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# PREVALENCE OF NON-COMMUNICABLE DISEASES AMONG GERIATRIC POPULATION IN AL- NASIRIYAH CITY 2015

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## Abstract

**Objectives:** To assess the extent of NCDs among geriatric people in Al- Nasiriyah city together with an assessment of general health status and the health care services provided to this segment of the population.

**Methodology:** Analytical, cross-sectional study in form of household survey had been conducted in Al- Nasiriyah City, from 1 October 2015 to the end of August 2016. A multistage sampling involving 423 individuals aged ≥ 60 years as a representative sample.

**Results:** The overall prevalence of chronic NCDs was 89%. The top five chronic diseases were hypertension (67%), diabetes (31.2%), musculoskeletal diseases (15.4%), heart diseases (11.1%), and cataract (12.8%). Prevalence of mutimorbidity (patient with two or more chronic diseases) was 59%. The main geriatric symptoms were vision problems (77.8%), feeling sad or depressed (36.4%), hearing problems (31.7%), falls (30%), memory problems (22.9%), and urinary symptoms (11.1%).

**Conclusion:** The overall prevalence of chronic NCDs, mutimorbidity and geriatric problems among geriatric people of Al-Nasiriyah city was high, particularly cardiovascular diseases and diabetes alarming the need for actual and focused efforts in the field of prevention and improvement as well as strengthen the health care system particularly geriatric health care to reduce morbidity and to improve the healthy life years for elderly people.

**Keywords:** Non-communicable diseases, Prevalence, Geriatric, Al- Nasiriyah.

## Introduction:

Non-communicable diseases (NCDs) are slowly progressive, long duration chronic diseases that not transmitted from one person to another [(1)]. They characterized by uncertain etiology, have multiple risk factors (RFs), rarely curable or resolve by itself [(2).] Some of these diseases are life-threatening conditions and may kill the patient immediately, while other conditions persist for a long period and require along life management with development of different types of complications, functional impairment, impaired quality of life and disability. [(3)] Its main four types are cardiovascular diseases (CVD), cancers, chronic diseases of the respiratory system, and diabetes [(1,4).] The shared common behavioral RFs that increase the risk of development and death from NCDs include "Physical inactivity, poor unhealthy diets, alcohol consumption as well as tobacco exposure" [(5)], that can initiate a physiological change such elevated blood pressure, raised serum cholesterol, hyperglycemia, and overweight. The age, family history, gender and race represent the non-modifiable risk factors. [(6)] Other types of NCDs include oral diseases,mental diseases such disease,digestive as dementia, chronic kidney diseases and major injuries such as transport injuries, intentional and violence [(7)] Although the most common causes of NCDs are genetic and or lifestyle factors, NCDs are largely preventable through an effective intervention and healthy lifestyles [(8).] Nobody is immune to these diseases, they affect both genders, all ethnic groups, and all ages but they are more prevalent in old ages, where ageing is a major risk factor for development of a wide range of chronic diseases [(9) (10).] For example, in the USA, about 92% of older population acquired at least one long-term condition and about 77% develop at least two chronic diseases [(11).] Nowadays NCDs are the principle cause of death and disability all over the world [(12).] Greater than 75% of total causes of death are attributed to NCDs globally [(13)] and about three-quarters of these deaths take place in "low and middle-income countries" (LMIC). The epidemic of NCDs is not affecting only the human health but also the socioeconomic status and therefore there was a

global UN response [14]. The first global epidemiological report confers that the epidemic is already present and exceeds the capacities of LMIC. [15]. the global demographic transition, nutritional transition and the epidemiological transition are referring to the change in the pattern of disease from infectious to chronic NCDs [16]. And are the main causes of high NCD prevalence [17] and consider the three important historical transitions that occurred in the last century. Currently, NCDs in Iraq represent a major public health problem and contributed to the majority of the causes of deaths. In spite of limited information about the real prevalence of NCDs in Iraq, ministry of health demonstrated that the four major groups of NCDs were responsible for about 50% of total mortality and about 30% of these deaths occur below the age of 60. The major challenges regarding their prevention and control include the lack of the sustained availability of requirements that are essential for implementation the plans of prevention and control such as (therapeutic and diagnostic materials), lack of coordination between the private and public. Other challenges are the limited human and institutional resources [18] [16].

