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ORIGINAL RESEARCH

Relationship Between Lifestyle and Incidence Rate of Asymptomatic Hypertension among Early Middle Age People

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ABSTRACT

Background: Asymptomatic hypertension is characterized as increased systolic blood pressure equal to or more than 140 mmHg or diastolic blood pressure equal to or more than 90 mmHg without immediate signs of end-organ injury.
Objectives: To estimate the incidence rate of asymptomatic hypertension and to assess the lifestyle level and its relation to the incidence rate of asymptomatic hypertension among early middle age people.
Methodology: A cross sectional study design was performed and a non / probability (convenience approach) sampling technique with a size of sample 270 subjects who visited Merjan and AL Imam AL Sadiq Teaching Hospitals from 1 December 2022 to 30 March 2023. Data was gathered by two techniques, an interview and developed a questionnaire, and taking two different blood pressure readings for every participant.
Results: Overall incidence rate of asymptomatic hypertension was 16.58%. The study found a moderate lifestyle (54.81%) and a highly significant relationship between lifestyle items and the incidence rate of asymptomatic hypertension (p-value = <0.0001) among early middle age people.
Conclusion: High incidence rate of asymptomatic hypertension in Hilla City and it is more common in females than male and lifestyle play an important role in developing asymptomatic hypertension among early middle age.
Recommendations: The study recommends activating preventive strategies such as early detection for asymptomatic hypertension in primary health care centers and hospitals and focusing on conducting educational health programs about the seriousness of the disease and promoting optimum and healthy lifestyles, including healthy eating habits, physical activities, stopping smoking, and following a healthy sleep pattern as well as, conducting a periodic monitoring for the level of cholesterol and other laboratory tests that help to early detection of high blood pressure.

Keywords: asymptomatic hypertension, early middle age, incidence rate, lifestyle.

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INTRODUCTION

Hypertension is a hidden killer in both developed and underdeveloped countries due to its high prevalence and role as an indicator of risk for kidney, cardiovascular, and cerebrovascular illness, it represents a major threat to global health (Negash et al., 2023).

Nearly 1.13 billion individuals worldwide suffer from hypertension, one of the major warning signs for cardiovascular illnesses. Unexpectedly, the majority of hypertension cases are found in low- and middle-income nations (Bhattacharya et al., 2022).

The World Health Organization predicts that hypertension contributes to 7.1 million deaths annually, or 13% of all fatalities worldwide, making it a significant public health concern (Ismael & Qadir, 2015).

Asymptomatic hypertension, which has a very low chance of resulting in acute damage to the end-organ, is chronically high blood pressure that is uncontrolled. Like other chronic conditions, it is best managed over time by a primary care provider (Grant & Borghei, 2017).

According to two recent reports, the asymptomatic hypertension prevalence in hospitals is between 50 and 78%. Although the increase prevalence, there is a dearth of information to instruct clinicians on how to properly manage for asymptomatic hypertension (Jacobs et al., 2022).

Hypertension prevalence gradually rises with age. The Framingham study's findings show that the residual lifetime hazard of acquiring hypertension is 90% for middle-aged people (Hattab, 2015).

Lifestyle changes and choices have a significant impact on hypertension prevalence. Insufficient physical activity, becoming overweight, smoking, and inadequate nutrition have been linked to an elevated hazard of hypertension evenly early adulthood according to several studies (Akbarpour et al., 2018).

Urbanization and modernization in Iraq are changing the country's food and physical activity patterns, especially in the cities. Like in many other developing nations, hypertension has emerged as a significant public health issue due to greater longevity, and the effect of Western lifestyle factors like smoking cigarettes (Radhi et al., 2019).

Chronic diseases linked to a poor lifestyle are almost always a burden on the healthcare system in underdeveloped nations. Based on the Iraqi national study of the non-transmissible illness hazard factor, 40.4 percent of the Iraqi population has hypertension, making it the most frequent disease in the world (Thabit & Al- Janabi, 2018).

According to the World Health Organization, 1.13 billion people globally suffer from hypertension; the majority of these people (two-thirds) reside in (low and middle) income nations and Iraq is one of these nations. According to WHO, hypertension affects up to 40% of Iraqis over the age of 25. They also noted that women were more likely than men to have hypertension (Amen et al., 2021).

