

Student Grades Analysis Report

A Data-Driven Approach to Understanding Student Performance

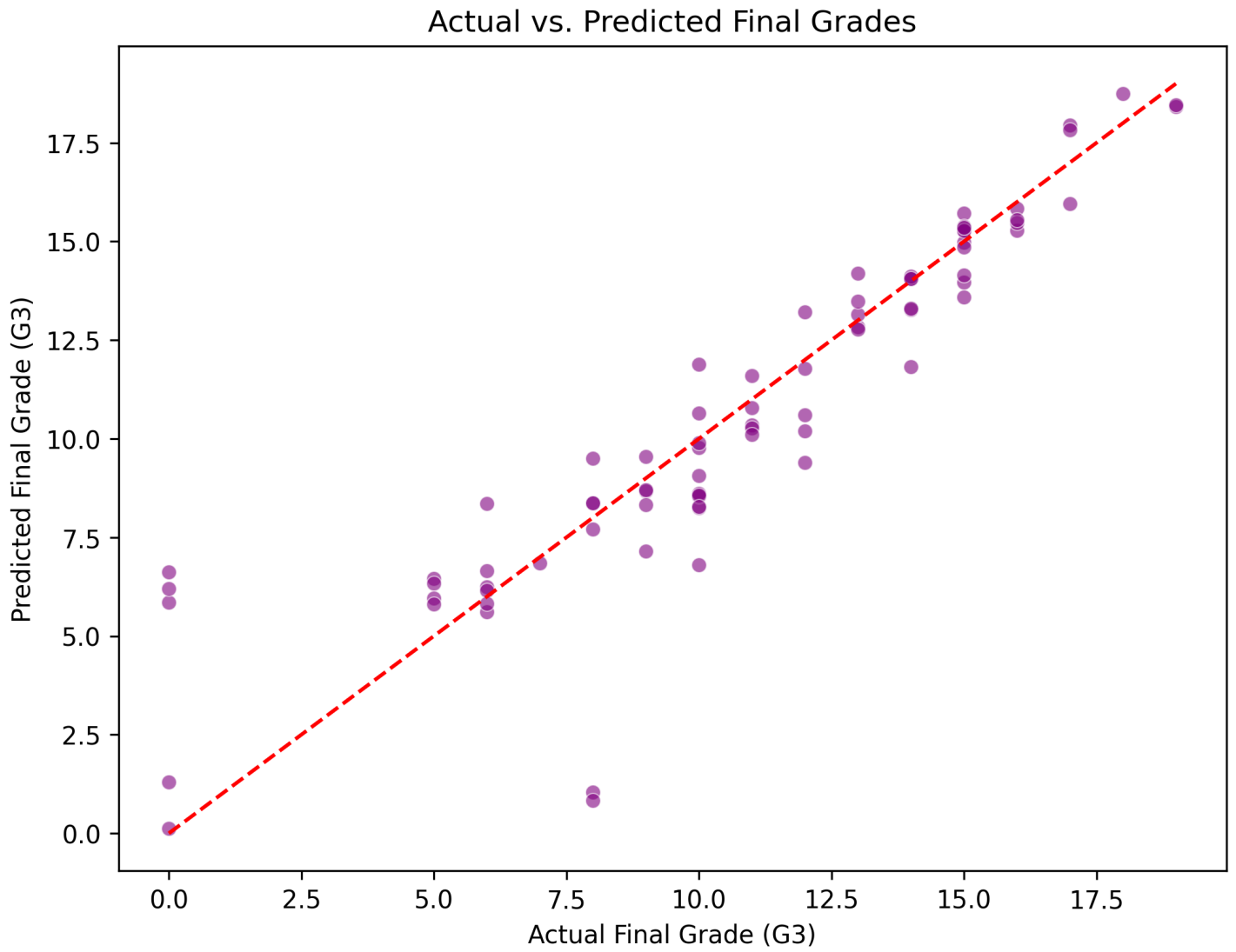
This report analyzes various factors affecting student performance, including parental education, study time, internet access, absences, and more. The visualizations provide insights into trends and correlations that can help educators and students improve academic outcomes.

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Actual vs Predicted Final Grades

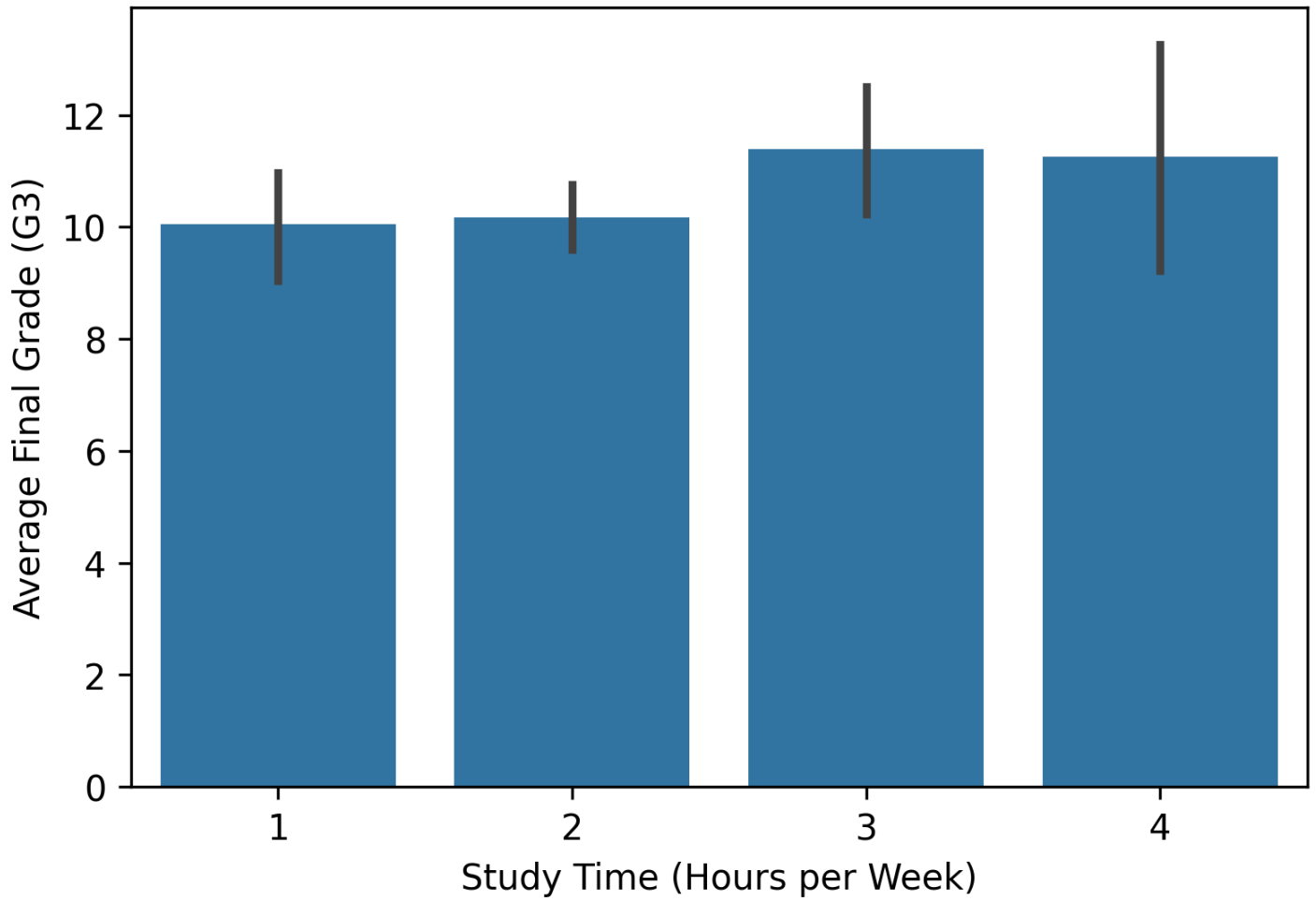
This scatter plot compares the predicted final grades to the actual ones, showing how well the model performed.