Many older people may develop multiple diseases referred to as (co-morbidity) which acts as major risk factor for frequent hospitalization, increase treatment burden and death. [19]. Geriatric syndromes mostly occur in elderly people and associated with poor outcomes [20]. Comprehensive geriatric assessment" CGA is an effective and powerful tool to provide suitable care and management for geriatric population [21].Generally, all geriatric patients can be categorized into four categories depending on their functional and health status: Healthy individuals who have no or early chronic disease and functionally they are living independently, chronically ill patients including those geriatric patients who have one or more chronic diseases and more often need recurrent hospitalizations. Frail patients who have diminished physiological function of multiple organ systems and inability to withstand even minor illnesses and stresses, and dying patients who are expected to die within days or months [22]. This study based on the household survey with direct interviewing to get an accurate opportunity in studying the extent and burden of chronic diseases in geriatric people and also to assess and evaluate the health

status of older people and the benefit from the general health services provided to this population. the of segment

## Objectives:

To assess the extent of NCDs among geriatric population, systematic, and common prominent geriatric problems, reviewing and lastly feeling of wellbeing assessments.

## Subjects and method

1- **Profile of study area:**

The study was carried out in Al-Nasiriya city which is the capital of Thi-Qar governorate, which is the 4th most populated city in Iraq with an estimated population (1979561) in 2014. Gender distribution is 52% males and 48% females. Geographical distribution is 63% urban and 37% rural. People aged 60 years and more are (99140) which represent 5% of the total population. Life expectancy at age 60 years is 27.08 years while the life expectancy at birth is 72- 80 years [23]. Al Nasiriya City population estimated in 2015 (582218 individuals) with male to female ratio 1:1 with geographical distribution of 58% urban and 42%rural [24].

2- **The study population:**

The study population includes only individuals aged 60 years and above, males and females. The exclusion criteria included those who refused to participate and those who were absent at home after three consecutive visits. Age was estimated according to the individual identification card. Diagnosis of cases depends on the public health card or available documentations (medical reports, investigation, and current treatment).

3- **The study design:** The study is observational analytical cross sectional household survey. The period of study was 1 year started from 1st of October 2015 to the end of August 2016.

4- **Sampling.and.sample.procedure:**

**A-Sample size**: It was calculated according to the Dobson's formula [25]

$$N = \{(1.96)^2 \times P\,(1-P)/d^2\} \times \text{design effect (factor)}$$

(1.8)

$$N = \frac{(1.96)^2 \times 0.89 \times 0.11}{(0.04)^2} \times 1.8 \approx 423$$

Where: N= Sample size, P= Estimated prevalence rate from other studies which was (89%) [26]., d= Maximum tolerated error, the value of 0.04 was chosen as an acceptable limit.

**B-Sampling procedure:**

Multistage method for sampling was performed, first stage 3 areas catchment areas were selected from the Alshamiah area (south) by simple random sampling from a list consisting of six areas and 6 areas catchment areas were selected from Aljazeera area (north) that contains thirteen areas. Second stage was a systematic random sampling conducted for the household visits. The residential quarters subdivided according to the streets and enumerated into odd and even numbers, so if starting with even number of street then the visit starts from the odd number of the house.

**The study tools**

**The questionnaire:** A special questionnaire revised by three experts in the field of community medicine and family medicine was planned to collect information. It consists of:

**Sections 1**: includes (name, age, sex, number of family members, previous occupation, current occupation, marital status, socioeconomic status, education level.

**Sections 2**: designed for geriatric assessment (general health, daily activities, ask about the problems in geriatric such as problems of the vision, hearing, memory, feeling of sadness, bladder control, bowel control and falls [27].

**Sections 3**: record NCDs by searching for types and the number of chronic diseases, age of onset, family history, place of diagnosis, number of drugs and compliance in drug intake.

B-Anthropometric, Blood sugar and Blood pressure measurement: all these measurements had been obtained using standard methods of measurements.

**5- Statistical analysis**:

Statistical Package for Social Sciences (SPSS) version 23 had been used for data analysis, where Chi-square, Fishers

Exact test had been used to test the qualitative relations and ANOVA and T test had been used to test the quantitative variables, all variables had been expressed in form of number and percentages, P value was of significance at 0.05.