AIMS OF THE STUDY

The study aims to estimate the incidence rate and assess lifestyle level and its relation to the incidence rate of asymptomatic hypertension among early middle age people.

METHODOLOGY

Study Design:

A cross sectional approach was utilized.

Study Sample:

Non/probability (convenience approach) sampling technique of 270 participant reveals asymptomatic hypertension whose early middle age ranged from 25 to 51 years who visited Merjan and AL Imam AL Sadiq Teaching Hospitals at the Emergency and outpatients' consultation areas.

Ethical Consideration:

One of the most crucial concerns in nursing research is ethical consideration, which attempts to protect the rights of both the researcher and the participant. Obtaining approval from the Ethical Committee of Kufa University/Faculty of Medicine and Prior oral informed permission was also taken from each participant.

Study Instrument:

A mercury sphygmomanometer and develop questionnaire were involved in the study. The questionnaire is divided into two parts:

Part 1: Demographic Characteristics: including the following items (age, gender, education level, residence, marital status, occupation, weight, and height to identify body mass index (BMI).

Part 2: The questionnaire on lifestyle includes three domains: physical activity contains four items developed from (WHO, 2017; Angosta & Serafica, 2017), smoking includes five items (Miad et al., 2022) and sleep pattern contains four items from (Fan at el., 2020).

Data Collection:

Data was gathered by two techniques: interview and questionnaire with taking two different blood pressure readings for every participant, one reading was taken in the morning and another second was taken in the afternoon of the same day. Data were collected for the period of 1 December 2022, to 30 March 2023.

Validity and Reliability

The face validity of the study is determined by a panel of (14) experts. Sphygmomanometer had taken two different readings from the same patient to make sure reliability and showed the same reading, the researcher's measurement was compared with an expert's measurement to give more reliability, which call (inter examiner).

Statistical Analysis

current study analyzed data through the use of statistical package of social sciences version 20. Two kinds of statistics; Descriptive Statistical: is presented by percentages, frequencies, mean, and stander deviation. Inferential Statistical Data includes: one sample t-statistical test to identify the relationship between items lifestyle assessment and incidence rate of asymptomatic hypertension.

RESULTS

Table (1) shows that the total incidence rate of asymptomatic hypertension was 16.58 % which females were more rate than males (9.52 % and 7.06 %) respectively.

Table (2) displays the statistical distribution of the study sample by their socio-demographic data. It states that the percentage of the early middle-aged people are ages 46 and more (32.96%), females (57.41%), those living in urban areas (67.41%), those with primary school graduate (32.96%), their occupation is mostly housewife (46.30%), those with married marital status (87.41%), and who have obesity (84.44%).

Table (3) shows the assessment (mean of scores) of physical activity among the early middle age people; it reveals that the assessment of the (2,3

and 4) items was (Low), while Item number one was (moderate). This assessment is based on the statistical scoring system that indicates the total mean of scores (=< 1.66) as (Low); those between (1.67-2.33) as (moderate), those with scores more than (2.33) as (High).

Table (4) shows the assessment of overall items (mean of scores) of physical activity among the early middle age people; it reveals that the assessment was (Low).

Table (5) shows the assessment of smoking among early middle age people; it reveals that the assessment of the (2,3, and 4) items was (High), while Item number one was (moderate) and Item number five was (Low). This assessment is based on the statistical scoring system that indicates the total mean of scores (=< 1.66) as (Low); those between (1.67-2.33) as (moderate), those with scores more than (2.33) as (High).

Table (6) shows the assessment of overall items of smoking among early middle age people; it reveals that the assessment was (High). This assessment is based on the statistical scoring system that indicates the total mean of scores (=< 1.66) as (Low); those between (1.67-2.33) as (moderate), those with scores more than (2.33) as (High).

Table (7) shows the assessment of the Sleep Pattern; it reveals that the assessment of the (2,3 and 4) items was (Low), while Item number one was (moderate). This assessment is based on the statistical scoring system that indicates the total mean of scores (=< 1.66) as (Low); those between (1.67-2.33) as (moderate), those with scores more than (2.33) as (High).

