٦٢,٢	%١٠٠,٠

The contingency coefficient value diseases & Fat and sweet consumption was 0.151, p value was>0.652.

Bars below demonstrated this table:
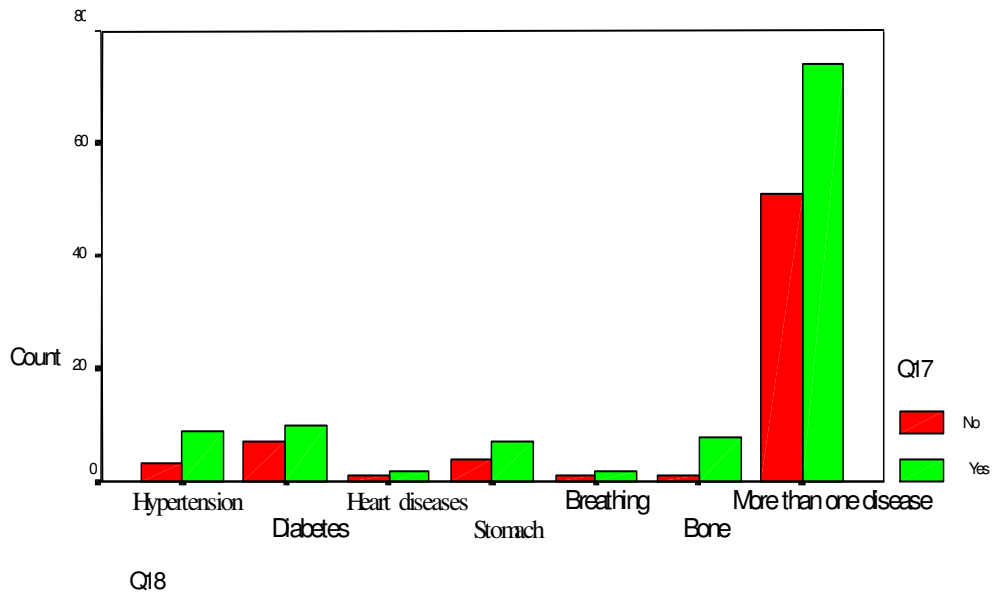
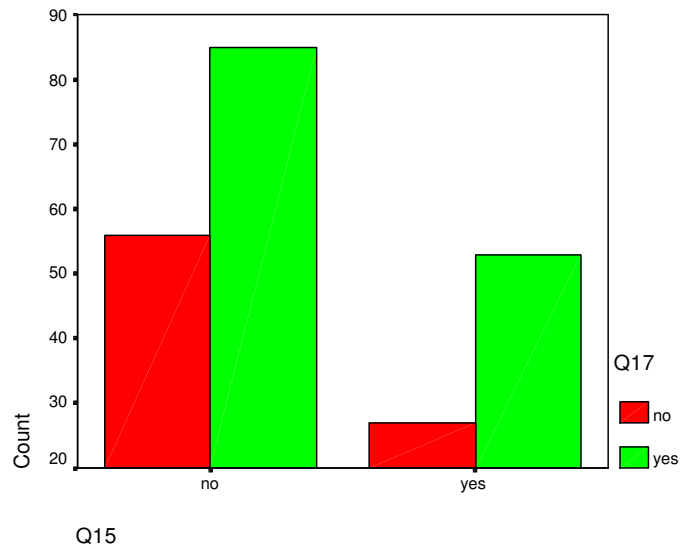**Fig (26) diseases & fat and sweet consumption**

٣,٣,٩ Chronic medication use:

٣,٣,٩,١ Medication use & Vegetable and fruit consumption:

To study the relationship between Medication use & Vegetable and fruit consumption we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table37 Medication use & Vegetable and fruit consumption

			Q12		Total
			no	Yes	
Q19	no	Count	٦	٥٣	٥٩
		%within Q19	%١٠,٢	%٨٩,٨	%١٠٠,٠
	Yes	Count	٣٠	١٣٣	١٦٣
		%within Q19	%١٨,٤	%٨١,٦	%١٠٠,٠
Total		Count	٣٦	١٨٦	٢٢٢
		%within Q19	%١٦,٢	%٨٣,٨	%١٠٠,٠

The contingency coefficient value of Medication & Vegetable and fruit consumption was 0.0.098 ,p value was>0.141.