Study Time vs Final Grades

This bar chart examines whether students who study more tend to get higher final grades.

More Study Time → Higher Grades?

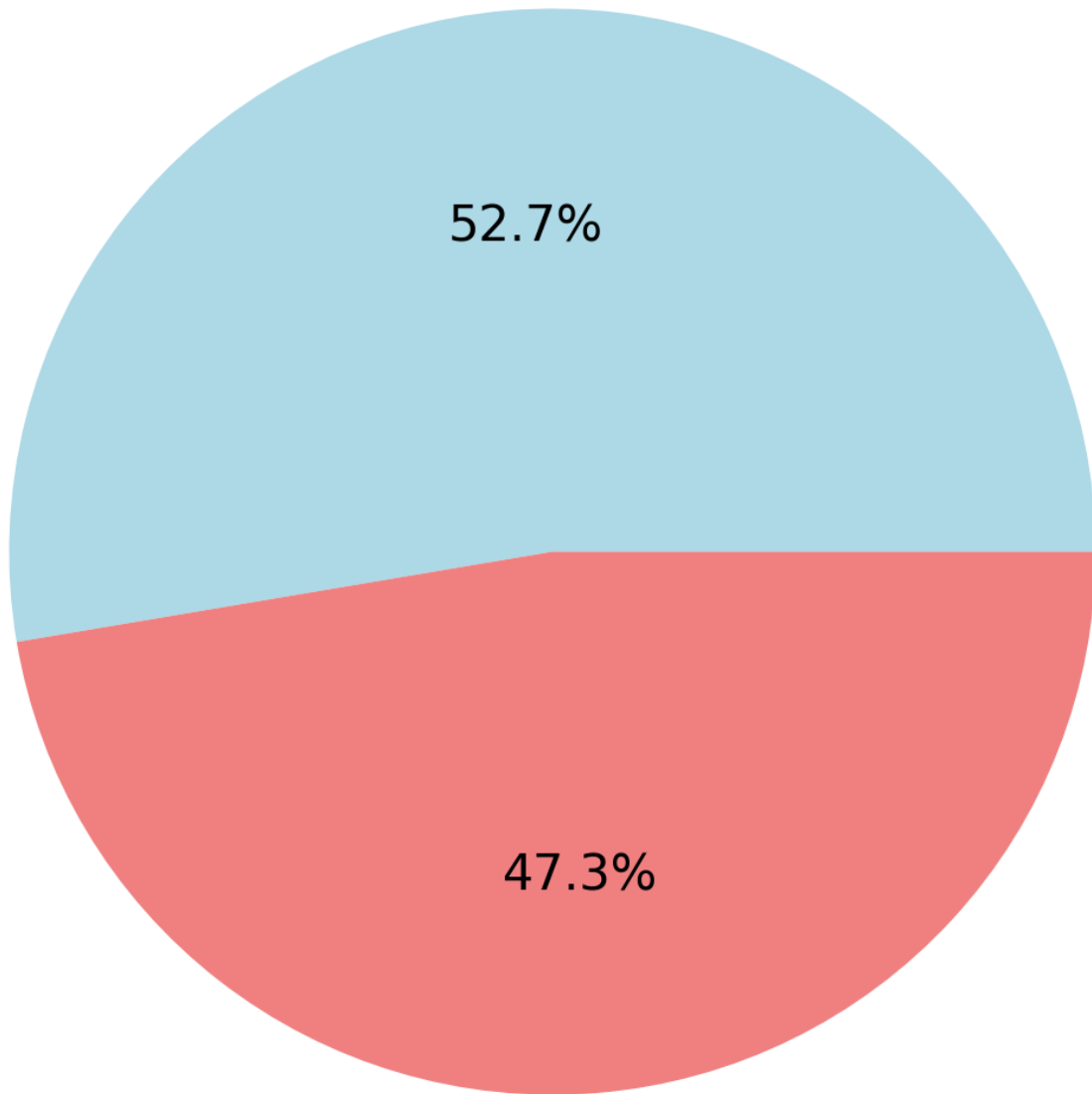


Gender Distribution

This pie chart shows the proportion of male and female students in the dataset.

