Analysis of Stress Levels Across Socioeconomic Status Groups

Report and Analysis

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This dataset examines whether a person's level of education influences their health literacy—their ability to understand and apply health-related information. Patients were grouped by their highest level of education: uneducated, primary, secondary, and tertiary. Their health literacy scores ranged from uneducated to extremely educated. A one-way ANOVA was conducted to determine if the differences in health literacy across the education levels were statistically significant.

Hypothesis:
Null Hypothesis (H_0):
There is no significant difference in reported stress levels across different socioeconomic groups.

Alternative Hypothesis (H_1):
There is a significant difference in reported stress levels between at least two socioeconomic groups.

In the dataset Demographic Behavioral data Group 010 we have found that:

- Most patients have attained at least a secondary education with 35% classified as secondary
- 30.7% as tertiary
- 14.3% are uneducated indicating a relatively educated population.

Education Level	Percentage (%)	Frequency
Uneducated	14.3	143
Primary	20.0	200
Secondary	35.0	350
Tertiary	30.7	307

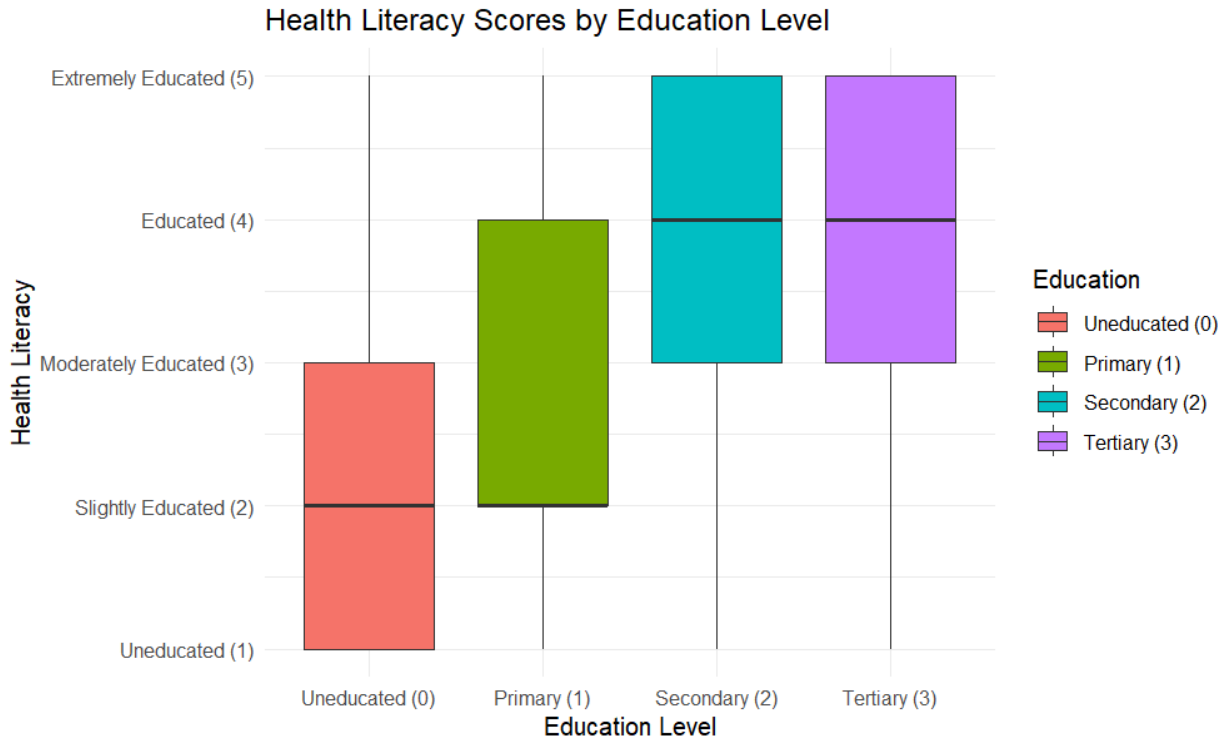
- Largest group is those who are extremely educated (28.5%)
- Smallest is the educated group (12.7%). This suggests that although formal education levels are generally high, health literacy varies more widely.
- This variation highlights that higher education does not always translate directly to higher health literacy emphasizing the need to examine their relationship further through analysis.

Health Literacy Level	Percentage (%)	Frequency
Uneducated	14.2	142

Slightly Educated	19.7	197
Moderately Educated	24.9	249
Educated	12.7	127
Extremely Educated	28.5	285

Boxplot of Health Literacy Scores by Education Level

- Uneducated patients reached a slightly educated score (2) alongside primary educated patients.
- Both groups of patients who received secondary and tertiary education averages at educated (4) health literacy score.



One-way ANOVA

- The F-value is 60.19 is very large which means there is a strong evidence against the null hypothesis
- The p-value is < 2e-16 which means the result is highly significant
- There is a significant difference in health literacy across education levels.

Source	Df	Sum of Squares (SS)	Mean Square (MS)	F-value	p-value
Education	3	304.7	101.56	60.19	< 2e-16

These results show that formal education has a strong influence on a person's ability to understand health information. However, it’s important to note that not all patients with high education automatically had high health literacy, which means other factors like communication barriers, cultural background, or access to information could also play a role.

We therefore reject the null hypothesis and conclude that education level significantly affects health literacy. As a recommendation, health programs should not just rely on a person’s formal education. Instead, health education materials should be tailored based on health literacy assessments, using visuals, native languages, or simpler terms when needed to improve overall health understanding.