Bars below demonstrated this table:
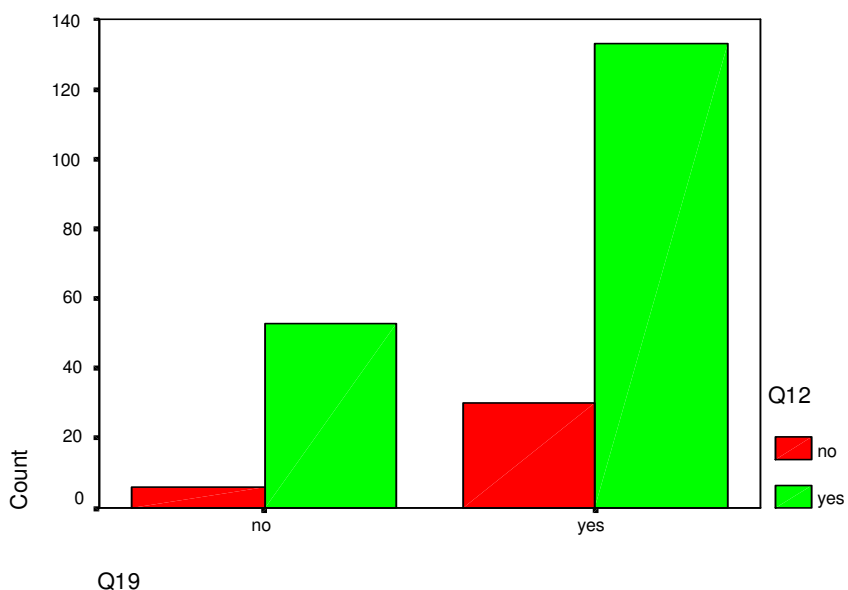
Fig (27) medication & Vegetable and fruit consumption

٣,٣,٩,٢   Medication use & Fat and sweet consumption

To study the relationship between Medication use & Fat and sweet consumption we computed the contingency coefficient for both of them, the results were as shown in the table below.

Table38 Medicament & Fat and sweet consumption

			Q17		Total
			No	Yes	
Q19	no	Count	٢٢	٣٧	٥٩
		%within Q19	٣٧,٣%	٦٢,٧%	١٠٠,٠%
	yes	Count	٦١	١٠١	١٦٢
		%within Q19	٣٧,٧%	٦٢,٣%	١٠٠,٠%
Total		Count	٨٣	١٣٨	٢٢١
		%within Q19	٣٧,٦%	٦٢,٤%	١٠٠,٠%

The contingency coefficient value Medication & Fat and sweet consumption was 0.003 ,p value was>0.960.

Bars below demonstrated this table:
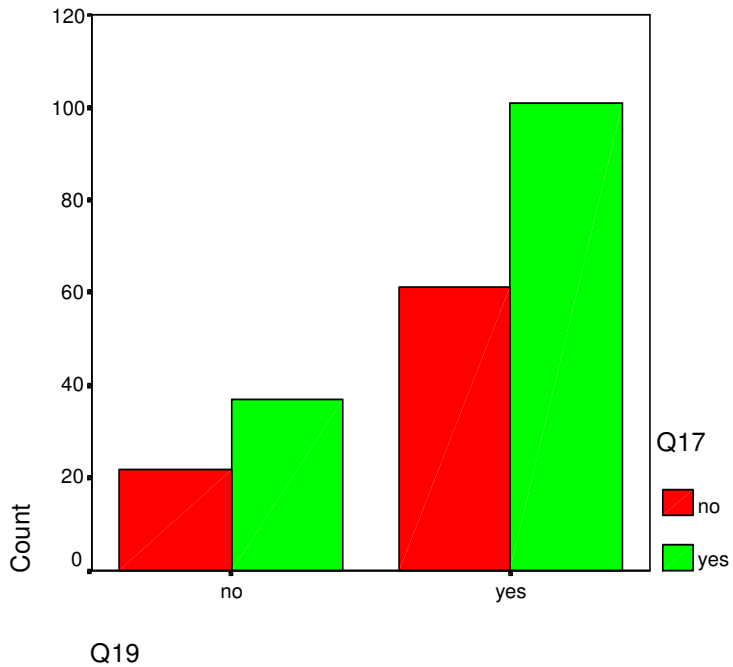
Fig (٢٨) medication & fat and sweet consumption

Chapter Four

Discussion

4. Discussion

This study was conducted to know the nutrition status and the possible risk factors that may affect it among Nablus city elderly people.