Gender Distribution

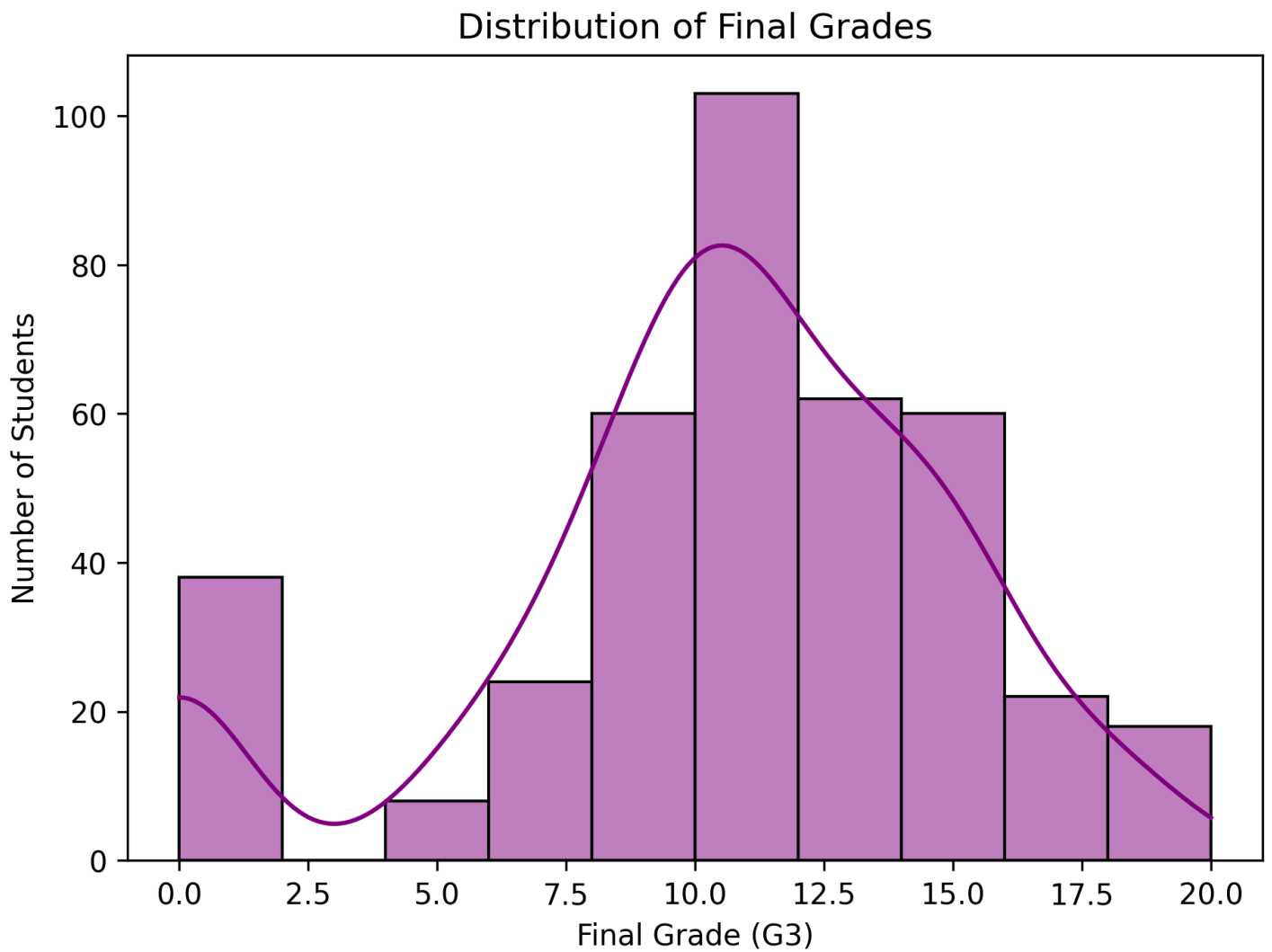
Female



Male

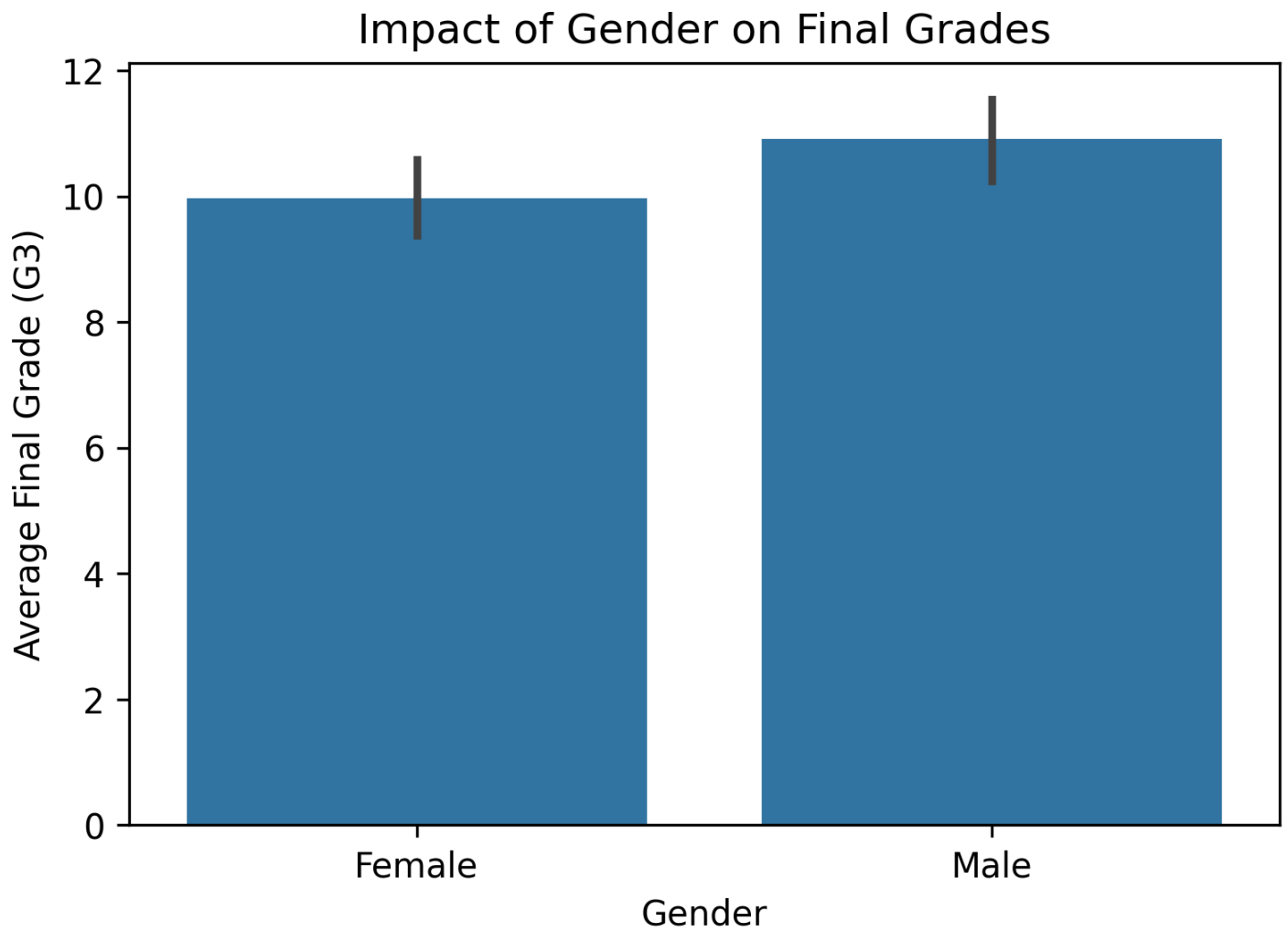
Distribution of Final Grades

This histogram visualizes how final grades are distributed across students.



Impact of Gender on Final Grades

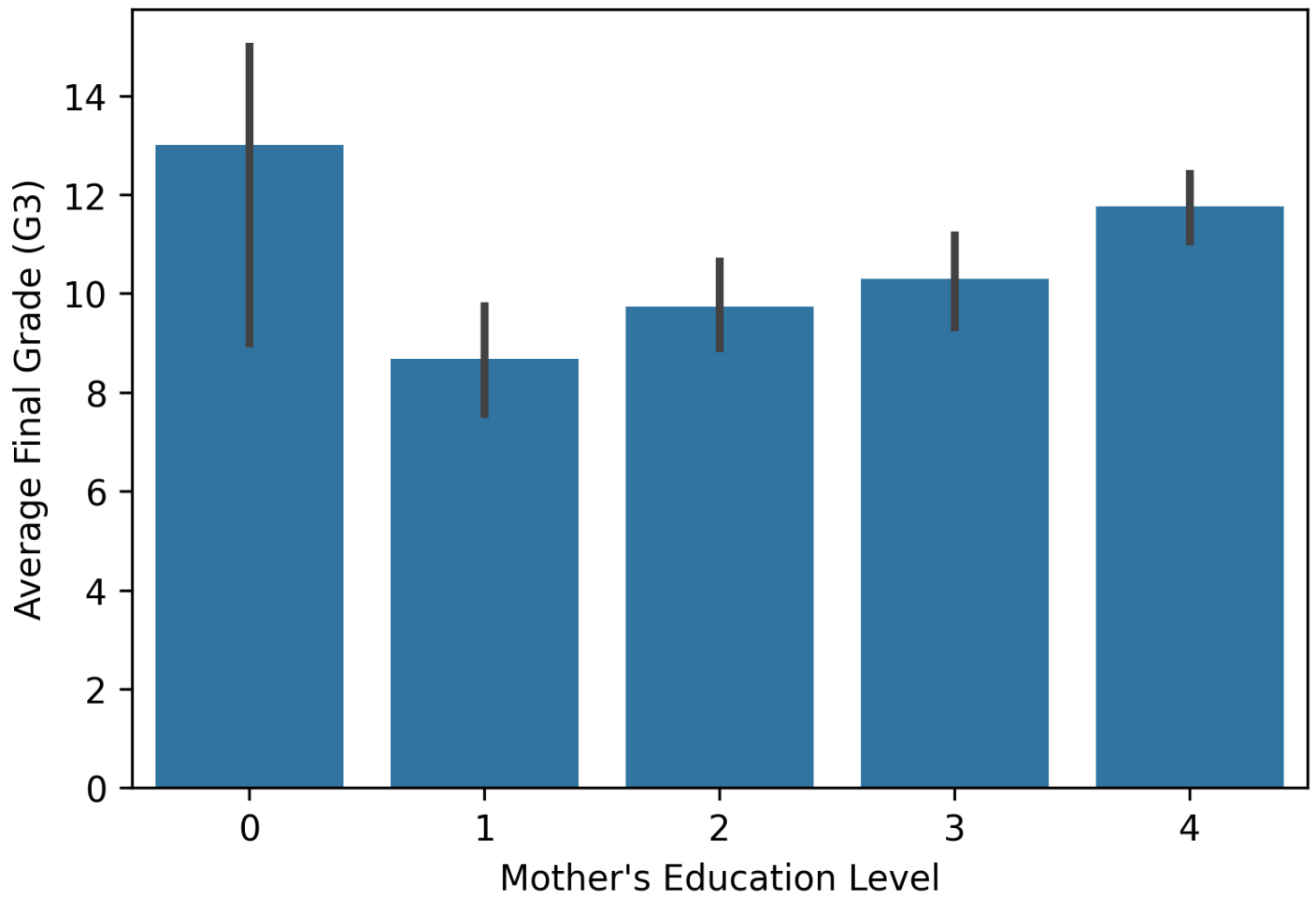
This bar chart explores whether there is a significant difference in grades between male and female students.



