Epidemiological Study of Non- communicable Diseases Among Patients Attending Nutritional Clinic in Baquba Teaching Hospital

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# Epidemiological Study of Non-communicable Diseases Among Patients Attending Nutritional Clinic in Baquba Teaching Hospital

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## Abstract

**Background:** Non-communicable diseases are chronic diseases with long duration resulting from a combination of many factors like genetic, physiological, environmental, and lifestyle. Factors like poor diet, lack of exercise, tobacco, drugs, alcohol, family, and environment are risk factors for non-communicable diseases.Non-communicable diseases have huge economic consequences due to health care costs and lost economic productivity. Non-communicable diseases are responsible for 63% of the total death. Modifiable risk factors due to lifestyle can be controlled or reduced by intervention like lack of exercise, smoking, alcohol, unbalanced diet while non-modifiable risk factors cannot be reduced or controlled like age, gender, genetics. Improper maternal nutrition in utero and during the first year of life is associated with the risk of non-communicable diseases in adulthood. Obesity is now a public health problem because of strong association with hypertension, coronary heart disease, type 2 diabetes and stroke.

**Objective:** To determine non -communicable diseases among patients attending a nutrition clinic in Baquba Teaching Hospital and to assess the diseases in relation to age, gender, residency, occupation, and educational level.

**Patients and Methods:** This descriptive study was conducted in Baquba Teaching Hospital, a review of patients' records was done from the start of January 2015 to 31st December 2017. Data were collected by specially designed questionnaire which includes age, gender, height, weight, occupation, residency, and educational level. Results presented in tables with numbers and percentages.

**Results:** The total number of records were (891) .obesity and morbid obesity (64.2%). Obesity (52.7%) followed by hypertension (20.3%). Most of the cases were female (66.7%). The age group of (31-40) year was mostly affected (23.2%). Urban residents (77.2%) of cases .House wives (48.2%) followed by students (23.1%). (63.8%) of cases were graduated from primary and secondary school.

**Conclusion:** Most the cases were obese. Female affected more than male, majority of cases in the age group below 50 years, urban residents more than rural residents, most of cases were house wives, matority of cases were graduated from primary and secondary school.

**Keywords:** Non-commnicable diseases, obesity, lifestyle

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## Introduction

Non-communicable diseases are chronic diseases with a long duration resulting from a combination of genetic, physiological, environmental, and behavioral factors. Non-communicable diseases include cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes[1]. Non-communicable diseases are responsible for 63% of total deaths worldwide[2]. The mortality rate due to non-communicable diseases increased by up to a 65% in 2010[3].

Non-communicable diseases are predisposed by risk factors which are poor diet, lack of exercise, tobacco, drug, alcohol, family history, and environment[4]. World Health Organization (WHO) has prioritized four modifiable risk factors like physical inactivity, tobacco use, alcohol use, and unhealthy diets while non-modifiable risk factor that can't be controlled or reduced like (Age, Gender, Race and family history genetics)[5].

Non-communicable diseases have a huge economic burden due to health care costs and loss of productivity[6].

Non-communicable diseases are responsible for catastrophic health expenditure among the uninsured[7].

Inadequate maternal nutrition and during the first years of life were regarded as risk factors for non-communicable diseases in adulthood[8].Overweight and obesity regarded a worldwide health problem because it is associated with increased risk of chronic diseases like hypertension, ischemic heart diseases, type 2 diabetes, stroke, gall bladder diseases, certain types of cancer, and other disorders[9]. Obesity was described as a chronic disease by WHO that is so prevalent in both developed and developing countries [10].

Physical activity, better diet, and access to vaccines play important role in prevention and reduction of the prevalence of non-communicable diseases that in turn improves the quality of life and decrease health care costs [11]. The aims of this study are to determine non-communicable diseases among patients attending to nutrition clinic in Baquba teaching hospital. To assess these patients in relation to (Age, Gender, Residency, Occupation, Educational level).

## Patients and Methods

A descriptive study was conducted from the start of January 2015 to 31st of December 2017,the rercords of patients attending to nutrition clinic in Baquba Teaching Hospital were included.

This hospital is the central hospital in Diyala province. Data were collected by specially designed questionnaire include the following data (Name, Age, Gender, Height, Weight, Occupation, Residency, Education level).

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## Statistical analysis

The collected data were analyzed manually and presented by tables with numbers and percentages.

## Results

Total number of cases during the study period were (891). Obesity and morbid obesity form more than 63% of cases who attended to nutrition clinic as shown in Table (1).

Distribution of cases according to chronic diseases show that obesity form (52.7%) followed by hypertension (20.3%) from all those with non-communicable diseases (311) as shown in Table (2).

Most of the cases were females (66.7%) while males (33.3%), as shown in Table (3). Most of the cases were in age groups (31-40) yr 23.2% followed by age groups (21-30)yr 21.1% and (41-50)yr 19.8% as shown in Table (4). Urban residents form (77.2%) of cases as shown in Table (5). According to the occupation, the majority of cases were housewives (48.2%) followed by students (23.1%) and governmental employees (20.7%) as shown in Table (6). More than (63.8%) of cases were graduated from primary and secondary schools and a minority of cases were illiterate as shown in Table (7).