4.1 Social profile:

The results of the first part of the questionnaire showed the social and demographic profile of the study sample in terms of gender, age, residence, education, and income. Analyzing our results and comparing them with relevant literature shows the following:

4.1.1 Gender:

In our study the percentage of females were alittle bit more than males (59.2 % were females), this may be explained by the significant differences in life expectancy of women and men. In the developed nations of the world, women live on average six to eight years longer than men do. (Fact sheet, WHO 2000).The over all percentage of elderly in Palestinian Territories was 40085 for males and 50134 for females (2002 world population data sheet).

4.1.2 Age:

Most of the elders in the study sample were in 60-70 years of age (42.2%) ،followed by 70-80 years group (39.5%) and finally those who were more than 80 (18.4%). This result reflects the life expectancy at birth (years) in the world for male which is 65 and for females which is 69(world population data sheet, 2002)

4.1.3 Residence

The lowest percent of the elders in the study sample was for those who live in the nursing home (17.5%), and the highest percent was for those who live with their families (59.6%). This reflects our traditional and religious values that emphasize the importance of home elderly care.

4.1.4 Education of the study sample

We found that almost half of study sample (48.9 %) had no education, followed by basic education level (33.2%) and the lowest percent had high education (17.5%). This is a sample that reflects the opportunities of education in the past where most of old people either didn't have education or had only basic education level.

4.1.5 Income

Majority of study sample (76.7%) had some kind of income, but the wages differ from one to another.We found that only 2.2% of the study population had monthly income more than 400JD, 23.3% had 200-400JD, 28.3%had less than 200JD, while 31.4% had less than 100JD, and worst of all (22% of the sample were without any basic income).This reflects the poverty of elders in Palestine.

According to PCBS The average household's monthly expenditure in the West Bank is (JD 576), of which (JD 236) are spent on food, in North West Bank (JD 492), of which (JD 195) are spent on food, and the average household's monthly consumption in the West Bank is (JD 634), of which

(JD 246) are spent on food, in North West Bank (JD 545), of which (JD 206) are spent on food.(PCBS,1998)

Also according to PCBS report about the poverty in Palestine,we see that the elderly are the most vulnerable; Of the total heads of households aged 65 and above, 16.1% in deep poverty "deep (absolute) poverty line," was calculated to reflect a budget for food, clothing and housing, and 25.2% are poor "relative poverty line" adds other necessities including health care, education, transportation, personal care, and housekeeping supplies, indicating that the elderly are the most vulnerable relative to other age strata (PCBS, 1998).

The effect of income on elderly health and their nutritional status was highlighted by a study done by Michelle B. Pierce, University of Connecticut.

In this study, the most common concern of women was that "food costs too much ".Cost constraints overlapped and overshadowed all other concerns. Most women agreed that the "end of the month" was the most difficult time period.

Of particular interest in this study was the emphasis on rising costs, rather than limited or inadequate income. Towards the end of the month, the women in the study appeared to redefine what constitutes as "adequate diet" with fluctuations in their financial status. They seemed to alter their definition of "needed food" to fewer items and foods of lower quality. (M Pierce, N Sheehan and A Ferris, 2002).

The elders in our study sample also had similar concerns. Since most of our elderly people have a limited income or don't have at all, their priorities were to spend their money on medication, rents and so on, leaving the least percentage for good quality food. The following statement was heard frequently while answering the questionnaire "I eat any thing available".

4.2 Health profile:

4.2.1 Chronic diseases in elderly people:

More than half of study sample had more than one chronic disease ﹍

diabetes was most frequent one (7.6% had D.M), followed by hypertension and digestive diseases (5.4%), then osteoporosis (4%), of note that all these diseases have nutritional component resulting from bad nutritional habits and can be controlled by good nutritional behaviors.

The importance and effect of diet on chronic diseases in elderly was highlighted by WHO report, 2003

The report states that many elderly patients with chronic diseases currently receive nursing care in their own homes. In Sweden, as in other countries, this care may be provided by district nurses or nurses' aids. Chronic disease, low levels of physical activity, poor dental hygiene, and swallowing difficulties are common causes of malnutrition in this population.