## Results:

Three hundred and four (304) households was yielding a total of four hundred twenty-three (423) participants with the mean age (67.4 ±6.2) that ranging from 60- 99 years old, where, the mean age of (68.4± 6.2) and (66.7±6.14) for male, females respectively. The proportion of males was slightly more than females (50.8% vs. 49.2%). Regarding the previous occupational history about1/3 of them (34.3%) were employed predominantly males (84.1% vs. 15. 9%).The majority of females (87%) were housewives. While the current occupational history shows significant difference with nearly 1/3 of them (31.4%) were retired and predominantly males (83.5% vs. 16.5%). The self-employment is more common in males than females (94.1% vs. 5.9%) while the majority of females (82%) were housewives. Regarding the socio-economic state, more than 2/3 of them (70.4%) reported moderate SES; while those with a higher level were represent only 15.6%. There was a high level of illiteracy, about one half of the population (49.6%) and significantly more common among females (64.8%).

The most prevalent condition was the hypertension (67.8 %) among the twenty-four NCDs of concern, followed by diabetes (31.2 %), musculoskeletal disease (15.4 %), coronary heart diseases (15%) and cataract (12.7 %).

**Table (1): Prevalence of NCDs according to system category by** WHO**:**

| Disease category * | Disease | No. of cases | Total no. of cases | % from total cases | Prevalence (n=423) |
|---|---|---|---|---|---|
| Cardiovascular | Hypertension<br>CHD<br>Stroke | 287<br>63<br>21 | 371 | 48.0 | 87.7 |
| metabolic | Diabetes | 132 | | 17.1 | 31.2 |
| Respiratory | COPD<br>Asthma | 7<br>21 | 28 | 3.6 | 6.6 |
| Musculoskeletal | Arthritis<br>Osteoporosis | 65<br>14 | 65<br>14 | 8.4<br>1.8 | 18.7 |
| Sense organ | Cataract<br>Blindness<br>Deaf | 54<br>3<br>2 | 59 | 7.6 | 13.9 |
| Urological | Prostatitis<br>BPH<br>CKD<br>Urinary stone | 16<br>11<br>10<br>10 | 47 | 6.1 | 11.1 |
| Endocrine | Hypothyroidism | 21 | | 2.7 | 5.0 |
| Neurological | Dementia<br>Epilepsy<br>Parkinsonism<br>Depression | 3<br>1<br>4<br>1 | 9 | 1.2 | 2.1 |
| Oral diseases | Oral **diseases** | 10 | | 1.3 | 2.4 |
| Digestive system | Gall stone | 6 | | 0.8 | 1.4 |
| Injuries | Injuries | 7 | | 0.9 | 1.7 |
| Cancer | Cancer | 4 | | 0.5 | 0.9 |
| Total | | 773 | | 100.0 | |

