Risk Factors' estimation of Non Communicable Diseases in Al-Basrah Province/ Iraq During 2020-2021

Sadiq Abdul Ameer Rahmah[1], Shrouk Abdulrazak Hassan Alibraheem[2], Rajaa Ahmed Mahmoud[3]

[1]M.Sc. Student Department Community Health Techniques, College of Health & Medical Tech/Basrah, South Technical University, Iraq, [2]D.R. Lect.Department Medical Laboratory Techniques, College of Health & Medical Tech/Basrah, South Technical University, Iraq, [3]D.R.lect. Department Community Medicine, Al- Zahraa College of Medicine, University of Basrah, Iraq

Abstract

Background: Non communicable diseases such as cardiovascular disease, cancers, diabetes, and respiratory diseases are the leading causes of morbidity and mortality worldwide. They share risk factors such as unhealthy diet, physical inactivity, smoking, and harmful alcohol use. The share of these risk factors raises the probability of developing non-communicable diseases. The aim of study to assess non communicable diseases risk factors in Al-Basrah province during 2020-2021.

Methods: A cross sectional study was implemented among 250 respondents aged from 18 years and above according to random sampling method. Data was collected according to face -face interviews with those attended to different primary health care centers in Al-Basrah province from September 2020 to February 2021.

Results: The study found 134(53.6%) respondents suffering from at least one of selected non communicable diseases due to higher increase in behavioral risk factors. The proportion of participants with unhealthy diet was 211(84.4%) while for overall salt intake was 207 (82.8%). the prevalence of a currently smoker was 60 (24%) among participants and higher in males than females while for a currently alcohol consumption the prevalence was 1 (0. 4%).the prevalence of physical inactivity was 176 (70.4%) and this percentage higher among females. The prevalence of overweight and obesity (BMI>25 kg/$m^{2)}$ was 35.6% and 38% and this proportion was higher among females than males.

Conclusion: Non communicable diseases risk factors were alarming increases among population of Al-Basrah and this increase due to social transition and eating habits without any affective programs for prevention of these risk factors and control of non-communicable diseases.

Keywords: *Non communicable diseases, risk factors, Basrah.*

Introduction

Non-communicable diseases (NCDs) are diseases or medical conditions that is not infectious and cannot be passed from person to person. Currently (NCDs) are the major cause of mortality and disease burden worldwide, the four major types of (NCDs) include: cardiovascular disease, cancer, diabetes, and respiratory disease. [(1)] The causes of NCDs are multifactorial; these diseases may arise from

Corresponding author:
Shrouk Abdulrazak Hassan Alibraheem
altyye149@gmail.com;
shrouk.albraheem@stu.edu.iq

a combination of underlying, non-modifiable and modifiable risk factors. [2] Non-modifiable factors are those over which a person has no influence, such as age, gender, race, and genetic, Modifiable indicators were those that can be modified by individuals, such as behavior, socioeconomic, and cultural influences ,the four major NCDs are linked to preventable lifestyle risk factors such as an unhealthy diet, lack of physical activity or poor physical exercise, obesity, and overweight, smoking, and unsafe alcohol use, all of which require a plan to reduce [3,4]In Iraq, lifestyle and eating habits have led to an increase in the number of non-communicable diseases over the decades, Rapid increase in the prevalence of some non-communicable diseases such as cancer, diabetes, respiratory diseases, and cardiovascular diseases collectively cause half of the deaths. About a third of these die before reaching the age of 70 regardless of the gaps in medical care and the population's knowledge of non-communicable diseases [5]

Objectives of this study was to estimate the prevalence of risk factors of non-communicable in Basrah / Iraq during 2020-2021.

Material and Methods

The Study design was a cross sectional study was conducted in Basrah province during the period from September 2020 to February 2021.

Ethical consideration

Legal permission was obtained from Southern Technical University, the Ministry of Health, and the Public Health Department in Basra to conduct the research.