Does Mother's Education Affect Grades?

This chart analyzes the correlation between a mother's education level and the student's final grades.

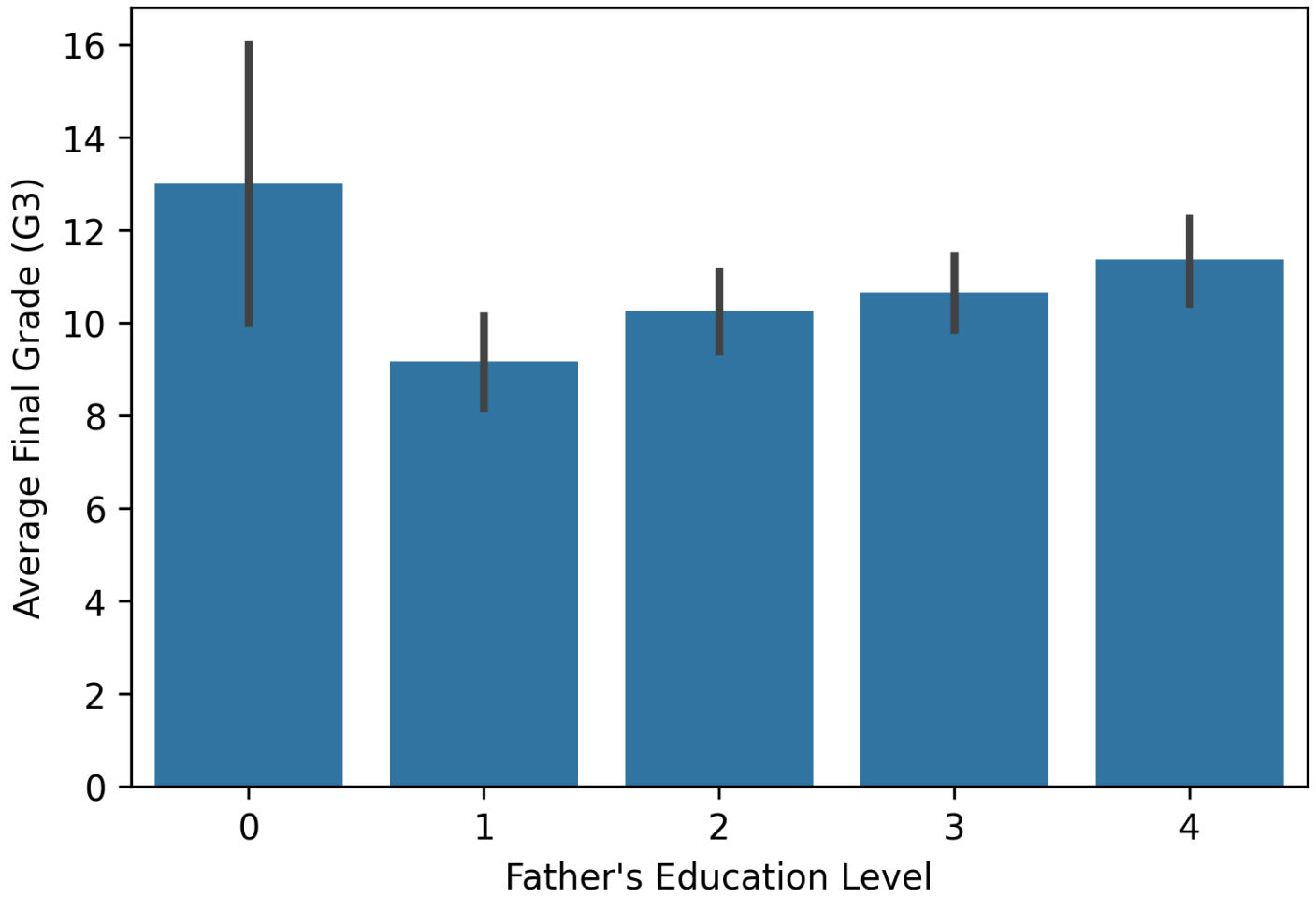
Higher Mother's Education → Higher Grades?



Does Father's Education Affect Grades?