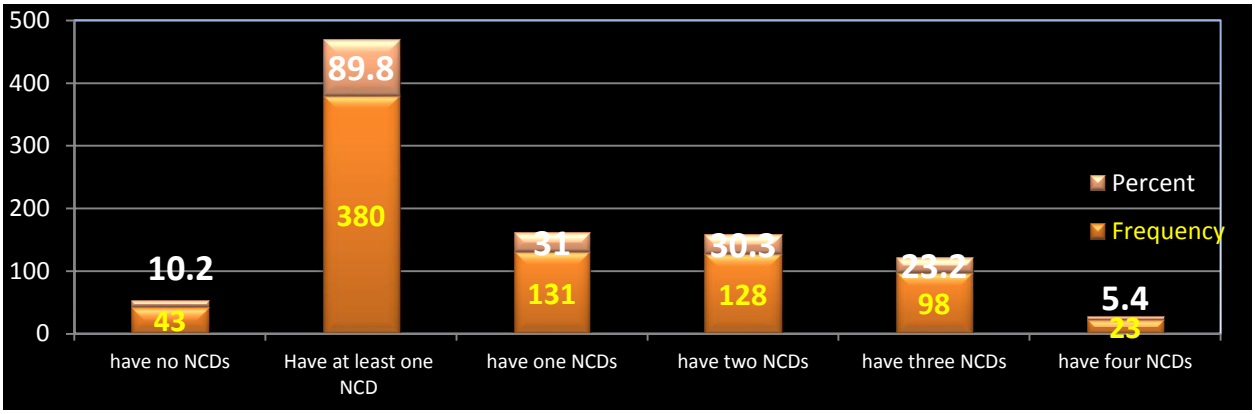


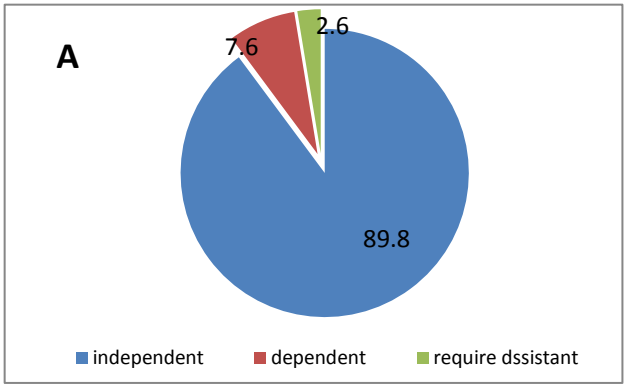

Figure1: distribution of population according to their presesnce of NCD:

*(WHO, ICD10). Cardiovascular diseases were the most prevalent group (87.8%) followed by diabetes (31.2 %), musculoskeletal (15.4 %) and urinary system (11.2 %). As shown in table [(1).]

Figure (1) shows the prevalence of NCDs among the studied population. Only 43 (10.2 %) individuals have no chronic disease, while 380 (89.8%) have at least one disease, nearly one third (30.3%) have two

diseases, about one quarter (23.2%) have three diseases and only (5.4 %) have four diseases.

**Figure (1): Prevalence of NCDs and co-morbidities among the studied population**



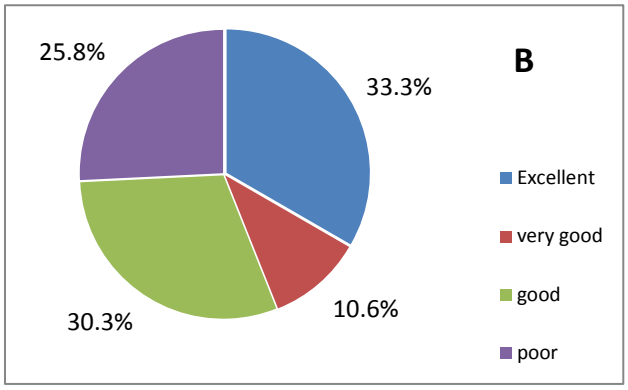




Figure (2) A- demonstrates that one third of the elderly (33.3%) described their general health subjectively as excellent and nearly similar proportion were good), while about one quarter of them (25.7%) gave an account of poor general health. Regarding the activities of daily living, figure (3) shows that the majority (89.8%) was independent and can do their daily activities by themselves. Those who cannot do at all (dependent) were (7.6%), while the remaining (2.6%) can do but required help from other people as shown in figure 2 B.Figure (2): Feeling of wellbeing and dependency in doing daily activities of elderly people.

Figure (3) show the geriatric review of systems [27] .The most frequent geriatric problem (symptom) was vision problem in more than three quarters (77.8%) of studied population. The second frequent symptom (more than one third (36.4%) was the feeling sad or depressed. The next (31.7) was the hearing problem. History of at least one fall in the past year was seen in 30% of elderly in this study. Less than one quarter (22.9%) were complaining from memory problems. Trouble with urinary bladder and incontinence was (11.1%) and the least frequent complain (1.7%) was the trouble control of the bowel.

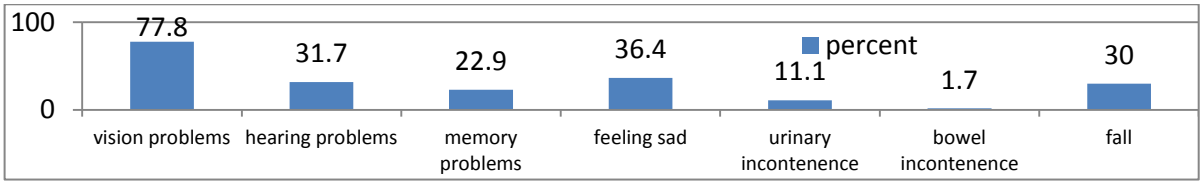



Figure (3): Geriatric review of systems and prominent geriatric problems.