The main diagnoses in this group were congestive heart failure, post-stroke, type 2 diabetes mellitus, and chronic obstructive pulmonary disease. (A. Saletti, L. Johansson and T. Cederholm, 1999)

According to WHO report 2003 many of the diseases suffered by the elderly are the result of dietary factors, some of which have been operating since infancy. These factors are then compounded by changes that naturally occur with the aging process.

Dietary fat seems to be associated with cancer of the colon, pancreas and prostate. Degenerative diseases such as cardiovascular and cerebrovascular disease, diabetes, osteoporosis and cancer, which are among the most common diseases affecting the elderly, are all diet-affected. Increasingly in the diet/disease debate, the role that micronutrients play in promoting health and preventing non-communicable disease is receiving considerable attention. Micronutrient deficiencies are often common in elderly people due to a number of factors such as their reduced food intake and a lack of variety in the foods they eat. (WHO, 2003)

4.2.2 Medication use:

Majority of the study sample (73.1%) stated that they take medications regularly, 30.9% of study sample take 3-5 medications daily, 29.6% take 1-2 medications daily, and just 2.2% had more than 8 medications daily.

Investigation of medication use patterns in a population (or pharmaco-epidemiology) is useful for describing variations in medication use and potentially detecting overuse or underuse of medications (BL Strom, 1994)

The results of a study done on older people in North Carolina, USA showed that the most frequently used therapeutic classes of medications were, in rank order: cardiovascular, analgesic, gastrointestinal, nutritional and central nervous system (TP Semla, D Cohen and G Paveza, 1993)

In a study of older people of different races at home in the southeastern USA, there was an average use of 3.4 medications per person. (Rozzini R, Ferrucci L, Losonczy K, Havlik RJ and Guralnik JM. 1996)

4.3 Risk factors profile

4.3.1 Denture

More than half of the study population (58.7%) don't use denture. According to the results of a survey released by the National Institute of Dental and Craniofacial Research, the rate of tooth lessness dropped 60 percent since 1960 for persons aged 55 to 64. Today, older adults are keeping their natural teeth longer because of scientific developments and the preventive emphasis in dentistry. (Waugh Scott, 2002)

4.3.2 Smoking

Majority of the our study population (81.2%) were non-smokers, and only (18.8 %) were smokers. In our study 71.1% had no breathing difficulties because most of our sample were non-smokers.

The effect of smoking on health in aging people has been studied heavily in the literature Smoking has aging effects, as well as contributing to the development of diseases such as Cancer, Heart and lung disease, and Gastric problems.

People who smoke also tend to show earlier aging skin than other non-smokers do . Breathlessness, is a very important consequence of smoking. Smoking also causes a little interest in food that might affect elder's nutrition.(Irving, Munday and Rowlands,2002)

4.3.3 Physical activity

In our study people were equally divided regarding their physical activity practice (47.1% with no physical activity)

The amount of exercise needed depends on the person, but in general, people need to step up their activity as they get older. Elderly people often do the opposite, because of bad knees or arthritis. Instead of becoming guarded, they need to walk, bicycle, swim, and garden and find other ways to stay on the move. (Remig, 2003)

Most of the health benefits can be gained from regular physical activity of moderate intensity. Health and wellbeing at older ages is modifiable, and

substantial gains could be made by promoting health and fitness throughout life (Powell KE, Thompson PD, Caspersen CJ and Kendrick JS. 1987)

The most substantial body of evidence for achieving healthy active aging relates to the beneficial effects of regular exercise. Increased physical activity is associated with a reduced incidence of coronary heart disease, hypertension, non-insulin dependent diabetes mellitus, colon cancer, and depression and anxiety.   (Abdellah FG and Moore SR.1988)

4.3.4 Kind of food

Almost 70% of study population reported high consumption of fat and sweets, on the other hand there was a high consumption of vegetables and fruit (84.4%)

Consuming a wide variety of foods is considered one of the key components of dietary adequacy. The 2000 Dietary Guidelines for Americans includes two messages about variety: "Eat a variety of grains daily, especially whole grains "and "Eat a variety of fruits and vegetables daily" (Dietary Guidelines for Americans, 2000)

In addition, the Recommended Dietary Allowances (RDAs) provide the amounts of nutrients that should be consumed through a variety of foods from diverse food groups as part of a normal diet (National Research Council, 1989)

4.4 Relationships

The relation between nutrition in elderly and all possible risk factors was analyzed and assessed .

