

INTRODUCTION

The WHO Global Reports on diabetes 2016 affirms: “Diabetes is on the rise. No longer a disease of predominantly rich nations, the prevalence of diabetes(8,5% for 2014) is steadily increasing everywhere, most markedly in the world’s middle-income countries.

American Diabetes association estimates that in 2018 there are more than 500 million prevalent cases of type 2 diabetes worldwide. According on International Diabetes Federation Type 2 diabetes is more common in adults and accounts for around 90% of all diabetes cases.

OBJECTIVE

To design a predictive model of the in-hospital pharmaceutical expenditure of type II diabetes mellitus, derived from the risk index determined by the associated comorbidities in a high, in a high-complexity hospital in Colombia.

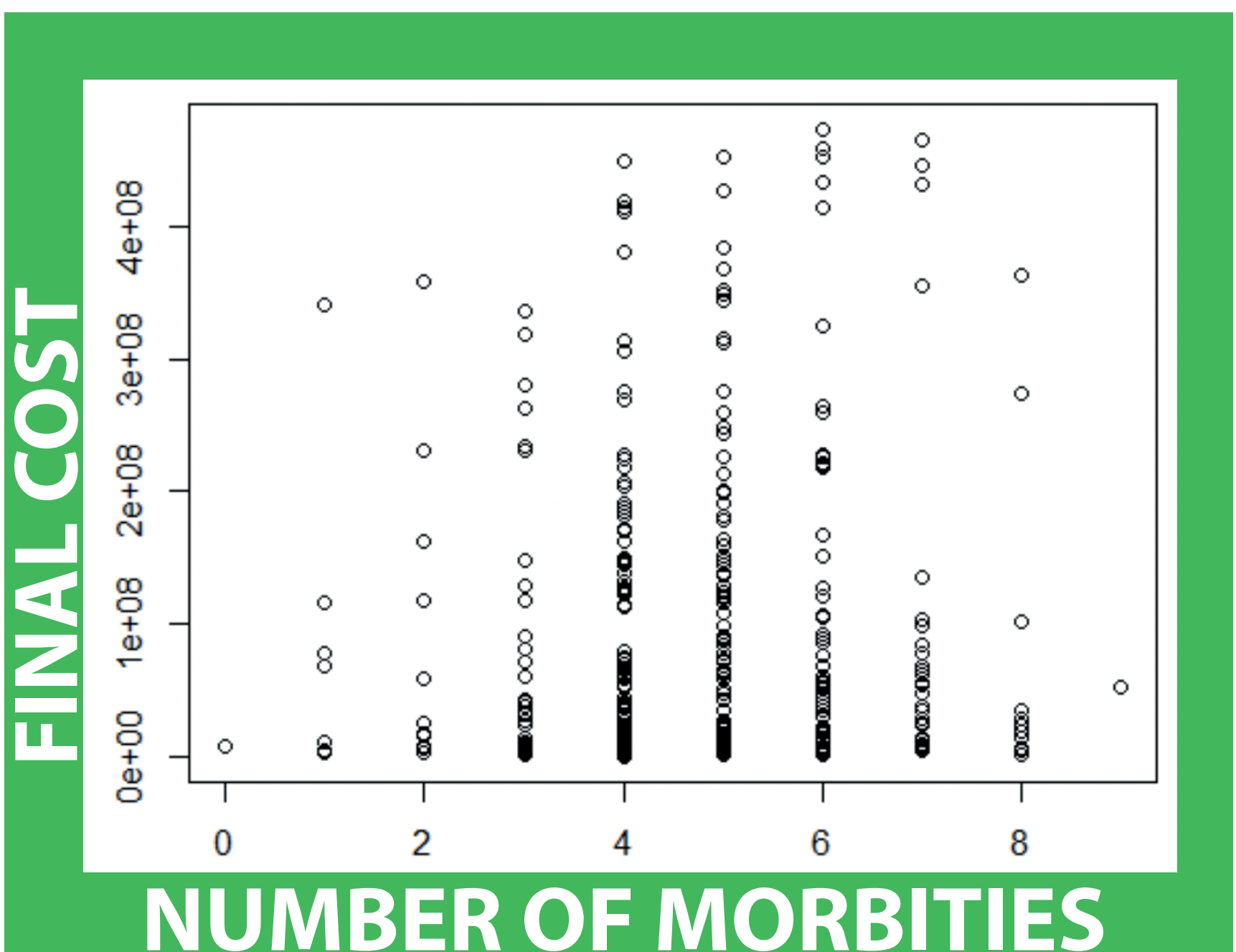
METHODOLOGY

- Observational, cross sectional and population-based study using RWD.
- The study population included patients with T2DM, age ≥ 18 years.
- The data corresponding to the Diabetic patients who were treated in the Mederi hospital in 2017- and 2018-year periods. Was extracted from the information systems of Mederi Hospital Bogotá Colombia (n: 4.758).
- The sample is significantly reduced by prioritizing all records with complete information and that had all the variables chosen for the design of the analytical model and then excluding outliers (n final 438). a univariate and bivariate descriptive analysis was made, followed by the linear regression model.