Table (8) shows the assessment of overall items of the Sleep Pattern among Early Middle Age People; it reveals that the assessment was (Low). This assessment is based on the statistical scoring system that indicates the total mean of scores (=< 1.66) as (Low); those between (1.67-2.33) as (moderate), scores more than (2.33) as (High).

Table (9) shows the assessment of overall domains of Lifestyle; it reveals that the assessment was (moderate). This assessment is based on the statistical scoring system that indicates the total mean of scores (=< 1.66) as (Low); those between (1.67-2.33) as (moderate), those with scores more than (2.33) as (High).

Table (10) shows that there is a high significant relationship between physical activity and incidence rate (t value =41.925, df=269, p- value= <0.0001) as well as shows that there is a high significant relationship between smoking and incidence rate of asymptomatic hypertension (t value =79.687, df=269, p- value= <0.0001) and that there is a high significant relationship between Sleep Pattern and incidence rate of asymptomatic hypertension (p- value= <0.0001).

DISCUSSION:

The present study demonstrates that the overall incidence rate of asymptomatic hypertension in AL- Hilla city is 16.58% with rates of 9.52% for females and 7.06% for males during the period from 1 December 2022 to 30 May 2023. It was found that 16% out of 1628 people has asymptomatic hypertension, which means that it is a percentage that draws attention to the spread of this dangerous disease between these ages, and the highest percentage was among women because it is usually protected by hormones so they do not show signs and symptoms, in addition to the fact that bad cholesterol is less than men, this result agrees with AL-Isawi et al.,2023.

Table (2) presents that more than one-third (32.96%) were age 46 and more had asymptomatic hypertension. This result may be due to epidemiological status and the nature of the disease, which often spreads at this age. In addition, people at this age practice unhealthy eating habits while neglecting periodic blood pressure checkup. Our findings agree with the studies Souffront et al., 2016; Lopes et al.,2021. Regarding gender, the outcome of

the current study shows that females are more than males in the percentage of 57.41, and 42.59 respectively. This result reflects that these women are in the early period of menopause in addition to the factors of obesity, lack of movement, and the phenomenon of smoking. These results agree with Almomaniet al.,2022 while Sadiq & Lafta, 2017 conducted in Baghdad disagrees that shows men more than women 50.6%.

Asymptomatic hypertension in urban areas has a percentage more than in rural areas (67.41 and 32.59, respectively). This reflects that the setting of the study sample was in the city center and it is obvious that most of the sample is from urban areas, this result aligned with the study performed by Ali et al., 2022 in Iraq.

Regarding the level of education (32.96%), occupation (46.30%), and marital status (87.41%). These results state that there is a correspondence for the factors of educational level, employment status, and marital status for this sample, in which women predominate, preferring marriage over completing education, this outcome is agreed with Ali et al., 2022; Ardahan&Konal, 2019; Saka et al., 2020; Chobufo et al., 2020; Almomani et al., 2022; Shukuriet al.,2019.

Regarding body mass index, the study results demonstrate that the majority of respondents were obese (84.44%), this corresponds to the most in our study being housewives' women. The issue of obesity and hypertension may be influenced by the lack of physical activity, unhealthy food, and changing hormones, this outcome agrees with Saka et al., 2020 while the study Aung, 2022 disagrees and reported about 59.1% was a normal BMI.

According to physical activity in Table (3,4), shows the great majority of respondents has low physical activity (91.11%). This may be due to most of our samples being women, and the nature of women in our society does not have a culture of agility and physical fitness, in addition to the lack of sports halls and places designated for exercising, this result agrees with Rajati et al., 2019.

Regarding smoking pattern, the result reveals more than half of the participants has high smoking (72.22%). This can be interpreted by smoking is considered an attractive phenomenon for our people especially nowadays after the increased spread of coffee shops. This is inforced by the finding of a study conducted by Chobufo et al., 2020.

Results study in Tables (7,8) state that the sleep patterns of the subjects has low (67.41%). This may be due to Poor financial status, self-awareness of health, life conflicts, and increase dependence on social media and electronic games for a long time which contributed to changing sleep patterns, this outcome agrees with the study Na et al., 2022.