There was significant statistical association between all studied variables and occurrence of

NCDs, except the sex and previous occupation show no significant difference

**Table (2): Association of NCDs with socio-demographic characters and other determinants.**

| Risk factor | Have no NCDs No. (%) | Have at least one NCDs No. (%) | $X^2$,p-value |
|---|---|---|---|
| **Age** | | | |
| **60-74 years** | 42 (11.3%) | 331 (88.7%) | 4.195 |
| **75-84 years** | 1 (2.5%) | 39 (97.5%) | 0.021 |
| **≥85** | 0 (0.0%) | 10 (100.0%) | |
| **Sex** | | | |
| **Male** | 32 (10.7%) | 192 (89.3%) | 1.36 |
| **female** | 20 (9.6%) | 188 (90.4%) | 0.713 |
| **Previous occupation** | | | |
| **Employed** | 11 (7.6%) | 134 (92.4%) | 4.157 |
| **self Employed** | 15 (15.5%) | 82 (84.5%) | 0.125 |
| **House wife** | 17 (9.4%) | 164 (90.6%) | |
| **Current occupation** | | | |
| **retired** | 9 (6.8%) | 124 (93.2%) | |
| **none** | 1 (2.9%) | 33 (97.1%) | |
| **self employed** | 16(18.8%) | 69 (81.2%) | 10.612 |
| **house wife** | 17 (9.9%) | 154 (90.1%) | 0.018 |
| **Socio-economic status** | | | |
| **poor** | 3 (5.1%9) | 56 (94.9%) | 25.346[a] |
| **middle** | 22 (7.4%) | 276 (92.6%) | 0.001 |
| **high** | 18 (10.2%) | 48 (72.7%) | |
| **Education level** | | | |
| **illiterate** | 13 (6.2%) | 197 (93.8%) | |
| **primary** | 9 (8.7%) | 94 (91.3%) | 14.053 |
| **2ndary** | 16 (20.5%) | 62 (79.5%) | 0.004 |
| **Collage & above** | 5 (15.6%) | 27 (84.4%) | |
| **Marital status** | | | |
| **married** | 40 (12.1%) | 290 (87.9%) | |
| **ever single** | 0 (0.0%) | 2 (100.0%) | 6.334 |
| **widow** | 3 (3.4%) | 86 (96.6%) | 0.005 |
| **divorce** | 0 (0.0%) | 2 (100.0%) | |
| **Family history** | | | |
| **Yes** | 2 (1.9%) | 106 (98.1%) | 10.977 |
| **no** | 41 (13%) | 274 (87%) | 0.001 |
| **Ability to access medical care** | | | |
| **Able** | 37 (12.7%) | 255 (87.3%) | 6.483 |
| **unable** | 6 (4.6%) | 125 (95.4%) | 0.011 |
| **Body mass index** | | | |
| **Underweight** | 0 (0.0%) | 4 (100%) | |
| **Normal** | 17 (13.2%) | 112 (86.8%) | 20.849 |
| **Overweight** | 23 (17.3%) | 110 (82.7%) | 0.001 |
| **Obese** | 3 (3.9%) | 154 (98.1%) | |
| **Smoking** | | | |
| **Yes** | 8(13.3%) | 52 (86.7%) | 0.768 |
| **No** | 35 (9.6%) | 328 (90.4%) | 0.381 |

Table (3) show the examination of studied risk factors associated with the occurrence of NCDs in this study through a binary logistic regression. This analysis showed a significant association with BMI, socio-economic status and family history. While the non-significant variables (age, marital status, and current occupation, while four variables were excluded (sex, previous occupation, education, and ability to access medical care).

Table (3): Study the association of risk factors with the occurrence of NCDs by Logistic regression analysis

| Significance | Variable | β | p-value | Expected (B) | 95%CI for expected (B) | |
|---|---|---|---|---|---|---|
| | | | | | Lower | Upper |
| **Significant** | Socio-economic status | -1.126 | 0.001 | 0.324 | 0.171 | 0.614 |
| | BMI | 0.675 | 0.002 | 1.963 | 1.290 | 2.989 |
| | Family history | -2.005 | 0.007 | 0.135 | 0.031 | 0.580 |
| **Insignificant** | Age | 1.598 | 0.124 | 4.941 | 0.647 | 37.746 |
| | marital status | 0.550 | 0.093 | 1.733 | 0.913 | 3.288 |
| | Current occupation | -0.244 | 0.089 | 0.783 | 0.591 | 1.038 |
| **Excluded** | Sex | Non-significant | | | | |
| | Previous occupation | | | | | |
| | Education | | | | | |
| | Ability to access medical care | | | | | |