- Explanatory variables: socio-demographic, analytical and clinical parameters (Cholesterol, Creatinine, HbA1C, Ureic Nitrogen, triglycerides, number of Comorbidities and final cost).

RESULTS

Diabetic patients have an average stay of 5 days. Significant gender differences are observed in the mean stay. The total estimated expense for diabetic patients, with and without associated comorbidities, was US\$ 2,204,860 (30.1%) by 2017 and US\$ 2,192,365 (27.2%) by 2018. Approximately 40% of income is due to 20 major diagnoses resulting in 30% of the total cost. The main co-morbidities associated with diabetes are: Urinary Tract Infection, Hypertension, Heart Failure and Coronary Ischemic Disease. The distribution of patients by sex shows that 52.14% were women and 47.86% were men.

AVERAGE COST OF CARE IN RELATION TO THE NUMBER OF CO-MORBIDITIES ASSOCIATED WITH DIABETES					
N Comorbidities Asociated	N Patients	Percentaje	Cumulative Percentaje	Average Cost Colombian pesos	Average Cost US Dolars
No morbidities	674	14,17	14,17	\$18.467.486,00	\$5.771,09
1 Morbidity	555	11,66	25,83	\$24.818.218,00	\$7.755,69
2 Morbidities	1490	31,32	57,15	\$22.733.542,00	\$7.104,23
3 Morbidities	814	17,11	74,26	\$50.889.894,00	\$15.903,09
4 Morbidities	847	17,80	92,06	\$83.044.461,00	\$25.951,39
5 Morbidities	190	3,99	96,05	\$335.991.005,00	\$104.997,19
6 Morbidities	188	3,95	100,00	\$771.704.929,00	\$241.157,79
Total	4780	100,00			