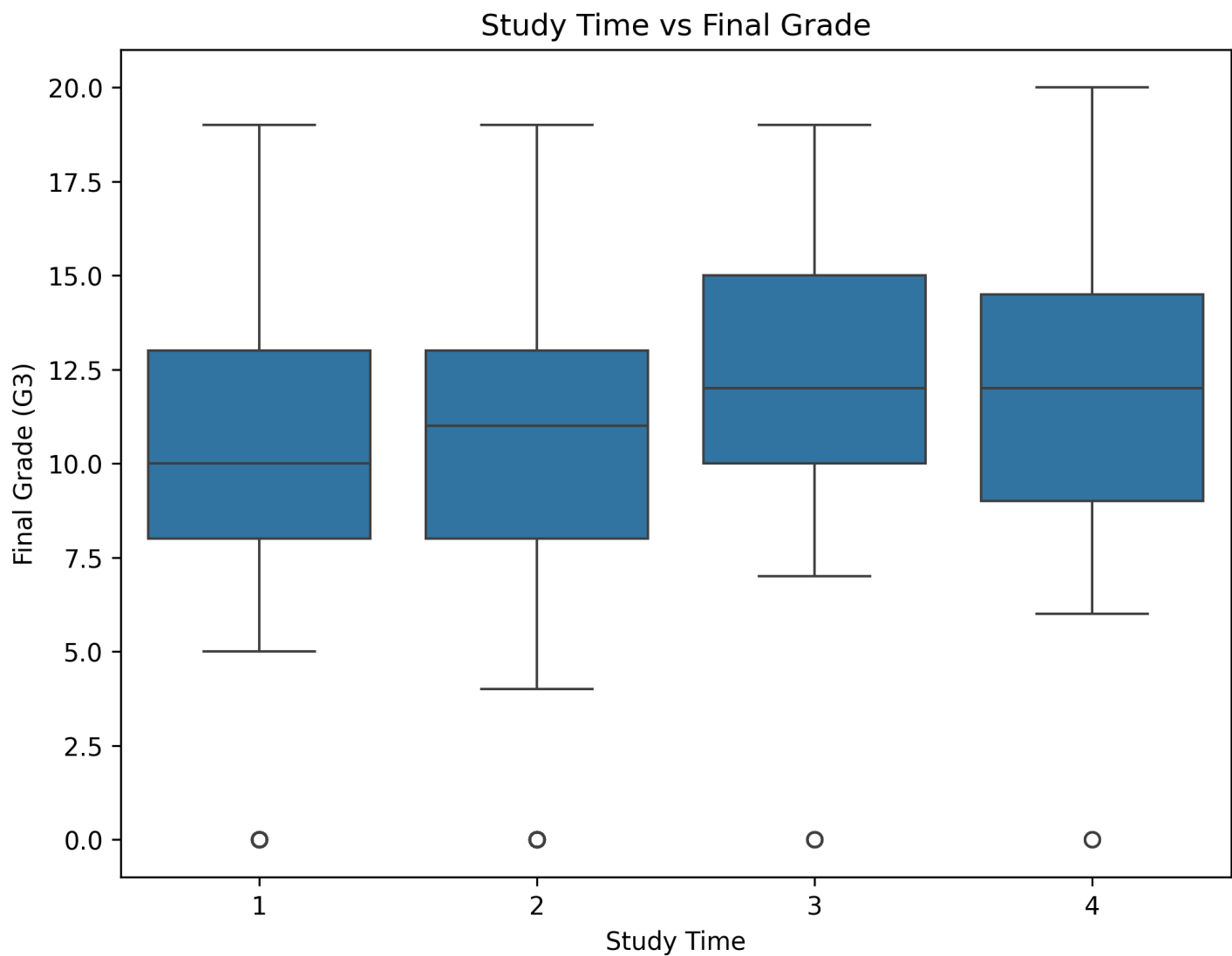
This chart analyzes the correlation between a father's education level and the student's final grades.

Higher Father's Education → Higher Grades?



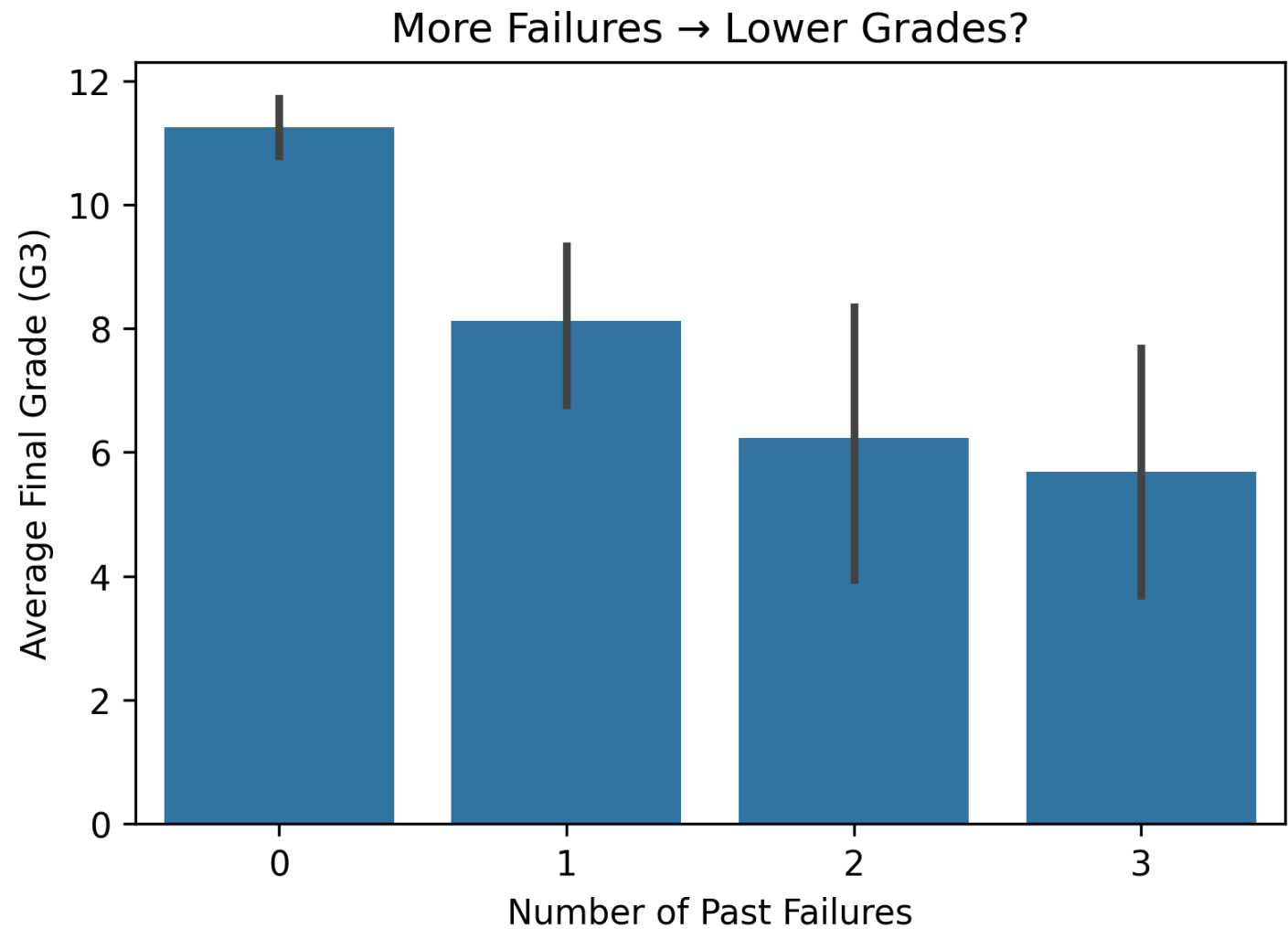
Does More Study Time Improve Grades?

This box plot checks if students with higher study time achieve better final grades.