4.4.1 Social factors and nutrition

4.4.1.1 Socioeconomic status and milk consumption

The results showed a great relation between milk consumption and income this relation was statistically significant, (p =0.000).

These results emphasize the effect of income on quality food consumption of elders.

Researchers from Leeds Metropolitan University conducted a study to determine how health and social factors affect the nutritional intake of the aging population.

The findings showed an inadequate intake of fluid, fruits, vegetables, and non-starch polysaccharides by the subjects. Hot or cooked meals were consumed infrequently. The researchers identified health and social factors impacting intake to be inadequate amounts of money, poor or inaccessible food storage facilities, physical disabilities affecting food preparation, limited access to shops, type of cooking facilities available, as well as loneliness and bereavement. (Wylie, Copeman and Kirk, 1999)

4.4.1.2 Place of living and nutrition in elderly

The results showed a significant positive relation between place of living and milk, fruit and vegetables consumption and sweet and fat consumption (p<0.000,0.035and 0.001 respectively).

The consumption of food varied according to the place of living, with better consumption found to be among those living with their families.

The family is one of leverage point we consider. It is a primary source of nutrition-related attitudes, beliefs, and behaviors during the nutrition and health/illness cycle.   Unfortunately, health practitioners do not routinely consider it. However, different dimensions and levels of family life have clear implications for health practice.(Ross, Mirowsky, Goldsteen. 1990).

Family structure provides a foundation for individual health and offers additional resources for health. Marriage, particularly in dual-earner families, increases the household earnings of both partners and may modify intra-household choices and opportunities related to dietary practices (Umberson, 1987). For those who are unable to remain in their own homes the social services may provide some residential homes .These homes present services for elderly people including food and care about their nutrition.

The most suffering group is elderly who live alone.

4.4.1.3 Age and food difficulties

The results showed a significant relation between age and food difficulties (p<0.006) with increasing difficulties as people get older.

A Sweden study showed that sixty-two percent of the subjects assessed were found to be at risk for malnutrition .In Sweden, as in other countries, poor dental hygiene and swallowing difficulties are common causes of malnutrition in this population. These results suggest that the nutritional status of patients receiving home nursing care in Sweden is less than satisfactory. (Saletti, Johansson and Cederholm, 1999)

Also, patients in this age group require special consideration because reduced mobility and dexterity may make daily oral hygiene difficult. In addition, medical conditions and impairment are factors that dentists take into account for certain patients. Sometimes the lack of awareness about available treatment and techniques leads older patients to make false assumptions about their dental health.

This lack of awareness causes tolerance of conditions such as toothaches, bleeding gums and clicking dentures causing difficulty in food swallowing and chewing (Dr. Scott, Waugh, ODA president)

4.4.2 BMI relationships

4.4.2.1 B.M.I and kind of food

In comparing the BMI with type of food consumed by elders our study found no statistically significant relationship between vegetables & fruits (p=0.964), and fat & sweets (p=0.315).

But when we analyzed the results we found that the percentage of people within normal weight (BMI 20-24.9) who consumed fat and sweet was 15.1% and those with no or low consumption of fat and sweets was 22.6%, in other words, people who are over weight (BMI 25-29.9) who consumed fat and sweet were (49.3%) and those with no or low consumption of fat and sweets were (47.2%).

4.4.2.2 BMI and physical activity

Although the relationship in our findings between physical activity and BMI was not statistically significant (p= 0.668), after analyzing the results we found that over weight percentage for people without any sport practice (at least walking) was 52.3% and for people with moderate physical activity was 46.3%.

These two relations of BMI explained the relation between food consumption and physical activity, elderly diet should be combined with exercise .Weight status alone can create differences in a person's food intake, activity level, and physical/emotional well being. (Richards, Adams and Hunt, 2000).

In general it is advised to use simple and inexpensive methods to screen people at risk. Although there are many instruments, which are inexpensive, such as caliper (instrument used to measure skin fold thickness) these instruments were not available.

In our study we were measuring BMI using anthropometric measurements (height and weight) to determine variety factors associated

with measures of nutritional status, health, and dependency. A standard technique (biochemical measures), with fasting blood samples would be a better technique to enhance these results. However in our study we used anthropometric measurements due to unavailable biochemical measures.

