

Partial Correlation Analysis

X variable: G1  
 Y variable: G3  
 Control variable(s): G2  
 N complete: 649  
 Zero-order r: 0.826387  
 Partial r: 0.160611  
 t value: 4.13586  
 df: 646  
 Two-tailed p-value: 4.00344e-05  
 Decision: Significant partial relationship

Descriptive statistics:

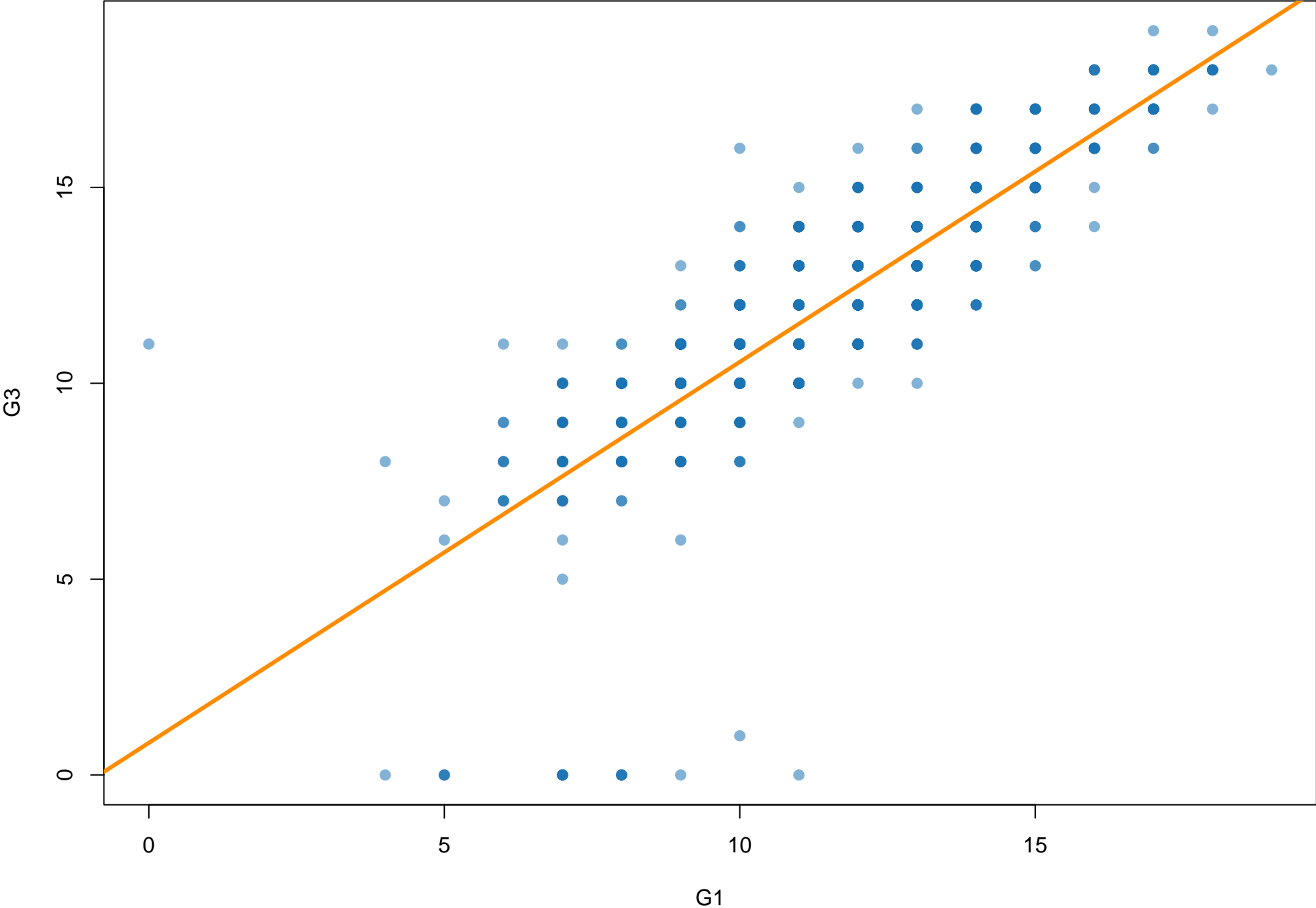
variable	n	mean	standard_deviation	variance	minimum	maximum	skewness	kurtosis
G1	649	11.3990755	2.7452651	7.5364806	0	19	-0.002760829	0.01780440
G3	649	11.9060092	3.2306562	10.4371398	0	19	-0.908693770	2.66462641
age	649	16.7442219	1.2181376	1.4838593	15	22	0.414870724	0.05230014
studytime	649	1.9306626	0.8295096	0.6880861	1	4	0.696388540	0.01899932
failures	649	0.2218798	0.5932351	0.3519279	0	3	3.078417657	9.70042301
absences	649	3.6594761	4.6407588	21.5366423	0	32	2.011362650	5.70053028
Medu	649	2.5146379	1.1345520	1.2872082	0	4	-0.029812055	-1.26551648
Fedu	649	2.3066256	1.0999309	1.2098480	0	4	0.214348962	-1.11576482
G2	649	11.5701079	2.9136387	8.4892903	0	19	-0.358618952	1.62616438