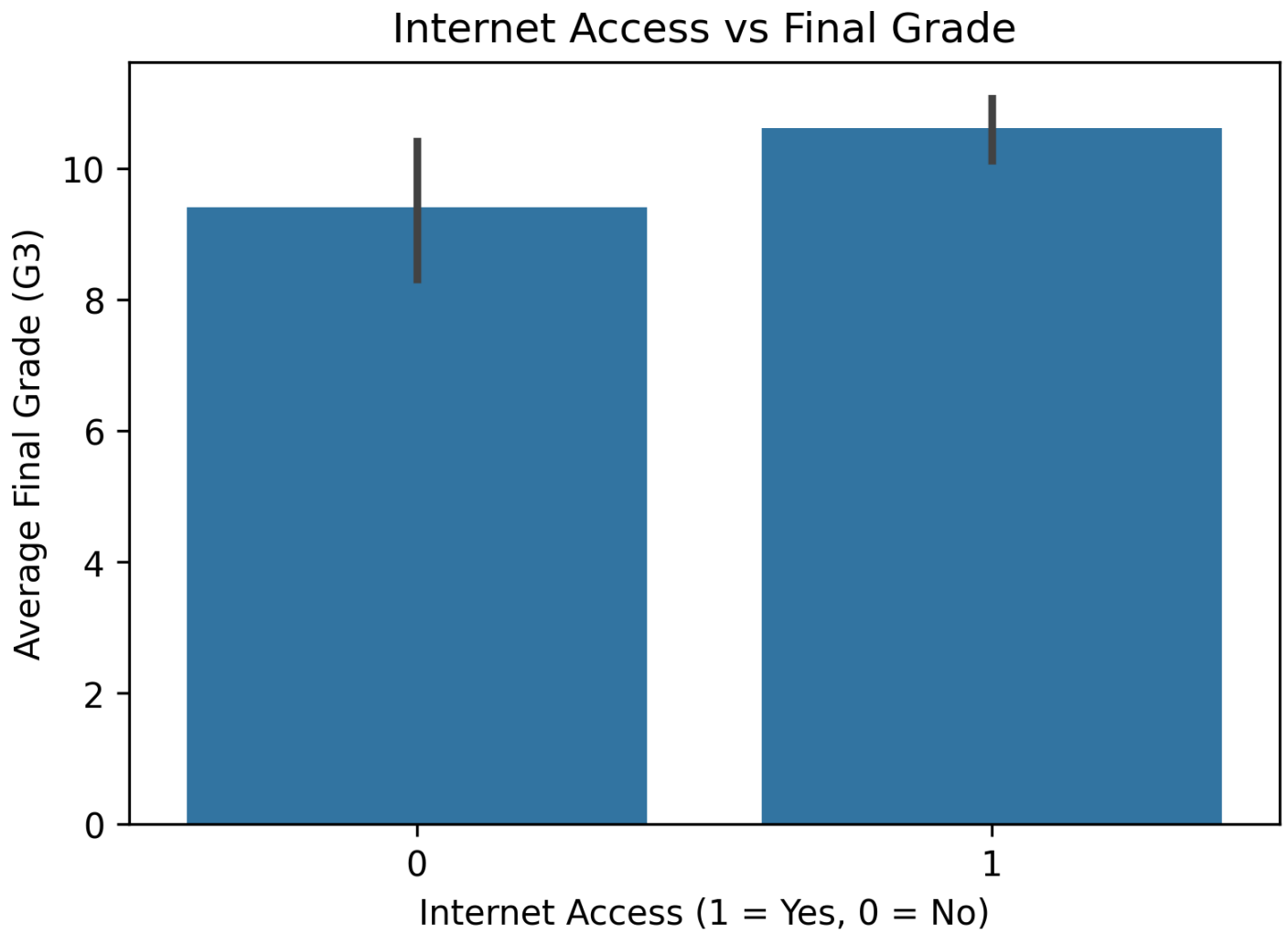
Impact of Past Failures on Grades

This chart shows whether students who failed more times tend to have lower final grades.



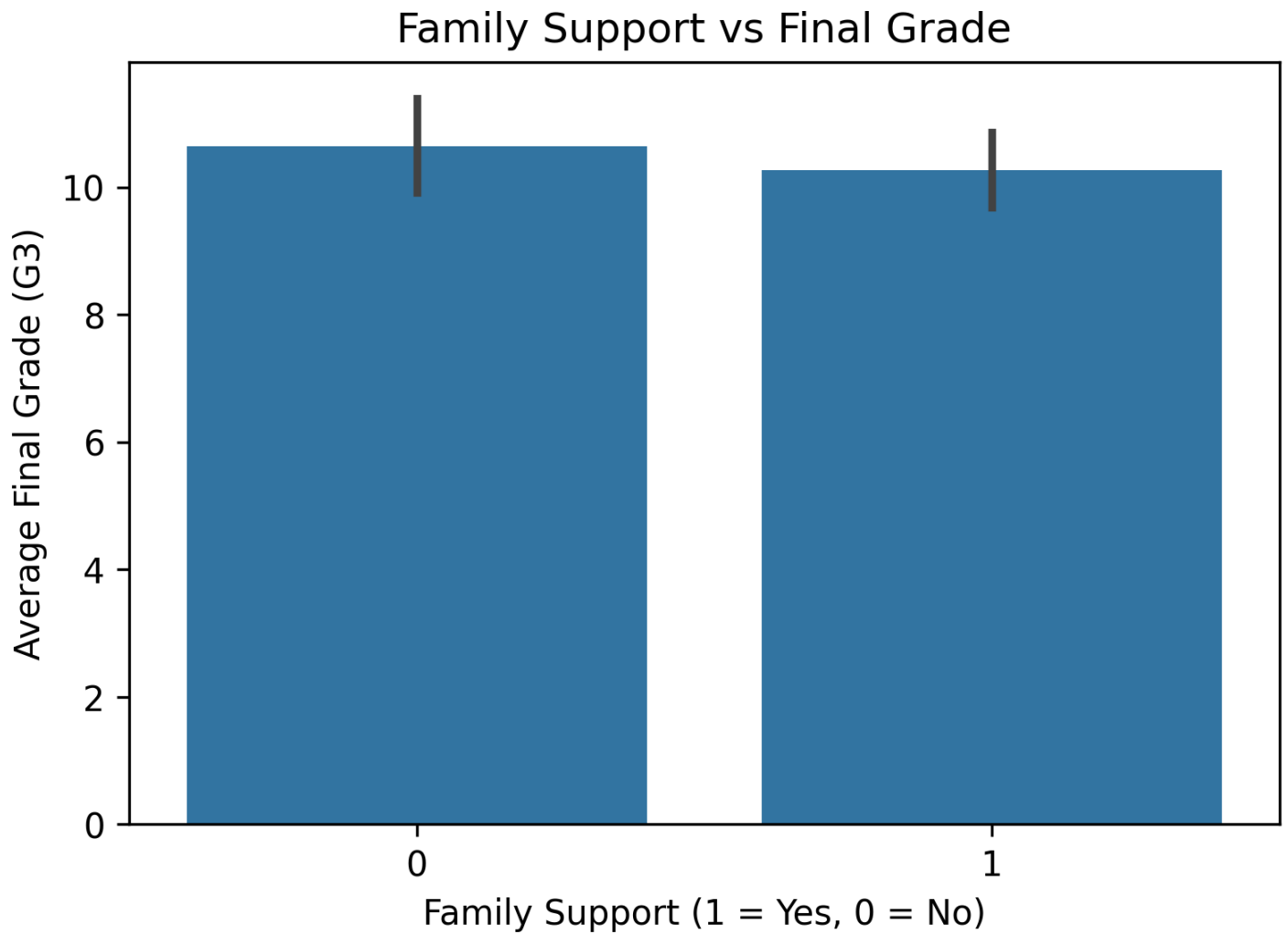
Does Internet Access Affect Grades?

This analysis compares the final grades of students who have internet access with those who don't.