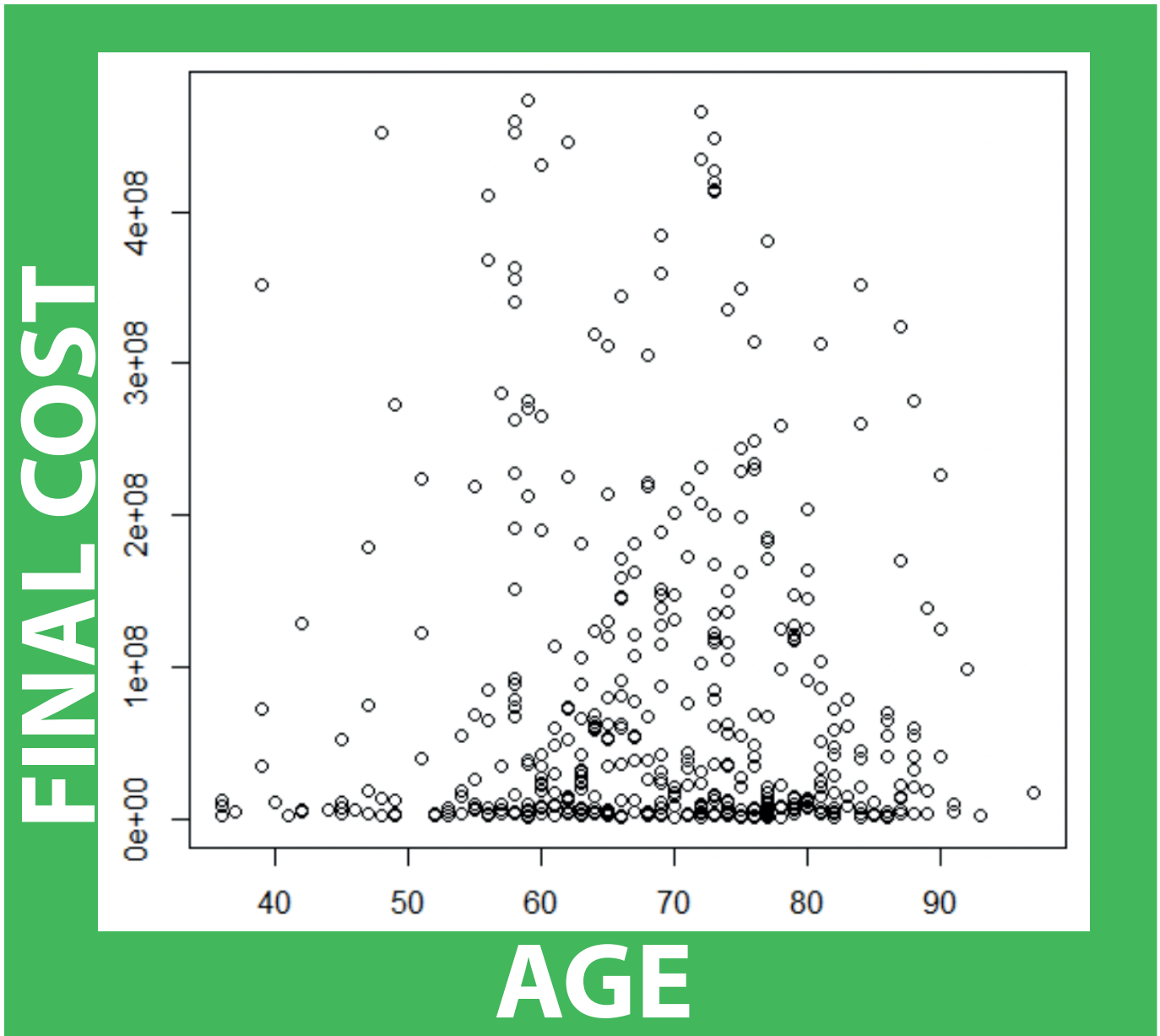


Correlation N Comorbidities - Cost:

A correlation coefficient of 0.10 is found between the two variables, which indicates a positive relationship, that is, direct but very weak. As can be seen in the graph, there is no real trend in the relationship.20 major diagnoses resulting in 30% of the total cost. The main co-morbidities associated with diabetes are: Urinary Tract Infection, Hypertension, Heart Failure and Coronary Ischemic Disease. The distribution of patients by sex shows that 52.14% were women and 47.86% were men.

Correlation Age Cost:

A correlation value of -0.03 is found, i.e. there is a very weak linear relationship between AGE and FINAL_COST VALUE. It is observed in the graph that there does not seem to exist a relation with specific tendency between these two variables.



CONCLUSIONS

- Charlson's age categories 2, 3 & 4, i.e. ages 60 to 89, accounted for 76% of disease cases.
- The number of comorbidities associated with diabetes has a positive correlation with the final cost, but this correlation is weak and not sufficiently explanatory.
- The correlation between the age and final cost variables has a very weak linear relationship.
- The final cost cannot be explained only by the relationships with the age variables and associated comorbidities, a greater amount of information is required to obtain a more consistent predictive model.