Table (9) reveals that the overall assessment of lifestyle subjects had moderate (54.81%), this result is considered a total of all components of the lifestyle that we talked about previously and most of them were low, this finding agrees with Radhi et al., 2019 that was studied in the southern Iraqi city of Al-Amarah.

Table (10) states the relationship between physical activity and the incidence rate of asymptomatic hypertension has a high significance (p- value>0.0001), which may be due to the modern lifestyle of the Iraqi community that a person seldom exercises and engages in enough physical activity this leads to increasing obesity, this outcome agrees with study Septiawan et al., 2022 while the study Sitorus et al., 2021 disagrees and found no relationship.

The highly significant relationship between smoking and the incidence rate of asymptomatic hypertension may be due to smoking is commonly related to culture in our community and there is scientific evidence between smoking and the occurrence of asymptomatic hypertension, this result is in line with Sitorus et al., 2021 and study states the high significant relationship between sleep patterns and the incidence rate of asymptomatic hypertension

(p-value < 0.0001), can be interpreted by the respondent's stating insomnia, snoring, and sleepiness during the day and this leads to a change in the physiological processes within the body, this outcome agrees with Li & Shung, 2021.

CONCLUSIONS:

Asymptomatic hypertension in Hilla City is more common in females than males. Age ranging from 46 to 51 is more exposed to this disease in addition the majority of the participants suffer from obesity and found a highly relationship of significant between lifestyle and incidence rate of asymptomatic hypertension.

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TABLES:

Table (1): Incidence rate of asymptomatic hypertension of participants

Gender	New cases of Asymptomatic Hypertension	Total Population at Risk	Incidence Rate %
Male	125	1628	7.06 %
Female	155	1628	9.52 %
Total	270	1628	16.58 %

Incidence Rate (%) = No. of new cases / total population at risk within a given period of time x 100.

Table (2): The Socio-demographic characteristic of participants (n= 270)

Socio-demographic characteristic		Freq.	%
Age Groups (Years)	<= 30	58	21.48
	31 - 35	27	10.00
	36 - 40	52	19.26
	41 - 45	44	16.30
	46 and More	89	32.96
	Mean ± SD	39.86 ± 8.2	
Gender	Females	155	57.41
	Males	115	42.59
Residence	Rural	88	32.59
	Urban	182	67.41
	250,000 - 499,999 IQD	112	41.48
	500,000 – 749.999 IQD	56	20.74
	750,000 – 999.999 IQD	28	10.37
	1,000,000 _ 1,499,999 IQD	7	2.59
	1,500,000 IQD and more	4	1.48
Level of education	Illiterate	18	6.67
	Read and write	22	8.15
	Primary school graduate	89	32.96
	Intermediate school graduate	49	18.15
	Secondary school graduate	31	11.48
	Institute graduate	32	11.85
	University graduate and above	29	10.74
Occupation	employed governmental	73	27.04
	Free Business	72	26.67
	Housewife	125	46.30
	Unmarried	22	8.15
	Divorced	5	1.85
	Widowed	7	2.59
BMI	Normal	5	1.85
	Overweight	37	13.70
	Obese	228	84.44
	Mean ± SD	31.07 ± 3.25	
Total = 270			

Table (3): The Mean scores for assessment of physical activity of participants

Items		Freq.	%	MS	Assess.
1. You do light physical activities like walking.	Always	93	34.44	2.03	Moderate
	Sometime	92	34.07		
	Never	85	31.48		
2. You do moderate physical activities at least 30 minutes daily or 5 days a week like brisk walking, swimming, and cycling.	Always	11	4.07	1.14	Low
	Sometime	15	5.56		
	Never	244	90.37		
3. You do vigorous physical activities at least 20 minutes daily or 3 days a week like jogging (running), tennis ball, and football.	Always	4	1.48	1.03	Low
	Sometime	1	.37		
	Never	265	98.15		
4. You do activities to increase muscle strength once a week or more, such as lifting weights, or resistance exercises.	Always	11	4.07	1.10	Low
	Sometime	5	1.85		
	Never	254	94.07		

MS: Mean of Scores; Low: MS =<1.66; Moderate: MS = 1.67-2.33; High: MS ≥ 234.