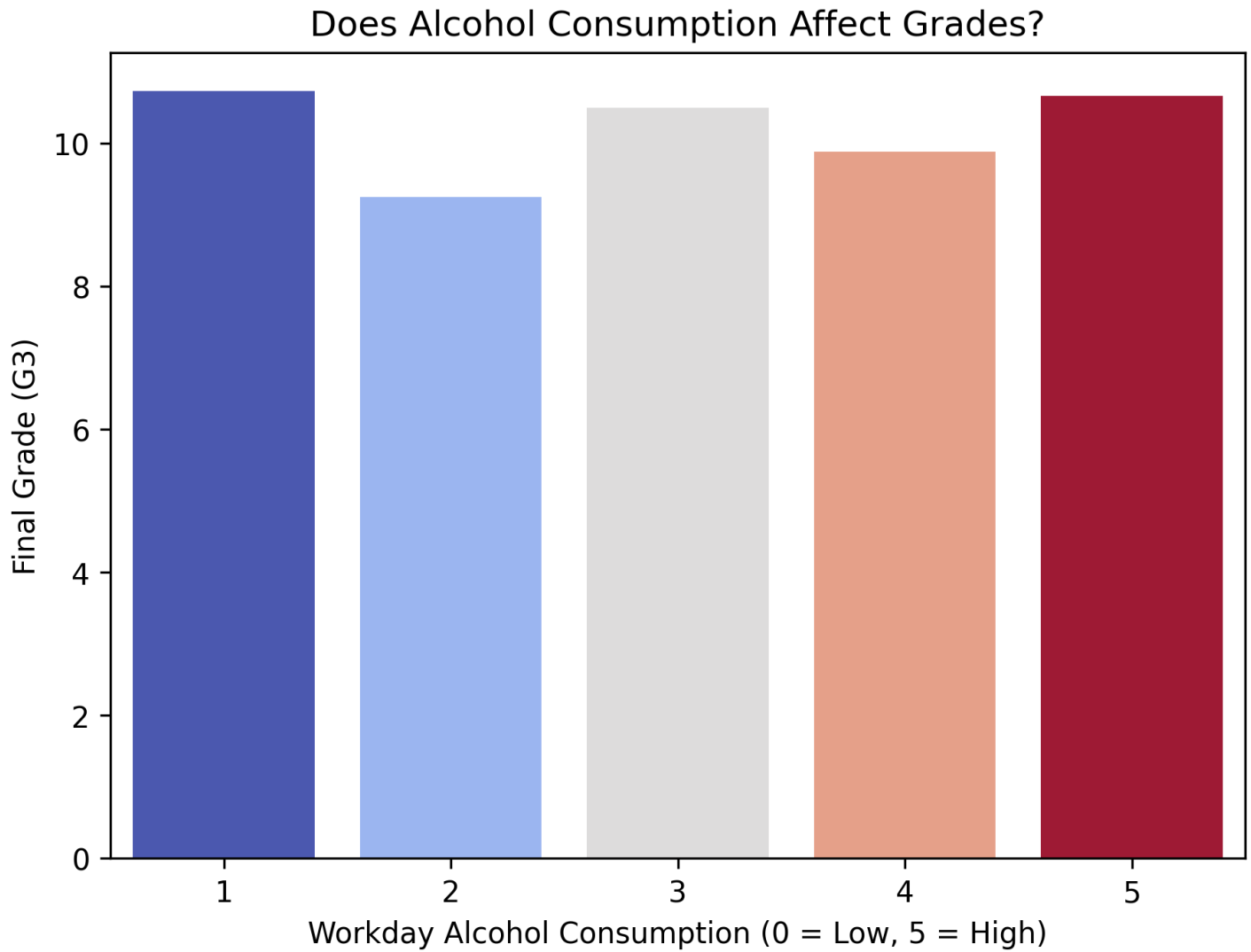
Impact of Family Support on Grades

This bar chart looks at whether students who receive family support perform better academically.



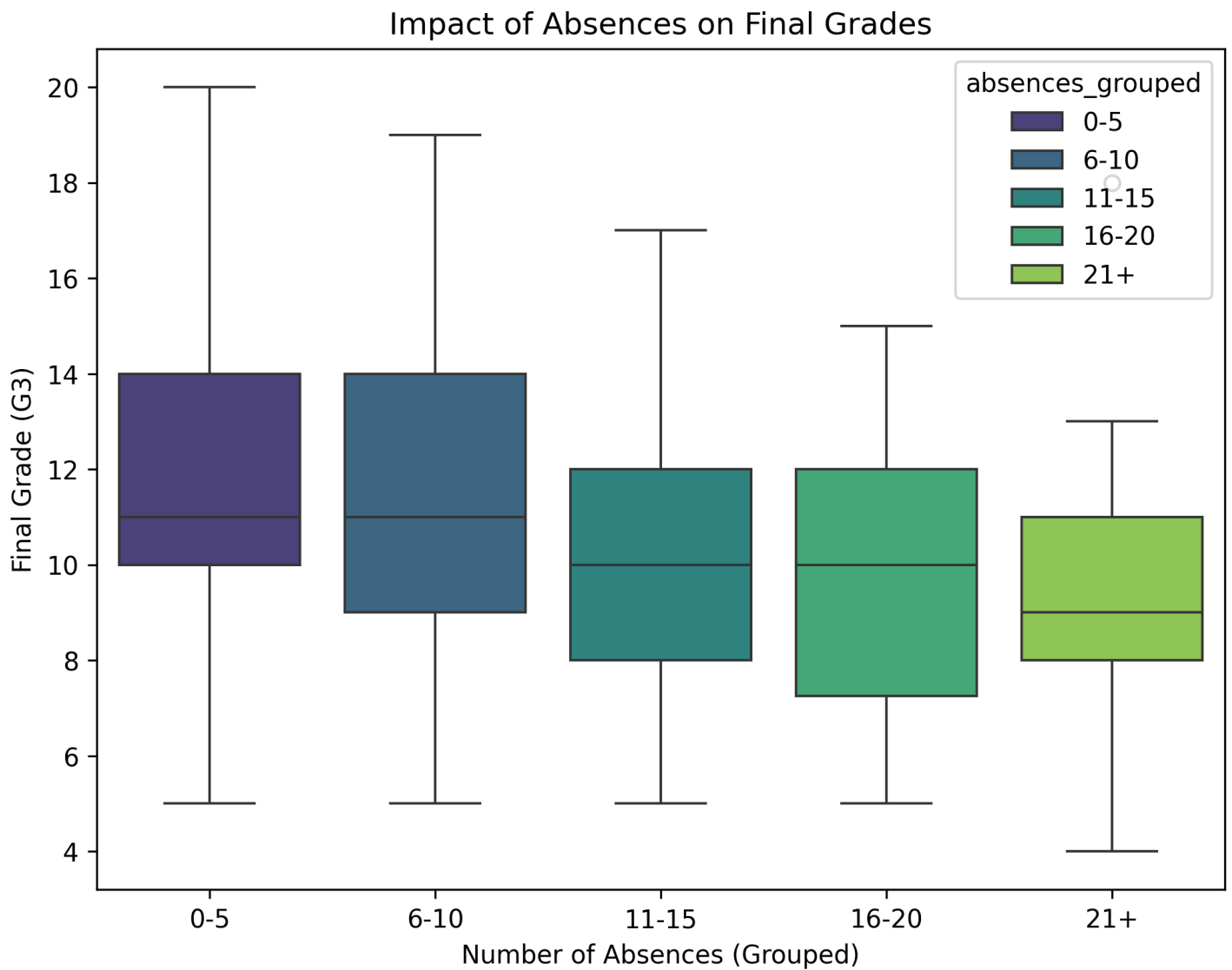
Does Alcohol Consumption Affect Grades?

