

Income and Education : influence in cardio-vascular risk factors of MS and T2DM

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Abstract

Studies showed association of income and education with risk factors for metabolic syndrome mainly in women. This research aims to analyze association of income and education in patients with metabolic syndrome and type 2 diabetes mellitus. Sample: 200 patients. It is a cross-sectional study. The higher the educational level and lower the income, more risk factors were under control. Possibly better management of income, thereby better choices of healthy items, was related to these results.

Key words:

risk factors in metabolic syndrome and type 2 diabetes mellitus, income, education

Introduction

Studies regarding obesity, metabolic syndrome and multi-morbidities exposed that income and educational level are associated with worse health, mainly amongst middle age women. However, there are few studies relating education and income with multi-morbidities. Even though it was observed that higher the age, lower the income and the level of education, worse is the state of health and increased the number of morbidities. One interesting study mentioned that the way to manage income was more important that the educational level and the income itself. Other showed that in women major life events such as economic difficulties, work environment problems were associated with metabolic syndrome.

The main goal of the present research was to analyze repercussions of educational level and income considering risk factors for cardiovascular diseases, metabolic syndrome and type 2 diabetes mellitus.

Method: sample of 200 subjects. The data was partially collected by semi-open questionnaire and reports about items of health of each patient.

Results and Discussion

Controlled health state or one uncontrolled risk factor were present until 47 years old ; two or more risk factors out of controll were present in patients around 48 years old. Controlled subjects had prevalently high school level of education; also patients with dyslipidemia. Analyzing the level of income, controlled subjects prevalently had until one minimal salary. Patients with hypertension or dyslipidemia had prevalently 2-4 minimal salaries of income, followed by 5-8 minimal salaries (little lesser). Two or more risks factors were prevalent among patients with 2-4 minimal salaries of income. Clearly controlled risk factors were prevalent among patients with high school and until one minimal salary. Hypertension was found between patients with high school level of education and 2-4 minimal salaries. Two or more risk factors were prevalent amongst patients with uncompleat basic school, or high school, and 2-4 minimal salaries of income. Amongst patients with 2 uncontrolled risk factors, there was pre-hypertension and higher levels of LDL. Between 3 risk factors patients the main aspects were: pre-hypertension , higher dyastolic pressure and higher triglycerides, compared with other patients.

	Controlled	Hypertension	Dyslipidemia	Hypertension / Dyslipidemia	Type 2 diabetes mellitus / Hypertension / Dyslipidemia	p Valor
Age	47,6	47,3	46,9	49,6	48	0,95
Education level						
Ensino Fundamental 1 (basic school)	27,3	25	18	57,1	40	0,0016
Ensino Fundamental 2 (basic school)	27,3	12,5	27	0	12,9	
Ensino Médio (high school)	45,4	37,5	50	35,7	35,7	
Superior (graduation / university)	0	25	4,5	7,1	11,4	
Sample (subjects)	22	8	22	14	70	
Income						
Until one minimal salary*	50	12,5	17,4	26,7	15,9	0,0498
Between 2 - 4 minimal salaries	22,7	50	47,8	53,3	60,9	
Between 5 - 8 minimal salaries	22,7	37,5	30,4	13,3	17,4	
> 9 minimal salaries	4,5	0	4,3	6,7	5,8	
Sample (subjects)	22	8	23	15	69	
Risk factors						
Systolic Pressure	122,5	130	127	131,3	131,8	0,0
Dyastolic Pressure	62,5	50	62	60	66,6	0,0
Cholesterol	150,7	171,7	206	205	189	0,0001
HDL	44,6	45,4	49	42,5	44,1	0,0
Triglycerides	88,9	91,1	146	142,4	191,1	0,0001
LDL	93,4	91	126	135	107	32
Glycemia	84,5	94,9	99,4	109,2	125	0,0
Glycated Hemoglobine	5,7	6,4	5,8	5,6	6,6	0,0001

* Equivalente R\$622 ou \$100

Conclusions

The high school patients with lower salaries presented more controlled health state, probably due to better choices of healthy items than patients with high school and 2-4 minimal salaries which allowed amplified items to choose. Possibly worse selection and income management, resulting in hypertension or more risk factors among them.

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