**Table (1):** Distribution of cases according to Body Weight

| Body Weight | No | % |
|---|---|---|
| Obesity | 381 | 42.8 |
| Morbid obesity | 191 | 21.4 |
| Increase in weight | 181 | 20.3 |
| Thin | 102 | 11.5 |
| Normal weight | 36 | 4 |
| Total | 891 | 100 |

**Table (2):** Distribution of cases according to Non-Communicable Diseases

| Diseases | No | % |
|---|---|---|
| Obesity | 164 | 52.7 |
| Hypertension | 63 | 20.3 |
| Diabetes | 13 | 4.2 |
| Heart diseases | 5 | 1.61 |
| Thyroid gland | 4 | 1.3 |
| Asthma | 2 | 0.6 |
| Renal disease | 1 | 0.32 |
| More than one disease | 59 | 18.97 |
| Total | 311 | 100 |

*Those with non-communicable disease were excluded

**Table (3):** Distribution of cases according to Gender

| Gender | No | % |
|---|---|---|
| Female | 594 | 66.7 |
| Male | 297 | 33.3 |
| Total | 891 | 100 |

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**Table (4):** Distribution of cases according to Age Group

| Age group | No | % |
|---|---|---|
| 1-10 | 85 | 9.5 |
| 11-20 | 147 | 16.5 |
| 21-30 | 188 | 21.1 |
| 31-40 | 207 | 23.2 |
| 41-50 | 176 | 19.8 |
| 51-60 | 70 | 7.9 |
| 61-70 | 16 | 1.8 |
| >70 | 2 | 0.2 |
| Total | 891 | 100 |

**Table (5):** Distribution of cases according to Residency

| Residency | No | % |
|---|---|---|
| Urban | 688 | 77.2 |
| Rural | 203 | 22.8 |
| Total | 891 | 100 |

**Table (6):** Distribution of cases according to Occppation

| Occupation | No | % |
|---|---|---|
| House wife | 391 | 48.2 |
| Student | 187 | 23.1 |
| Government employees | 168 | 20.7 |
| Wage earner | 35 | 4.3 |
| Military | 11 | 1.4 |
| Medical staff | 10 | 1.2 |
| Retired | 9 | 1.1 |
| Total | 811 | 100 |

* Children were excluded

**Table (7):** Distribution of cases according to Educational Level

| Educational Level | No | % |
|---|---|---|
| Illiterate | 86 | 9.7 |
| Primary school | 319 | 35.8 |
| Secondary school | 250 | 28 |
| University graduate | 236 | 26.5 |
| Total | 891 | 100 |

## Discussion

In this study obesity and morbid obesity form more than 64% and this could be explained that the high prevalence of obesity in both adult men and women 32.2% , 35.5% respectively. The prevalence of obesity was increasing continuously in the last ten years for women and maybe for men [12]. Patients with obesity, hypertension, and diabetes mellitus form (77.2) of cases and this could be attributed to fact that obesity is a risk factor with a strong association for more than 20 chronic diseases[13]. There is a marked

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increase in cardiovascular diseases and another non-communicable disease due to epidemiologic transition and these diseases had a great burden on developing countries and regarded as a leading cause of mortality and disability.

According to gender in this study female was more than male (66.7%) and this agrees with study in China which showed that Non-communicable diseases were lower in men than women[14], and this could be explained that body mass index was increased significantly among females in the last four decades[15].

Majority of cases were in young adult and up to 50 years and this agree with WHO-SAGE data study[16]. And the explanation for that is related to lifestyles like physical activity, a dietary habit that leads to obesity and chronic diseases. The majority of cases were reported among urban residents and this could be due to rapid urbanization which is associated with an increase in incidence and prevalence of non-communicable diseases.

[17]. Rural and urban living can determine health through arrange of environmental, social and cultural factors[18]. This result agree with study by Allenders, et al (2010)[19].

The majority of cases were housewives and this could be explained that women are more affected than men in this study and most of women were housewives and this agrees with the study by Jain et al (2007)[20].

More than 63% of cases were students of primary and secondary school and those students were referred to nutrition clinic according to obesity survey program which is implemented according to school health services program and this agree with study by Manlike and Knobler (2006) [21].

## Conclusions
1-Total number of cases during the study period was (891).
2-Obesty forms (52.7%) of cases
3-Females are more than males (66.7%).
4-Most of the cases in the age group (31-40) years (23.2%).
5-Urban residencies form 77.2% of the cases.
6-The majority of the cases were housewives (48.2%).
7-(63.8%) of cases have primary and secondary school graduation

## Recommendations
1-Health education about obesity and its relation with other non-communicable diseases.
2-There must be program in schools and universities to prevent obesity
3-There must be good attention to sport in schools, universities, and public
4-Health services should be directed to non-communicable diseases regarding diagnosis, treatment to prevent complications

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