## Discussion

This cross sectional study that had been carried out in Al Nasiriya city over one-year period was aimed initially to assess the extent of NCDs among geriatric, that show the overall prevalence of chronic NCDs, estimated at 89% and only 11% have no chronic disease i.e. 89% of the population have at least one chronic illness. The prevalence of NCDs is linked to increasing age and the geriatric population are more prone to develop chronic diseases and it is expected to see a higher prevalence of NCDs among geriatric than the other age groups in addition to the development of multiple co-morbidities that increase the suffering of patients and the cost for management [28] Similar results was reported from other studies. The prevalence was estimated at 88.5% in Egypt (2015) [26], 87.7% in Brazil (2012) [29], 88% in Mumbai (2015) [30], 87.7% in Bangladesh (2014) [31]. 87% in Portugal (2015) [32] and more than 90% reported in the USA [33]. Lower than this estimate was reported from other studies: 72% in Malaysia 2012 [34], 63% in

India (G.K. MINI 2014) [35], 64.5% in Taiwan (2014) [36], 58% in UK 2012) [28], 51.8% in South Africa (2013) [37], and 38.5% in Southern China 2015 [38]. This Difference could be due to the different design of epidemiological study, methodology, prevalence of common risk factors and criteria of sampling as well as the types and the number of diseases under study. This study was conducted in an urban area that considers the main limitation in generalization of the result.

Co-morbidity is much more complex condition where the patient experienced two or more conditions that results in more complex management, different health outcome and extra cost and care [39]. Study by (Salive ME. in 2013) showed that the prevalence of multi-morbidity in the world population was estimated to be more than 60% and increases with age to reach more than 80% in people ≥ 85 years old [40]. In this study, the proportion of geriatric patients with multi-morbidity was 59%. It may be associated with poor quality of life, decreased physical function, increase the number of medicines (poly-pharmacy) and need complex and costly guidelines for management [41]. Further and urgent researches are needed to study the etiology, risk factors and their association with mortality and disability.

This study revealed a high prevalence of cardiovascular disorders in the elderly people of Al-Nasiriyah city (87.7%) including hypertension, heart and blood vessel diseases which were on the top among other types of NCDs. A similar result (89.2%) was reported from (Taskin et.al 2014) [42]. A lower prevalence (71.9%) was reported in USA [43], but much lower figure (27.8%) was reported from G.K. NINI in 2014 (35) even they revealed that the CVDs were not at the top of NCDs. This difference could be due to differences in the prevalence of risk factors and socio-cultural determinants.

This high prevalence in CVDs was mainly due to hypertension (67.8%) which represented in 77% of total cardiovascular disorders in this study, which is similar to the results reported in Nigeria (67.1%) [44], lower than that in USA (70%) [45], (37.4%) in Egypt [26]. and higher than that was reported from Kuwait (60.8%) [46].

Hypertension was on the top among the 24 chronic conditions in this study with no

significant difference (p=0.658), the number of males with hypertension were slightly higher than females (51.6 % versus 48.4%) which is comparable to the study of (Saadon.A.A. in 2014) in the Nasiriya city [47], furthermore, also similar results had been shown in same study. study regarding the proportion of unrecognized people with hypertension (7%) with male predominant which was consistent with results reported in USA [48]. The next in this group (CVDs) is the coronary heart diseases with a prevalence 15% which was nearly similar to the study from UK 12.6% (28) but was lower than that reported from Kuwait 22.5% [46]. While stroke was representing 2.7% of total NCDs in this study with prevalence of 5% which was higher than that reported from UK 1-2% [28] and lower than that from USA >9% [49] and similar to results from South Africa 4% (37).

CVDs are on the top as a cause of death globally. Nevertheless, they can be preventable through addressing the behavioral risk factors, but in high risk people, early detection is essential (WHO 2016).

The 2nd prevalent type of chronic NCDs was diabetes with prevalence (31.2%) with no significant difference; females were slightly higher than males (51.5 % vs. 48.5%) among geriatric people in this study. Although Iraq is considered as one of Middle East countries that characterized by high prevalence of diabetes [50], this study revealed a lower prevalence rate of diabetes than that reported in Kuwait 50.6% for geriatric age group [46] and Kingdom of Saudi Arabia 50.4% [51]. Nevertheless, it was higher than the prevalence reported from other studies: 27.4% in Tunisia [52], 25.9 in USA [53], 17% Egypt (26), 7.2% in South Africa [37]. One of the most important problems of diabetes is that many individuals remain undiagnosed until the development of complications or admission to hospital for other reasons and this may have attributed to laboratory errors, inability to access medical care, asymptomatic or minimal ignored symptoms. Studies showed that the prevalence of unrecognized diabetes 6-42% before presentation [54]. In this study, the proportion of patients with unrecognized diabetes was 7.5% with prevalence (2.4%) which was lower than that reported by (CDC - 2014) which was 27.8% [55].