Study sample

The study included 250 attendants to Basrah Primary Health Care Centers. Study sampling was a random sample method. The total sample was conducted according to the equation of the minimum size of the sample collected randomly to cover all parts of Basrah province.

$$N= P (1-P) (Z/E)^2 \quad (6)$$

Data Collection

Data collected from interviews of people who attended the (PHCCs) by Questionnaire was prepared according to the WHO stepwise survey for chronic disease, Questionnaire included three-step to provide information from participants. Step1 include socio-demographic characteristic such as age group, gender, material state, education level, residence and employment state. Step 2 includes the history of chronic disease (cardiovascular disease, cancer, diabetes mellitus, hypertension, asthma, and epilepsy). Step 3 include most risk factor contributing with chronic disease (obesity, salt intake, unhealthy diet, physical inactivity, and stress) from participant different parts of Basrah.

Limitation of study

The study was implemented during the COVID-19 pandemic that makes face-face interviews more difficult. missing in patients with cancer diseases because fair from infection.

Statistical Analysis

Data of the study were collected and analyzed by Microsoft Excel 2016, and SPSS version 23to estimate (mean, ± standard deviation SD, and median) with frequency and percentage. The coloration between a variable of data by chi-square test with p.value<0.05.

Results

The founding of the study found the respondent rate (96%) from 260 respondents, the percentage of female was138 (55%) and male was112 (45%), according to age the highest percentage 59 (23.6%) was found to be among the age group of (50-59) while lowest percentage 35 (14%), regarding to

marital status the highest percentage was 195 (78%) in currently married while lowest found to be among Divorce was 8(3.2%), however, for education level the highest percentage was 76 (30.4%)found in not read or write while lowest in postgraduate was 1(0.4%),according to employment status the highest percentage was found in non-employee 169(67.7%) while lowest percentage in student 1(0.4%), Over 189 (76%) of the sample was from Basra's city center. as shown in Table (1).

Table 1: - The socio-demographic characteristics of the study sample.

N	Parameter		Frequency(N) N=250	Percent(%)
1	Age (Mean ±SD with (Median)) in years		44.944±14.82(45)	
2	Age group	18-28	35	14
		29-39	57	22.8
		40-49	56	22.4
		50-59	59	23.6
		60-69	26	10.4
		>70	17	6.8
3	gender (Mean±SD)	Male(47.67±14.484)	112	44.8
		Female(42.73±14.783)	138	55.2
4	Marital status	Single	21	8.4
		Married	195	78
		Divorce	8	3.2
		Widower	26	10.4
5	Education level	Not read or write	76	30.4
		Primary certificate	58	23.2
		Intermediate certificate	37	14.8
		Secondary certificate	27	10.8
		Diploma degree	28	11.2
		Bachelor's degree	23	9.2
		Post graduate	1	0.4

Cont... **Table 1: - The socio-demographic characteristics of the study sample.**

6	Employment status	Employee	58	23.2
		Non-employee	169	67.6
		Other	22	8.8
		Student	1	0.4
7	Residence	Center of Basrah	189	75.6
		Shatt Al-Arab	25	10.0
		Al Qurna	1	0.4
		Al zubair	35	14.0

The Prevalence of obesity and overweight 95 (38%) and 89 (35.6 %) was more than twice higher in the study population when compared to overweight 65 (26%) BMI was significantly higher in a female with a mean of BMI 29.91± 6.04 than the male with a mean of BMI 28.05± 4.66 as shown in table (2)

Table (2) Distribution of overweight and obesity in study sample according to BMI.