4.4.3 Chronic diseases and food consumption

There was no statistically significant relationship between food consumption and chronic diseases.p=0.595 for fruit & vegetables, and p=0.652 for fat & sweet consumption

Variety assessment offers an alternative model to explore the relationship between food consumption and various aspects of health and nutrition-related diseases. (Fanelli, Stevenhagen. 1985).

4.4.4 Medications and food consumption

There was no statistically significant relationship between food consumption and medications.(p=0.141) for fruit & vegetables, and (p=0.960)for fat & sweet consumption

For elderly people according to Ola Aker study about chronic disease (Hypertension and DM), the compliance of medications was strongly affected by age with decreasing compliance in older ages. Also compliance was found to be strongly affected by the number of medications taken daily (Aker, 2003).

4.5 Conclusion

This is the first study regarding the nutrition status in elderly people and the risk factors that affect their health in Palestine, this study represented by a study sample of elderly in the city of Nablus

The   following   statements   are important study results:

❖ Although the percentage of elderly people in our community is low compared to developed countries, they comprise important percent (3.5%) and this percentage is on the rise.

❖ Nutrition problems increase with age.

❖ Positive association between social factors and nutritional situation in elderly.

❖ We have noticed that vegetable and fruit consumption is relatively high which reflects the awareness of importance of taking vegetables and fruit, however the consumption of fat and sweet was found to be high too.

❖ It was revealed by the BMI results that the percentage of obesity among the elderly is high

❖ Significant positive association between nutrition and gender, age, place of living, socioeconomic factors, however there was no significance between health profile and BMI profile.

❖ Although there's satisfactory profile about food consumption in elderly, there is a need to increase the awareness about healthy food practice among them.

4.6 Recommendations:

Although Palestinian Society consists of young age group in large, the elderly are important part of this society. At this time elderly form only 3.5% of Palestinian society but this percent is on the rise. Health care, and nutritional care of elderly deserves our attention.

During this study, we highlighted the need to study nutrition and it's risk factors in elderly, which is considered to be a neglected group of the Palestinian society. Further studies are needed regarding nutrition of elderly.

These are some recommendations and suggestions for further evaluation, we hope to take them into consideration.

❖ Diet is an important aspect of development. It is essential that all people have a regular, well‒ balanced diet containing all the essential foods, such as vegetables and fruits, protein, minerals and vitamins. These days it is generally accepted that intake of sugars and fats should be limited, as should salt .

❖ There are many different factors involved in the process of ageing. The one that most people have control over is lifestyle, the way we live our lives. Therefore each of us can have some control over the ageing

process in our own bodies, the   most important factors are smoking, diet ،and exercise .

❖ There are a great many Voluntary organizations set up to help with the care of elderly people. Some offer direct care, help or advice, while others campaign for elderly people in order to get better provision for them.

❖ As the numbers of elderly people have increased, the private sector has emerged as an important supplier of care. The main provision is in the residential care setting.

❖ Action program for health education to raise awareness about good nutrition, problems and disease affected by nutrition in elderly.

❖ The need for routine check up for elderly people for early detection of any disease that may can controlled by nutrition.

❖ Control body weight with awareness for such risk factors related to nutrition such as tooth, bone and kind of food should be consumed to improve health should be taken considered .

❖ The use of full time nutritionists at long term care facilities to improve the nutritional status of the elderly.

❖ Developing education programs such as weight management.

❖ Improving social and economic factors of elderly.

❖ Participant of all community, in all groups regardless of their age, in improving nutrition of elderly.

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Appendix

Appendix

هذا الاستبيان لغرض البحث العلمي حيث تقوم احدى طالبات الماجستير في برنـــامج الـــصحه العامه في جامعه النجاح الوطنيه بعمل دراسه حول التغذيه لدى كبار السن في نابلس و العوامل المؤثره فيها شاكرين تعاونكم

العمر :

☐فوق ال ٨٠   ☐ ٧٠–٨٠   ☐ ٦٠–٧٠   ☐

الجنس

ذكر ☐   انثى☐

مكان الاقامه

اقامه في منزل منفرد ☐   اقامه مع العائله☐   دار للرعايه ☐

الحاله الاقتصاديه

يوجد دخل ثابت مثل راتب تقاعدي   ☐ نعم   ☐ لا

الدخل اكثر من ٤٠٠ دينار شهري☐   بين ٤٠٠–٢٠٠ دينار☐   اقل من ٢٠٠ دينار ☐

المستوى الثقافي

مستوى تعليم اساسي   نعم☐   لا ☐

أمي   نعم ☐   لا ☐

تعليم عالي   نعم ☐   لا ☐

الرجاء الاجابه عن الاسئله التاليه :

