

Why Health Literacy Doesn't Predict Patient Satisfaction

Demographic Behavioral data

Prepared By

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Introduction to the Dataset

This dataset includes demographic and behavioral information from 1,000 individuals, covering variables such as age, sex, weight, BMI, education, region, socioeconomic class, physical activity, smoking and drinking habits, health literacy, and patient satisfaction. The goal of this analysis is to explore how demographic and behavioral factors relate to self-reported health outcomes—particularly, the relationship between health literacy and patient satisfaction.

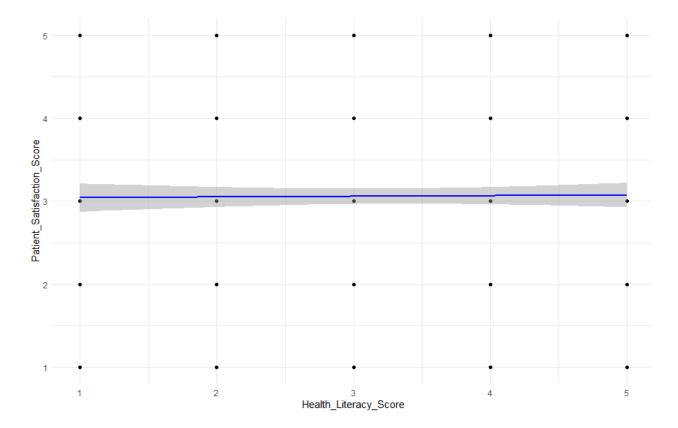
Methods Used for Analysis

- The dataset was imported and cleaned using R (tidyverse), with missing values dropped.
- Categorical variables such as Sex, Region, Socioeconomic, Education,
 Smoking_Status, and Drinking_Status were converted into factor types.
- Descriptive statistics (mean, median, standard deviation) were generated for key continuous variables.
- Two main visualizations were created:
 - A scatter plot with linear regression to examine the relationship between Health Literacy and Patient Satisfaction
 - A bar plot of Education levels to observe distribution across categories
- A Pearson correlation test was used as an advanced statistical insight to measure the strength of association between Health Literacy Score and Patient Satisfaction Score.

Key Results and Figures

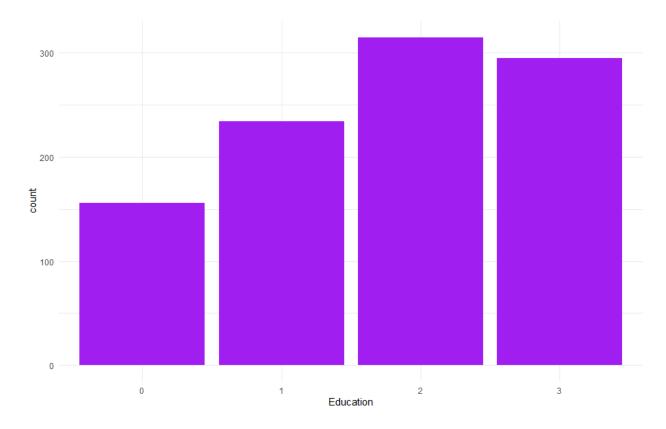
Descriptive Statistics Table

Variable	Mean	Media n	SD
Age (years)	54.80	55	21.34
Weight (kg)	63.88	63	7.42
Height (cm)	153.61	154	11.79
ВМІ	27.44	26.78	4.74
Physical Activity (hrs/week)	7.87	8	4.79
Patient Satisfaction Score (1–5)	3.06	3	1.47
Health Literacy Score (1–5)	3.22	3	1.42



Scatter Plot: Health Literacy vs. Patient Satisfaction

- A linear regression line was added to visualize the trend.
- Points were widely scattered, showing no strong pattern or relationship.



Bar Plot: Education Levels

- The Education variable was visualized using a purple bar plot.
- This shows the distribution of respondents across various educational attainments.

The Pearson correlation between Health Literacy Score and Patient Satisfaction Score yielded the following:

- Correlation coefficient (r): 0.0076
- t = 0.2392
- Degrees of freedom: 998

- p-value: 0.811
- 95% Confidence Interval: [-0.0544, 0.0695]

Interpretation:

- The correlation coefficient is near zero, indicating virtually no linear relationship between health literacy and patient satisfaction.
- The p-value is much greater than 0.05, so we fail to reject the null hypothesis.
- This means that, statistically, health literacy is not a significant predictor of patient satisfaction in this dataset.

Conclusion

This analysis shows that although participants had an average health literacy of 3.22 and patient satisfaction of 3.06 (on a 5-point scale), these two variables are not significantly correlated. Further research could explore whether other factors—such as quality of care, communication with healthcare providers, or personal beliefs—play a stronger role in determining satisfaction.

For better insights, multivariate regression or cluster analysis could be used to capture interactions between demographic and behavioral variables. Future datasets might also consider including more detailed qualitative data or longitudinal follow-up for richer interpretation.