N	BMI (kg\m2)	Male		Female		Total	P.value
		N	%	N	%		
1	Underweight	0	0.0%	1	100%	1 0.4%	0.016
2	Normal weight	34	52.3%	31	47.7%	65 26%	
3	Over weight	48	53.9%	41	46.1%	89 35.6%	
4	Obesity	19	32.2%	40	67.8%	59 23.6%	
5	Obesity II	9	36.0%	16	64.0%	25 10%	
6	Obesity III	2	18.2%	9	81.8%	11 4.4%	
7	Mean±SD	28.05± 4.66		29.91± 6.04		29.07± 5.53	

Pearson Chi-Square test, df=5, n=250

The prevalence of behavioral risk factor was highly increased in both female and male in the population of Basrah with a higher percentage of unhealthy diet 211 (84.4%) and the prevalence of salt intake was higher than recommended by who (10 grams per day) was 207 (82.8%) of study sample while fruit and vegetable more than 175 (70%)with weekly frequent (less than five per week) according to fat and sugar intake highly prevalence of eating food with high fat and sugar equal to 203 (81.2%)on the other hand decline in fast food and soft drink to 125(50%) with the quarantine because of COVID 19 pandemic. The prevalence of a

current smoke was 60(24%) with significantly higher in males than females. While alcohol consumption only 1(0.4%) of the sample study. Regarding stress more than one to third of the sample with 184(73.2%) suffering from stress issues as presented in table (3).

Table (3) Distribution of Behavioral risk factor in the study sample

N	Parameter		Frequency	Percentage
1	Diet	Healthy	39	15.6%
		Unhealthy	211	84.4%
2	Salt intake	Yes	207	82.8%
		No	43	17.2%
3	Frequency of salt intake	I don't eat	43	17.2%
		Moderate	157	62.8%
		Always	50	20. %
4	Fruit& vegetable intake	Yes	221	88.4%
		No	29	11.6%
5	Frequency Fruit& vegetable intake	I don't eat	28	11.2%
		Daily	47	18.8. %
		Weekly	175	70%
6	Fat & sugar intake	Yes	203	81.2%
		No	47	18.8%
7	Fast food intake	Yes	123	49.2%
		No	125	50 %
		I don't know	2	.8%
8	Soft drink consumption	Yes	132	52.8%
		No	118	47.2%
9	Smoker status	Yes	60	24. %
		No	190	76. %
10	Alcohol consumption	Yes	1	.4%
		No	249	99.6%
11	Physical activity status	Yes	74	29.6%
		No	176	70.4%
12	Type physical activity	Low	2	2.7%
		Moderate	63	85.1%
		High	9	12.2%
13	Suffering from Stress	Yes	184	73.2%
		No	42	16.8%
		I don't know	25	10 %
14	Type of Stress	Nervous	170	84 %
		Quite	40	16 %

Our study found a highly significant relationship between high salt intake, fat and sugar intake, and junk food intake with non-communicable diseases. While they are not statistically significant in terms of other variables available (diet, low fruit and vegetable intake, smoke status, physical inactivity, and stress) as shown in Table (4).

Table (4): - Relationship between non-communicable diseases and their risk factors in the study sample.

N	Subject		Presences of Non-communicable diseases				Total	Df	P-value
			Yes		No				
			n	%	n	%			
2	Diet	Healthy	25	10.0%	14	5.6%	39	1	0.152
		Unhealthy	109	43.6%	102	40.8%	211		
3	salt intake	Yes	101	40.4%	106	42.4%	207	1	0.001
		No	33	13.2%	10	4.0%	43		
4	Fruit& vegetable intake	Yes	116	46.4%	105	42.0%	221	1	0.331
		No	18	7.2%	11	4.4%	29		
5	Fat & sugar intake	Yes	104	41.6%	107	42.8%	211	1	0.001
		No	30	12.0%	9	3.6%	39		
6	Fast food intake	Yes	56	22.4%	67	26.8%	123	2	0.036
		No	77	30.8%	48	19.2%	125		
		I don't know	1	.4%	1	.4%	2		
7	Soft drink consumption	Yes	66	26.4%	66	26.4%	132	1	0.220
		No	68	27.2%	50	20.0%	118		
8	Smoke status	Yes	35	14.0%	25	10.0%	60	1	0.390
		No	99	39.6%	91	36.4%	190		
9	Alcohol consumption	Yes	1	.4%	0	0.0%	1	1	0.350
		No	133	53.2%	116	46.4%	249		
10	Physical activity status	Yes	37	14.8%	37	14.8%	74	1	0.450
		No	97	38.8%	79	31.6%	176		
11	Suffering from Stress	Yes	101	40.4%	82	32.8%	183	2	0.504
		No	19	7.6%	23	9.2%	42		
		I don't know	14	5.6%	11	4.4%	25		