١. هل تضع طقم اسنان؟

☐نعم   ☐ لا

اذا نعم منذ متى ؟

٠٢ هل تعاني في اكل بعض انواع الاغذيه بسبب الطقم

☐ نعم   ☐ لا

اذا نعم أي انواع ☐ اللحوم   ☐ الخبز و الارز   ☐ غيرها

٠٣ هل تعاني من صعوبات في المضغ و البلع ؟

☐ نعم   ☐ لا

٤٠ هل تعاني من صعوبات في الرؤيه و   السمع ؟

☐ نعم   ☐ لا

٥٠ هل تحس انك لا تميز طعم بعض انواع الاغذيه ؟

☐ نعم   ☐ لا

٦٠ هل انت مدخن؟

☐ نعم   ☐ لا

اذا نعم ما عدد السجائر يوميا

٧٠ هل كنت مدخن و اقلعت عن التدخين

☐ نعم   ☐ لا

اذا نعم منذ متى و لماذا ؟

٨٠هل انت مدخن للارجيله ؟

☐ نعم   ☐ لا

اذا نعم ما عدد المرات يوميا

٩٠ هل تعاني صعوبات في التنفس ؟

☐ نعم   ☐لا

١٠٠هل تتناول الحليب باستمرار؟

☐نعم   ☐ لا

اذا نعم كم كوب ؟

كوب يوميا ☐   ٢كوب يوميا ☐   ٣ او اكثر يوميا ☐

١١٠ هل تعاني من اوجاع العظام و المفاصل ؟

☐يوميا   ☐احيانا (مره او مرتين بالاسبوع)   ☐لا

١٢٠هل يحتوي غذائك اليومي على الخضار و الفواكه ؟

☐نعم   ☐ لا

١٣٠هل انت من ممارسي الرياضه سابقا ؟

☐نعم   ☐لا

١٤٠ هل تمارس رياضه و لو خفيفه كالمشي ؟

☐نعم   ☐لا

١٥٠هل تعاني من الامساك ؟

☐ نعم   ☐لا

٠١٦ هل تستعمل أي ملينات ؟

☐ نعم   ☐ لا

اذا نعم   هل هي طبيعيه ام صناعيه ؟

٠١٧ هل يحتوي غذائك اليومي على الدهنيات و الحلويات ؟

☐نعم   ☐ لا

٠١٨ هل تعاني احد الامراض التاليه ؟

ضغط دم   ☐ نعم   ☐ لا

سكري   ☐ نعم   ☐ لا

امراض القلب☐ نعم   ☐لا

امراض الجهاز الهضمي ☐نعم   ☐ لا

امراض الجهاز التنفسي ☐نعم   ☐ لا

هشاشه عظام ☐نعم   ☐لا

٠١٩ هل تتناول دواء معين بشكل يومي ؟

☐نعم   ☐ لا   اذا نعم ما هو ؟

كم عدد الادويه التي تتناولها يوميا

☐٢-١   ☐ ٣-٥   ☐ ٥-٨   ☐ اكثر من ٨

٠٢٠ الرجاء الاجابه عما يلي :

الوزن الحالي :

الطول :

في الجدول التالي يرجى ذكر جميع انواع الاغذيه التي تناولتها خلال ال (٢٤) ساعه السابقه مع ذكر كمياتها

الكميه	اسم الماده الغذائيه

و لكم جزيل الشكر

Conclusion

This is the first study regarding the nutrition status in elderly people and the risk factors that affect their health in Palestine, this study represented by a study sample of elderly in Nablus

The following statements are important study results:

- Although the percentage of elderly people in our community is low compared to developed countries, they comprise important percent (3.5%) and this percentage is on the rise.
- Nutrition problems increase with age.
- Positive association between social factors and nutritional situation in elderly.
- We have noticed that vegetable and fruit consumption is relatively high which reflects the awareness of the importance of taking vegetables and fruit, however the consumption of fat and sweet was found to be high too.
- It was revealed by the BMI results that the percentage of obesity among the elderly are high
- Significant positive association between nutrition and gender , age , place of living , socioeconomic factors however there was no significance between health profile and BMI profile.

