

# Multiple Rehospitalizations in Patients with Type 2 Diabetes Mellitus Are Related to Socioeconomic Status

Bashkin A.<sup>1,2</sup>, Abu Alhija I.<sup>3</sup>, Obaid H.<sup>1</sup>, Haiek R.<sup>1</sup>, Spitzer Shohat S.<sup>2</sup>

<sup>1</sup>Endocrinology and diabetes unit, Galilee Medical Center, <sup>2</sup>Azrieli Faculty of medicine, Bar-Ilan University, Safed

<sup>3</sup>Internal Medicine C, Galilee Medical Center

## Background

Multiple rehospitalizations of patients with type 2 diabetes mellitus (T2DM) pose a heavy burden on the healthcare system.

## Hypothesis

Among patients with T2DM, socioeconomic status is the main cause of multiple rehospitalizations.

## Methods

This study is based on data collected as part of a nutritional study of hospitalized T2DM patients from the Arab sector up to the age of 65 years. It retrospectively examined the rate of rehospitalizations in the internal medicine division over a three-year period (two years before recruitment to nutritional research and one year after recruitment) and factors associated with the multiple rehospitalizations.

## Results

Among 183 adults with T2DM, who were hospitalized for any reason, low income was found to be most significantly associated with multiple rehospitalizations in the internal medicine division over the three years. Participants with low income (income only from a pension or income up to NIS 4,500) were hospitalized six times more than participants without low income, independent of the following factors: age, sex, obesity, smoking, perception of health status, glycated hemoglobin level, and presence of retinopathy or albuminuria (OR 6.07, 95% CI 2.36-15.61,  $p < 0.001$ ). Other factors that were found to be independently associated with rehospitalizations were perception of poor health status (OR 2.67, 95% CI 1.18-5.99,  $p = 0.018$ ) and microalbuminuria (OR 2.85, 95% CI 1.28-6.33,  $p = 0.01$ ). Increase in age was found to be associated with a decrease in rehospitalizations (OR 0.93, 95% CI 0.87-0.99,  $p = 0.029$ ).

Table 1: Characteristic of the study group

	Mean	SD	Median	Min	Max
Number of hospitalization (n)	2.22	3.49	1	0	18
Age (years)	54.63	6.66	56	29	65
BMI (kg/m <sup>2</sup> )	31.32	5.47	31.17	20.2	51.1
Number of Children (n)	4.55	2.41	4	0	12
A1C (%)	8.24	2.01	8	5.4	13.6
Admission Glucose (mg/dl)	196	127.2	155.5	78.5	694
Urine albumin/creatinine ratio (mg/gr)	294.7	940	27.1	0	6967

Table 2: Multivariable (logistic regression) of association between socioeconomic and clinical factors and recurrent hospitalization (2 or more)

	p	OR	95% CI
Low Income Vs High	<0.001	6.07	2.36-15.61
Age	0.029	0.93	0.87-0.99
Male Vs Female	0.166	1.81	0.78-4.21
Obesity Vs Non	0.959	0.98	0.45-2.12
Smoking Vs Non	0.402	0.68	0.28-1.66
A1C	0.922	1.01	0.82-1.24
DR Vs Non	0.988	0.99	0.38-2.62
Microalbuminuria Vs Non	0.01	2.85	1.28-6.33
Health Status Bad Vs Good	0.018	2.67	1.18-5.99

## Conclusion

Among patients with T2DM, socioeconomic status is the main cause of multiple rehospitalizations, and therefore it seems that an effective intervention to prevent multiple rehospitalizations requires an economic incentive.