N=250

Discussion

This study was reported a high prevalence of self-reported non-communicable diseases among the population of Basrah and this increase due to highly increase in risk factors associated with NCDs, a better understanding of the socio-demographic as shown in table (1) determinants of disease risk factors in communities would enable us to identify at-risk populations that assist in controlling the epidemic of non-communicable diseases. [7] In most recent studies, there was a significant association between urbanization and most marine risk factors such as obesity, lack of physical activity, and decreased fruit and vegetable intake, Prevalence of non-communicable diseases, especially cardiovascular disease, type 2 diabetes, and hypertension. [8] According to the prevalence of overweight and obesity our founding higher than a survey of non-communicable diseases risk factor in 2015[9] and comparable with previous local surveys in Erbil region and Bagdad [10] and more than in Iran 59.3 % in 2016 [11] and Morocco (35.5 % overweight \ 20.6 % obesity) but less than the prevalence in Kuwait (37 % overweight \40.3 %obesity) [12] and in Jordan (>75 % overweight \obesity [13], according to physical activity, a recent study demonstrated that those who was physically inactive are nearly twice as likely to die as those who exercise. For the time being, there were worldwide plans to get the physical inactivity level down to 10 % by the year 2025. [14] the prevalence of physical inactivity among respondents higher than in Lebanon was 61.0% and Egypt was 32.1%, Palestine 46.5%. [15,16,17] Because there was no major program promoting physical activity in Basrah, more emphasis should be placed on promoting it. Policies aimed at improving health, Regrinding to smoke one from four respondents were a currently smoker and higher than WHO step survey 2015 in Iraq was 21%[18] and Palestine 20.2%and less than the prevalence in Lebanon was 38.5% and in similarity with Egypt 24.4%. [15,16,17] for Alcohol consumption in similarity with national step survey 2015 was0.6% because of agriculture of Arab word and Islamic religion that Promot to avoid Alcohol consumption [19] While the prevalence of low fruit and vegetable intake was less than recommended by those who were five Servings per day. According to studies, eating fruits and vegetables in abundance has been shown to reduce the risk of coronary heart disease, obesity, and possibly some types of cancer and heart diseases [20] so it makes sense to eat the recommended amount daily, Affordability and accessibility were crucial in low-and middle-income countries. [21]

Conclusions

The study found that the percentage of non-communicable diseases was high among the population of Basrah especially in the elderly, this increase is attributed to an increase in risk factors due to social transformation and eating habits without any effective programs to prevent these risk factors and control non-communicable diseases.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both MOH and MOHSER in Iraq

Conflict of Interest: None

Funding: Self-funding

References

1- Kim HC, Oh SM. Non communicable diseases: current status of major modifiable risk factors in Korea. Journal of preventive medicine and public health. 2013 Jul;46(4):165.

2- Allen L. Are we facing a non communicable disease pandemic?. Journal of epidemiology and global health. 2017 Mar 1;7(1):5-9.

3- Global regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2016: a systematic analysis for the

Global Burden of Disease Study 2016. Lancet. 2017;390(10100):1345 – 422. https://doi.org/10.1016/s0140-6736(17)32366-8.

4- Ghasemian A, Ataie-Jafari A, Khatibzadeh S, Mirarefin M, Jafari L, Nejatinamini S, et al. National and sub-national burden of chronic diseases attributable to lifestyle risk factors in Iran 1990–2013; study protocol. Arch Iran Med. 2014;17(3):146–58.