Table (4): Overall Items Mean scores for assessment of physical activity among early middle age people (n=270)

Overall Items		Freq.	%	MS	Assess.
physical activity	Low	246	91.11	1.33	Low
	Moderate	17	6.30		
	High	7	2.59		

MS: Mean of Scores; Low: MS =<1.66; Moderate: MS = 1.67-2.33; High: MS ≥ 2.34.

Table (5): The Mean scores for assessment of smoking of participants

Items		Freq.	%	MS	Assess.
1. You do not smoke.	Always	161	59.63	2.24	Moderate
	Sometime	12	4.44		
	Never	97	35.93		
2. You smoke less than 10 cigarettes every day.	Always	31	11.48	2.71	High
	Sometime	16	5.93		
	Never	223	82.59		
3. You smoke less than 20 cigarettes every day.	Always	7	2.59	2.79	High
	Sometime	42	15.56		
	Never	221	81.85		
4. You smoke 20 cigarettes and more every day.	Always	56	20.74	2.56	High
	Sometime	7	2.59		
	Never	207	76.67		
5. You smoke hookah.	Always	145	53.70	1.66	Low
	Sometime	71	26.30		
	Never	54	20.00		

MS: Mean of Scores; Low: MS =<1.66; Moderate: MS = 1.67-2.33; High: MS ≥ 2.34.

Table (6): The Overall Items Mean scores for assessment of smoking

Overall Items		Freq.	%	MS	Assess.
Smoking	Low	8	2.96	2.40	High
	Moderate	67	24.81		
	High	195	72.22		

MS: Mean of Scores; Low: MS =<1.66; Moderate: MS = 1.67-2.33; High: MS ≥ 2.34.

Table (7): The Mean scores for the assessment of Sleep Patterns

Items		Freq.	%	MS	Assess.
1. You get enough sleep every day.	Always	126	46.67	2.26	Moderate
	Sometime	88	32.59		
	Never	56	20.74		
2. You snore while sleeping.	Always	184	68.15	1.40	Low
	Sometime	64	23.70		
	Never	22	8.15		
3. You have trouble falling asleep or you wake up in the middle of the night.	Always	214	79.26	1.22	Low
	Sometime	52	19.26		
	Never	4	1.48		
4. You have excessive sleepiness during the day.	Always	217	80.37	1.22	Low
	Sometime	47	17.41		
	Never	6	2.22		

MS: Mean of Scores; Low: MS =<1.66; Moderate: MS = 1.67-2.33; High: MS ≥ 2.34.

Table (8): The Overall Items Mean scores for assessment of Sleep Patterns

Overall Items		Freq.	%	MS	Assess.
Sleep Pattern	Low	182	67.41	1.53	Low
	Moderate	83	30.74		
	High	5	1.85		

MS: Mean of Scores; Low: MS =<1.66; Moderate: MS = 1.67-2.33; High: MS ≥ 2.34.

Table (9): The overall domain mean scores for assessment of the Lifestyle.

Overall Domains		Freq.	%	MS	Assess.
Lifestyle	Low	121	44.81	1.70	Moderate
	Moderate	148	54.81		
	High	1	0.38		

MS: Mean of Scores; Low: MS =<1.66; Moderate: MS = 1.67-2.33; High: MS ≥ 2.34.

Table (10): Relationship between lifestyle items and incidence rate of asymptomatic hypertension using one-sample t-statistical test (n=270)

Lifestyle items scores	Test Value = 16.584			
	t-test	df	P-value	Mean Difference
Physical Activity	41.925	269	<0.0001 (HS)	27.582
Smoking	115.719	269	<0.0001 (HS)	63.374
Sleep Pattern	50.752	269	<0.0001 (HS)	34.249

Table (10) provides that there is a high significant relationship between physical activity and incidence rate (t value =41.925, df=269, p- value= <0.0001) as well as shows that there is a high significant relationship between Smoking and incidence rate (t value =79.687, df=269, p- value= <0.0001) and that there is a high significant relationship between Sleep Pattern and incidence rate of asymptomatic hypertension (t value =50.752, df=269, p-value= <0.0001).