What are the steps for reporting logistic regression results in a comprehensive manner?

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Logistic regression is a statistical method used to analyze the relationship between one or more independent variables and a binary outcome variable. When reporting the results of a logistic regression analysis, it is important to present the findings in a comprehensive manner. This involves following a specific set of steps that includes describing the study population, explaining the research question, presenting the statistical model used, providing information on the independent and dependent variables, discussing the results and their significance, and including any limitations of the study. Additionally, it is crucial to include relevant tables and figures to visually represent the data and to support the conclusions. By following these steps, the results of a logistic regression analysis can be reported accurately and comprehensively, providing a clear understanding of the findings.

The Complete Guide: Report Logistic Regression Results

Logistic regression is a type of regression analysis we use when the is binary.

We can use the following general format to report the results of a logistic regression model:

Logistic regression was used to analyze the relationship between , , ... and .

It was found that, holding all other predictor variables constant, the odds of occurring by (95% CI) for a one - unit increase in .

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...

We can use this basic syntax to report the odds ratios and corresponding 95% confidence interval for the odds ratios of each predictor variable in the model.

The following example shows how to report the results of a logistic regression model in practice.

Example: Reporting Logistic Regression Results

Suppose a professor wants to understand whether or not two different studying programs (program A vs. program B) and number of hours studied affect the probability that a student passes the final exam in his class.

He fits a logistic regression model using hours studied and studying program as the predictor variables and exam result (pass or fail) as the response variable.

The following output shows the results of the logistic regression model:

Coefficients:

Estimate Std. Error z value Pr(>|z|)

(Intercept) -2.415 0.623 -3.876 <0.000

program_A 0.344 0.156 2.205 0.027

hours 0.006 0.002 3.000 0.003

Before we report the results of the logistic regression model, we should first calculate the odds ratio for each predictor variable by using the formula eβ.

For example, here's how to calculate the odds ratio for each predictor variable:

Odds ratio of Program: e.344 = 1.41Odds ratio of Hours: e.006 = 1.006

We should also calculate the 95% confidence interval for the odds ratio of each predictor variable using the formula e(β +/- 1.96*std error).

For example, here's how to calculate the odds ratio for each predictor variable:

95% C.I. for odds ratio of Program: e.344 +/- 1.96*.156 =

95% C.I. for odds ratio of Hours: e.006 +/- 1.96*.002 =

Now that we've calculated the odds ratio and corresponding confidence interval for each predictor variable, we can report the results of the model as follows:

Logistic regression was used to analyze the relationship between studying program and hours studied on the probability of passing a final exam.

It was found that, holding hours studied constant, the odds of passing the final exam increased by 41% (95% CI) for students who used studying program A compared to studying program B.

It was also found that, holding studying program constant, the odds of passing the final exam increased by .6% (95% CI) for each additional hour studied.

Note that we reported the odds ratios for the predictor variables as opposed to the beta values from the model because the odds ratios are easier to interpret and understand.

The following tutorials offer additional information on

logistic regression: