به نام خدا

استاد راهنما : سرکار خانم دکتر خیلتاش

دستیار : راضیه علی نژاد

عنوان مقاله

- Social Determinants of Health and Diabetes: Results from a Cohort Study in Iran
  - عوامل اجتماعی تعیین کننده سلامت و دیابت
  - برگرفته از مطالعه کوهورت هویزه

Introduction

- Diabetes is one of the most common endocrine disorders
- It is increasing rapidly in the world, especially in middle- and low-income countries
- Diabetes is the seventh cause of death in the world, and according to the (WHO)

Introduction

- number of people with diabetes 422 million people
- increase to 693 million people by 2045
- more than 2 million diabetic patients in Iran in 2000
- 6.4 million in 2030 in iran
- Currently, about 5 million people in Iran

Introduction

- diabetes is considered a costly disease for the care system all over the world.
- social factors affect people's health
- Different indices are used to determine the socioeconomic status (SES) in different countries:
- England (job index), America (job, monthly income, consumption, and education level)
- Iran (wealth (assets) index)

Methods
Study design and sampling

- The present study is a cross-sectional analysis of the data from the Hoveyzeh cohort center, one of the sites of Prospective Epidemiological Research Studies in Iran
- The Hoveyzeh Cohort Study (HCS) is an ongoing prospective population-based cohort study of 10,009 adults (age 35–70 years) recruited from May 2016 to August 2018, designed to assess noncommunicable diseases in the southwest of Iran.

Methods

Study design and sampling

- The study enrolled those who met the inclusion criteria using convenient sampling methods.
- person's age, sex,marital status, education ,BMI, MET Index, Townsend deprivation
- index, wealth status (wealth index).

The definition of diabetes

- Diabetes is defined as fasting blood sugar equal to or more than 126 mg/dL or the use of blood sugar-lowering drugs by the participants under study

Assessment of socioeconomic factors

- The Townsend deprivation index (unemployment, non-car ownership, non-home ownership, and overcrowding)
- The wealth index(refrigerator, freezer, television, motorcycle, mobile phone, car, vacuum cleaner, internet access, washing machine, computer, home ownership, and the number of rooms)

Covariates

- age, gender and BMI
- BMI below 18.5 is underweight, while the healthy range is 18.5–24.9, 25.0–29.9 is overweight, and more than 30 is considered obese.

Physical activity

- To measure participants' physical activity, the International Physical Activity Questionnaire was used in this cohort.
- The questionnaire included questions about activity at work, housework, and exercise
- The MET Index was calculated to express the intensity of physical activities.

Statistical analysis

- Mean and Standard deviation for quantitative variables
- frequency and percentage were used for categorical variables.
- normality of data was checked using the Shapiro–Wilk test
- The proportions were compared using the Chi-square test.

Statistical analysis

- To explore the factors affecting diabetes, bivariate logistic analysis was performed with demographic variables
- age,education, marital status, wealth, Townsend, and BMI were significantly associated with diabetes.
- variables associated with diabetes in the bivariate analysis with $P < 0.25$ were entered into a backward stepwise logistic regression model.

	All, n (%)	Diabetic (n=2226), n (%)	Nondiabetic (n=7783), n (%)	p
Age group 35–39		177 (8.0)		<0.001
40–44	2025 (20.2)		1736 (22.3)	
45–49				
50–54				
55–59		431 (19.4)		
60–64				
≥65	714 (7.1)		449 (5.7)	
Marital status Single		333 (15)	916 (11.8)	<0.001
Married		1893 (85)	6867 (88.2)	
Education Illiterate and	7874 (78.6)	1834 (82.4)	6040 (77.6)	<0.001
primary school				
Secondary school				
High school diploma				
University				
Gender Male				0.544
Female	5983 (59.8)	1343 (60.3)	4640 (59.6)	
BMI Normal				<0.001
Abnormal		1842 (82.7)	5924 (76.1)	
MET Q1		784 (35.2)		<0.001
Q2				
Q3				
Q4			2081 (26.7)	
Wealth Poorest				0.031
Poor			1618 (20.8)	
Moderate				
Affluent	2023 (20.2)	457 (20.5)		
Most affluent				
Townsend Most affluent		675 (30.3)		<0.001
Affluent				
Moderate				
Deprived				
Most deprived	2580 (25.8)		2084 (26.8)	

Multiple logistic regression analysis for the assessment of factors affecting diabetes

Variable	COR (95% CI)	AOR (95% CI)*	*P*
MET			
Q1	2.30 (2.01–2.64)	1.61 (1.39–1.86)	<0.001
Q2	1.44 (1.25–1.66)	1.23 (1.06–1.43)	0.005
Q3	1.17 (1.02–1.39)	1.11 (0.95–1.29)	0.16
Q4	1	1	
Townsend index			
Most affluent	1.65 (1.45–1.89)	1.39 (1.21–1.60)	<0.001
Affluent	1.33 (1.15–1.54)	1.25 (1.08–1.46)	0.003
Moderate	1.04 (0.89–1.21)	0.98 (0.84–1.14)	0.82
Deprived	0.92 (0.77–1.10)	0.93 (0.78–1.11)	0.46
Most deprived	1	1	
Age group			
35–39	1	1	<0.001
40–44	1.63 (1.34–1.99)	1.61 (1.31–1.96)	<0.001
45–49	2.66 (2.19–3.22)	2.61 (2.16–3.17)	<0.001
50–54	3.55 (2.93–4.31)	3.42 (2.81–4.16)	<0.001
55–59	4.97 (4.09–6.03)	4.72 (3.88–5.75)	<0.001
60–64	5.50 (4.45–6.80)	5.14 (4.14–6.39)	<0.001
≥65	5.78 (4.65–7.19)	5.4 (4.3–6.77)	<0.001
BMI			
Below 18.5	1	1	
18.5–24.9	1.60 (0.96–2.69)	1.91 (1.13–3.23)	<0.001
25–29.9	2.34 (1.40–3.89)	2.94 (1.74–4.95)	<0.001
≥30	2.55 (1.53–4.25)	3.25 (1.92–5.47)	<0.001

*P-value<0.05 significant in multiple logistic regression. AOR: Adjusted odds ratio, COR: Crude odds ratio, BMI: Body mass index, MET: Metabolic equivalent of task, CI: Confidence interval

Discussion

- The present study aimed to identify social factors affectingdiabetes in the population covered by a cohort study in Iran.
- age, physical activity level, BMI, and wealth status are related to diabetes status.

Limitations

- study was conducted in one geographical area
- in the age group between 35 and 70 years
- The sampling method was convenient
- The participation of women was more than men.

Conclusion

- The findings showed that the risk for diabetes is increased with older ages, lower physical activity levels, higher BMI, and higher social class. Future studies are needed to confirm such an observation.
- Perhaps social class might play different roles in low-, middle-, and high-income countries.
- Health promotion interventions to reduce diabetes should incorporate socioeconomic situations in their plans in a deprived area like Hoveyzeh, Iran.


THANK YOU
FOR YOUR
ATTENTION