This analysis explores whether alcohol consumption impacts students' academic performance.



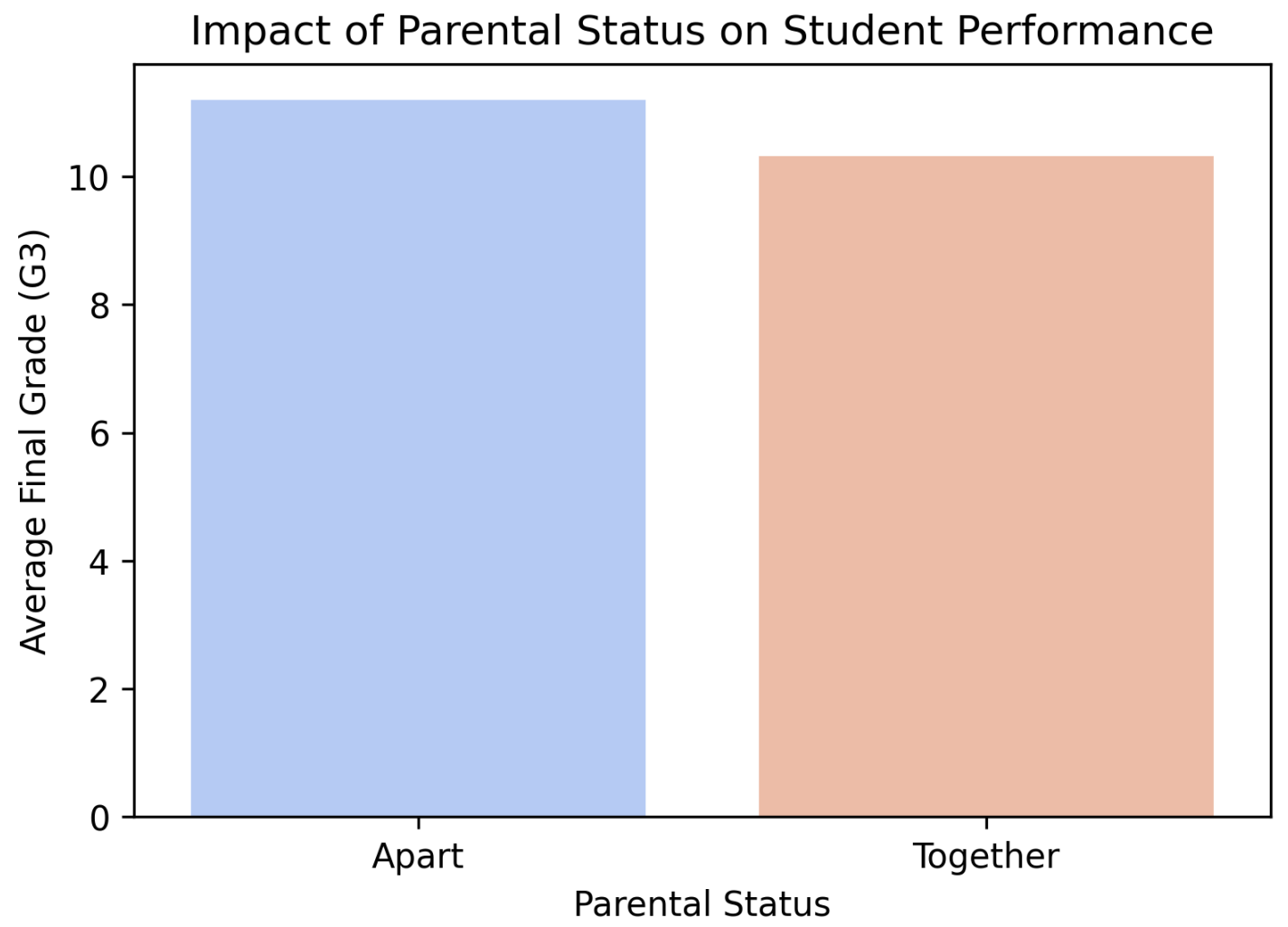
Impact of Absences on Final Grades

This box plot examines how missing classes affects final grades.



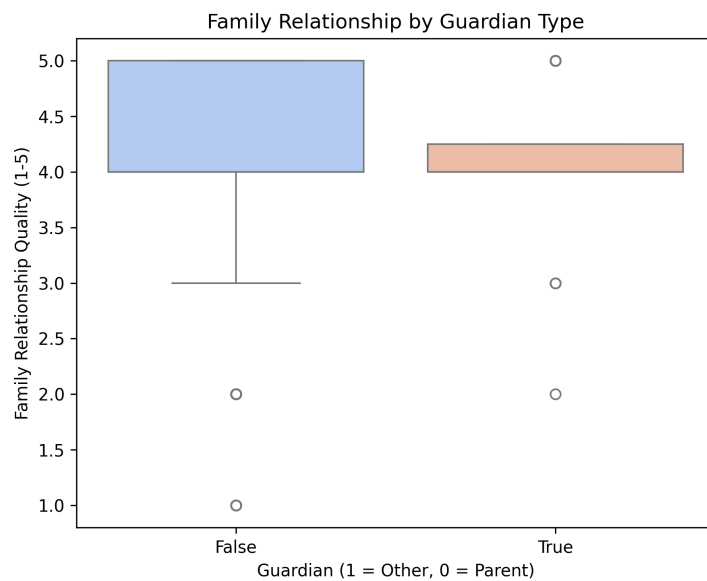
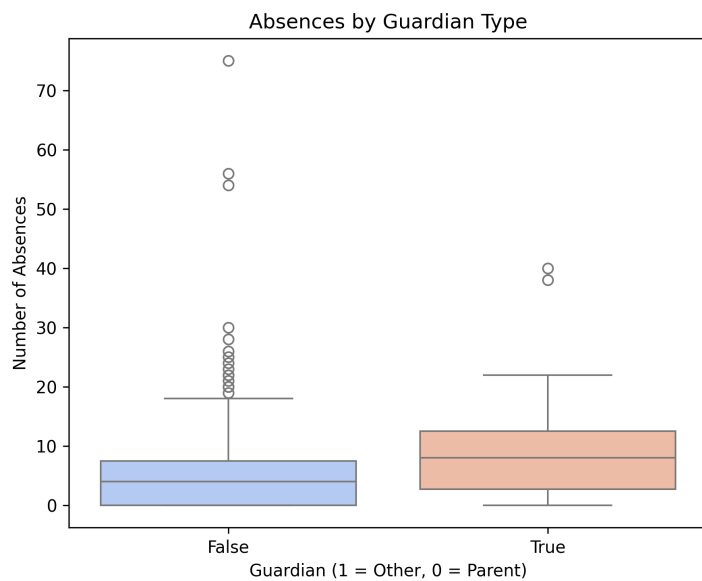
Does Parents' Marital Status Affect Student Performance?

This chart compares the academic performance of students based on whether their parents live together or apart.



Absences & Family Relationship by Guardian Type

These box plots explore the connection between guardian type, number of absences, and family relationship quality.



Conclusion & Summary

This report explored various factors affecting student grades, identifying trends and correlations that can help students, parents, and educators make informed decisions. By understanding the key influences on academic performance, we can take steps to improve student outcomes and overall education quality.

Thank you for reading!