The 3rd prevalent NCDs were musculoskeletal disorders with prevalence (18.3%) and significantly more common in

female. These diseases are more common in elderly and constitute a major cause of pain and disability [56]. Although it was a common problem and represented the 3rd prevalent chronic morbidity in this study, it was surprisingly much lower than that reported from many studies. 49.7% by CDC [57], 45.35 Egypt (26), (44.6% Bangladesh [38], 44.1% Nigeria (45), 30.2% India [58]. This difference may arise from the difference in the design of the study and the criteria of inclusion and exclusion and definition of cases that included in the study were the only the documented cases that met the definition of chronic NCDs was reported.

Chronic respiratory diseases were the fourth prevalent group in the list chronic NCDs revealed by this study with prevalence (6. 7%).The main two conditions were the COPD and asthma. The later was more prevalent (5% vs. 1.7%). However, the prevalence of asthma in this study was similar to that reported in Uk 5% [28], South Africa 4.9% (37) and in Egypt 5.6% [26] while the prevalence of COPD was lower than that estimated by CDC in United states 3.1-9.2% [59] and this difference may be due to the low prevalence rate (14%) of tobacco smoking among the individuals in the studied sample as compared to that in USA 19.5% [60]. Both conditions were distributed differently with the gender, asthma was more common in female (71.4% vs. 26.6%) while COPD was predominantly in males (57% vs. 43%) and the smoking habits were significantly (p= 0.001) more in males than in females (82% vs. 12%) and by this argument can explain the difference with the recent studies of WHO that proposed the equal distribution of COPD in both sexes due to the recent increase in smoking habit among women [61].

More than three quarters (77.8%) of elderly in the sample were complaining of vision problems, but only 7% have a definite diagnosis of cataract making the prevalence of this condition (12.8%). With no significant difference among both genders, it was the most prevalent condition among all other diseases of sensory organs. It was higher than that reported from Egypt 10.6% (26) and similar to the results from India 12.9% (35) but lower than that from Australia 16% [62] and European countries 19.3% [63].

The importance of cataract in geriatric people, it is the leading cause of 51% of blindness globally [64]. However, it can be

preventable or at least to delay the onset of cataract through the intervention with common risk factors such as prolong use drugs like steroid and chlorpromazine, diabetes, smoking, and prolong exposure to sunlight [62]. More studies and investigations are necessary to identify these risk factors and to deal with a large proportion of older people who complaining of vision problems. Unfortunately, similar problem regarding the hearing problems in the studied geriatric population, about one third 31.7% complaining from hearing problems.

Chronic urological conditions constitute 6.1% from total chronic NCDs in the sample study with prevalence (11.1%) with similar proportion 11.1% was complaining from bladder.outlet.symptoms.However,chronic rostatitis in men were the most prominent urological condition in the elderly sample in the present study (3.8%) which was within the average worldwide prevalence 2.2-9.7% [65] Followed by urinary stone with prevalence 2.4% which was lower than that reported from other studies in Iraq [66] but both studies showed that the urinary stone was significantly higher in males. As it is known that there is a chance of 50% recurrence of urinary stone for patient presented for the first time, further studies and investigations are required to identify the causes and risk factors particularly in males to prevent or at least to reduce the possibility of recurrence.

In this study, geriatric assessment showed more than one third 36.4% of the geriatric populations under study were complaining from mental illness symptoms related to depression and about one quarter 22.9% from memory problems. Surprisingly, only 0.5% of them were documented to have clinical depression with current treatment which was lower than the average worldwide prevalence (4.7-16%) for depression in elderly people [67]. This is may be consistent with the studies reported from CDC 2015 which was stated that the depression is often misdiagnosed and undertreated. Meanwhile, older people often share similar belief of being natural events of advancing age and no need for treatment, but really it is a true medical condition and not part of ageing and highly treatable.