Recommendation

Palestine is one of the developing countries, so there is a little caring in this category of people but lately there is an increase importance on elderly people in general but not nutrition of elderly

During this study, we highlighted the need to study nutrition and it's risk factors in elderly, which is considered to be a neglected group of the Palestinian society. Further studies are needed regarding nutrition of elderly

These are some recommendations and suggestions for further evaluation, we hope to take them into consideration.

- Diet is an important aspect of development. It is essential that all people have a regular, well– balanced diet containing all the essential foods, such as vegetables and fruits, protein, minerals and vitamins. These days it is generally accepted that intake of sugars and fats should be limited, as should salt .

  There are many different factors involved in the process of ageing. The one that most people have control over is lifestyle, the way we live our lives. Therefore each of us can have some control over the ageing process in our own bodies, the most important factors are smoking, diet ˌand exercise .

- There are a great many Voluntary organizations set up to help with the care of elderly people. Some offer direct care, help or advice, while others campaign for elderly people in order to get better provision for them.

- As the numbers of elderly people have increased, the private sector has emerged as an important supplier of care. The main provision is in the residential care setting,

- Action program for health education to raise awareness about good nutrition , problems and disease affected by nutrition in elderly

- The need for routinely check up for elderly people for early detection of any disease that may can controlled by nutrition
- Control body weight with awareness for such risk factors related to nutrition such as tooth , bone and kind of food should be consumed to improve health should be taken considered
- The use of full time nutritionists at long term care facilities Improving the nutritional status of the elderly
- Developing education programs such as weight management
- Improving social and economic factors of elderly
- Participant of all community , in all groups regardless of their age , in improving nutrition of elderly

بسم الله الرحمن الرحيم

جامعة النجاح الوطنية

كلية الدراسات العليا

التغذية لدى كبار السن في مدينة نابلس

إعداد

عبير حسن سعيد خويره

إشراف

الدكتورة سمر غزال

٢٠٠٤م

ب

التغذية لدى كبار السن في مدينة نابلس

إعداد

عبير حسن سعيد خويره

إشراف

الدكتورة سمر غزال

الملخص

إن التحدي القائم لتلبية الاحتياجات الغذائية لدى المسنين مرتبط بالنقص في الأبحاث في هذا المجال، هناك العديد من العوامل التي لها علاقة بالوضع الحالي والقديم للعوامل الاجتماعية والاقتصادية والنفسية، تتفاعل هذه العوامل معاً مما يؤدي إلى اختلافات كثيرة في العمليات الحيوية للمسن تزيد من هذا التحدي.

ينبغي أن تبنى المتطلبات الغذائية على التغيرات البيولوجية الناتجة عن التقدم في السن، كما هو الحال بالاحتياجات الغذائية المتعلقة بأمراض التقدم بالسن مثل أمراض القلب. تهدف هذه الرسالة – الأولى من نوعها في فلسطين– إلى دراسة الحالة الغذائية، والعوامل المرتبطة بها لدى المسنين في فلسطين ممثلة بفئة المسنين في مدينة نابلس.

تكونت عينة الدراسة من (٢٢٣) مسن من سكان مدينة نابلس، اختيروا بطريقة عشوائية، حيث اخضعوا للاستبيان الذي وزع عليهم شاملاً النواحي الاجتماعية والصحية، وعوامل الخطر المؤثرة على التغذية، كما قيس لهم مؤشر كتلة الجسم (BMI)، وتم تحليل البيانات إحصائياً باستخدام البرنامج الإحصائي SPSS.

على الرغم من أن بعض النتائج لم تطابق توقعاتنا وخاصة تلك المتعلقة بنتائج (BMI) وعلاقته مع عوامل الخطر، فقد حصلنا على العديد من النتائج الإيجابية.

من خلال ملاحظاتنا وجدنا أن هناك قلة في المعلومات المتعلقة بالتغذيــة لــدى المسنين، مما يدعو إلى حاجة لتثقيف عام للنواحي المتعلقة بالتغذية.

هذه النتائج تلقى الضوء على الحاجة الماسة لواضعي الــسياسات فــي مجــال الصحة لمزيد من الاهتمام بالتغذية والأمراض المرتبطة بها، بالإضافة إلى توفير أعداد أكبر من المتخصصين في مجال التغذية للقيام بالدور المنوط بهم في النظام الصحي.