5- Bhattarai MD. Epidemic of non-communicable diseases and its control. Kathmandu University Medical Journal. 2012;10(2):1-3

6- Ogston SA. Adequacy of Sample Size in Health Studies.

7- Murphy GA, Asiki G, Ekoru K, Nsubuga RN, Nakiyingi-Miiro J, Young EH, Seeley J, Sandhu MS, Kamali A. Sociodemographic distribution of non-communicable disease risk factors in rural Uganda: a cross-sectional study. International journal of epidemiology. 2013 Dec 1;42(6):1740-53

8- Caprara G. Mediterranean-Type Dietary Pattern and Physical Activity: The Winning Combination to Counteract the Rising Burden of Non-Communicable Diseases (NCDs). Nutrients. 2021 Feb;13(2):429.

9- World Health Organization. Noncommunicable diseases risk factors STEPS Survey, Iraq 2015. Update. 2015..http://www.who.int/chp/steps/Iraq_2015_STEPS_Report.pdf?ua=1

10- Shabu, S. Prevalence of overweight/obesity and associated factors in adults in Erbil, Iraq: A household survey. Zanco J Med Sci. 2019;23(1):128-134. https://doi.org/10.15218/zjms.2019.017

11- Djalalinia S, Saeedi Moghaddam S, Sheidaei A, Rezaei N, Naghibi Iravani SS, Modirian M, Zokaei H, Yoosefi M, Gohari K, Kousha A, Abdi Z, Naderimagham S, Soroush AR, Larijani B, Farzadfar F. Patterns of Obesity and Overweight in the Iranian Population: Findings of STEPs 2016. Front Endocrinol. 2020 Feb 26;11:42. doi: 10.3389/fendo.2020.00042

12- Weiderpass E, Botteri E, Longenecker JC, Alkandari A, Al-Wotayan R, Al Duwairi Q, Tuomilehto J. The prevalence of overweight and obesity in an adult Kuwaiti population in 2014. Frontiers in endocrinology. 2019 Jul 9;10:449. Doi: 10.3389/fendo.2019.00449.

13- Ajlouni K, Khader Y, Batieha A, Jaddou H, El-Khateeb M. An alarmingly high and increasing prevalence of obesity in Jordan. Epidemiol Health. 2020;42:e2020040. doi: 10.4178/epih.e2020040

14- World Health Organization. Diet, nutrition, and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation. World Health Organization; 2003 Apr 22

15- Mansour Z, Said R, Dbaibo H, Mrad P, Torossian L, Rady A, Dufouil C. Non-communicable diseases in Lebanon: results from World Health Organization STEPS survey 2017. Public Health. 2020 Oct 1;187:120-6.

16- World Health Organization. Non-communicable diseases risk factors: STEPS survey Egypt 2012. 2012

17- World Health Organization. Non-communicable diseases risk factors: STEPS survey Palestine 2011. 2011

18- Al-Badri HJ, Khaleefah Ali MA, Ali AA, Sahib AJ. Socio-economic determinants of smoking among Iraqi adults: Data from Non-Communicable Risk Factor STEPS survey 2015. PLoS One. 2017 Sep 28;12(9):e0184989

19- Probst C, Manthey J, Rehm J. Understanding the prevalence of lifetime abstinence from alcohol: An ecological study. Drug and alcohol dependence. 2017 Sep 1;178:126-9.

20- World Health Organization. Diet, nutrition, and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation. World Health Organization; 2003 Apr 22.

21- Lachat C, Otchere S, Roberfroid D, Abdulai A, Seret FM, Milesevic J, Xuereb G, Candeias V, Kolsteren P. Diet and physical activity for the prevention of noncommunicable diseases in low- and middle-income countries: a systematic policy review. PLoS Med. 2013 Jun 11;10(6):e1001465.