Falls in elderly people are the major contributor for fatal and nonfatal injuries worldwide. WHO studies showed that the

global prevalence of fall in elderly was 28-35% annually [68]. The Present study revealed the prevalence of at least one fall in the past year was 30%. Although it was higher than that reported from Egypt 5.1% in 2015 [26] but consistent with that from WHO. It is so important issue with significant impact on the elderly life. It was estimated to be the cause for 40% deaths related injuries [68]. Meanwhile, it can be preventable, causes and risk factors are easily identified such as muscle weakness. Polypharmacy. Impaired vision, poor lightening, diminishes sensation in foot and alcohol.

Less than (5year) prevalence of cancer in the studied population was estimated to 0.9%. A similar result reported from India 0.7% (35), Kosovo 1.6% [69] and lowers than that from Egypt 2.8% (26) and UK 3% (28).

By performing a logistic analysis, the significant association with the current occupation, education and ability to access medical care was disappeared; probably they were confounded by other variables such as, the BMI, socio-economic status or family history which showed a significant association with the occurrence of NCDs

## Conclusion:

High prevalence of chronic NCDs and other geriatric problems that, intern, surely have significant impact on the patients themselves, their families and on the health care systems. The most prevalent conditions were the cardiovascular diseases, diabetes, musculoskeletal, cataract and chronic urological diseases.

Hypertension and diabetes were on the top and they are together with increasing prevalence of obesity and smoking are the leading pathway toward the more serious conditions like CHD which are also highly prevalent in this area.

This study also revealed that there was a substantial proportion of patients with unrecognized hypertension and diabetes and probably other mental illnesses that remain unrecognized.

## Recommendations:

Activate the geriatric health care by provision the PHCs or at least in every hospital with a geriatric clinic with well-trained doctors in the field of geriatrics and take the responsibility for:

**A.** Regular checks up to ensure early detection of chronic conditions.

**B.** Provision the geriatric health need with easy accessibility.

**C.** Public health education to change the lifestyle behaviors.

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## الخلاصة:

**دراسة مدى انتشار الأمراض المزمنة غير المعدية بين الناس المسنين في مدينة الناصرية وتقييم الوضع الصحي العام لهم وتقييم خدمات الرعاية الصحية المقدمة لهذه الفئة من السكان.**

**المواد والأساليب: دراسة مقطعية وصفية وتحليلية من خلال اجراء المسح السكاني للعوائل في بعض الاحياء السكنية. وقد أجريت هذه الدراسة في منطقة حضرية جغرافيا من مدينة الناصرية التي تبعد عن العاصمة بغداد ٣٦٠ كم جنوبا. تمت الدراسة خلال فترة امتدت لأكثر من سنة، (من ١ ايلول ٢٠١٥ إلى نهاية ايلول )٢٠١٦. تم جمع البيانات من عينة تمثيلية من ٤٢٣ من الاشخاص اللذين تتراوح أعمارهم ٦٠ سنة فما فوق ومن خلال أخذ عينات متعددة المراحل(عنقودية).**

**النتائج: كان معدل انتشار الأمراض غير المعدية المزمنة بمعدل شيوع ٨٩٪ بين الأشخاص المسنين. الامراض الاكثر شيوعا بين المسنين كان في مقدمتها الحالات الخمسة التالية: ارتفاع ضغط الدم (٦٧٪)، ومرض السكري (٣١.٢%)، وأمراض العضلات والعظام (١٥.٤٪)، وأمراض القلب (١١.١٪)، وإعتام عدسة العين (١٢.٨٪. وكان معدل انتشار وجود مرضين او أكثر في آن واحد (mutimorbidity) بنسبة شيوع ٥٩٪. اما أعراض ومشاكل الشيخوخة الرئيسية: مشاكل في الرؤية (٧٧.٨٪)، والشعور بالحزن أو الاكتئاب (٣٦.٤٪)، والسمع (٣١.٧٪)، والسقوط (٣٠٪)، مشاكل في الذاكرة (٢٢.٩٪)، والأعراض البولية (١١.١٪**

**اثبتت هذه الدراسة (الخلاصة) ان معدل انتشار الأمراض غير المعدية المزمنة في مدينة الناصرية كانت مرتفعة ومثيرة للقلق وخاصة أمراض القلب والأوعية الدموية والتي تحتاج إلى الجهود الفعلية والتركيز في مجال الوقاية وكذلك تحسين وتعزيز نظام الرعاية الصحية خاصة في مجال الرعاية الصحية لكبار السن للحد من الإصابة بالأمراض المزمنة ومضاعفاتها وأثرها السلبي على الحياة والتطور الاقتصادي.**