Pairwise partial correlations:

x_variable	y_variable	controls	n_complete	partial_correlation	p_value_two_tailed	decision_alpha_0_05
G1	G3	G2	649	0.160610717	4.003444e-05	Significant
G1	age	G2	649	-0.163687201	2.826370e-05	Significant
G1	studytime	G2	649	0.108502766	5.694662e-03	Significant
G1	failures	G2	649	-0.109115413	5.426380e-03	Significant
G1	absences	G2	649	-0.078827954	4.486906e-02	Significant
G1	Medu	G2	649	0.066295183	9.175788e-02	Not significant
G1	Fedu	G2	649	0.046550737	2.366736e-01	Not significant
G3	age	G2	649	-0.020637796	6.000045e-01	Not significant
G3	studytime	G2	649	0.075265071	5.549842e-02	Not significant
G3	failures	G2	649	-0.106814248	6.496929e-03	Significant
G3	absences	G2	649	0.059163369	1.324620e-01	Not significant
G3	Medu	G2	649	-0.006237762	8.740766e-01	Not significant
G3	Fedu	G2	649	0.012978393	7.415874e-01	Not significant
age	studytime	G2	649	0.017974763	6.478750e-01	Not significant
age	failures	G2	649	0.303770782	2.671323e-15	Significant
age	absences	G2	649	0.138508261	4.060887e-04	Significant
age	Medu	G2	649	-0.082952700	3.475567e-02	Significant
age	Fedu	G2	649	-0.100063758	1.081287e-02	Significant
studytime	failures	G2	649	-0.061038516	1.206061e-01	Not significant
studytime	absences	G2	649	-0.091778034	1.945427e-02	Significant

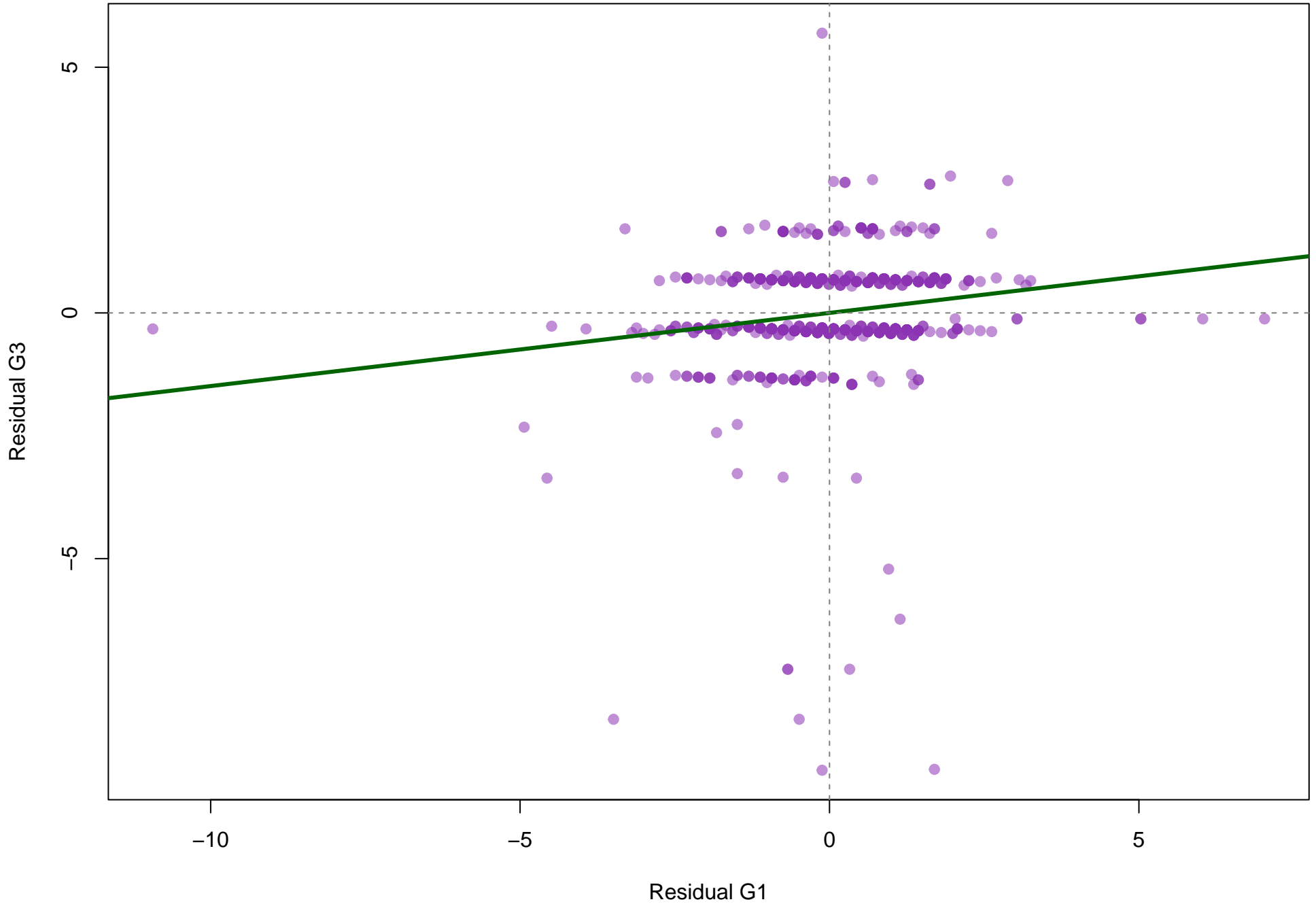
# Partial Correlation: Zero-order Scatterplot

Raw relationship before control;  $r = 0.8264$



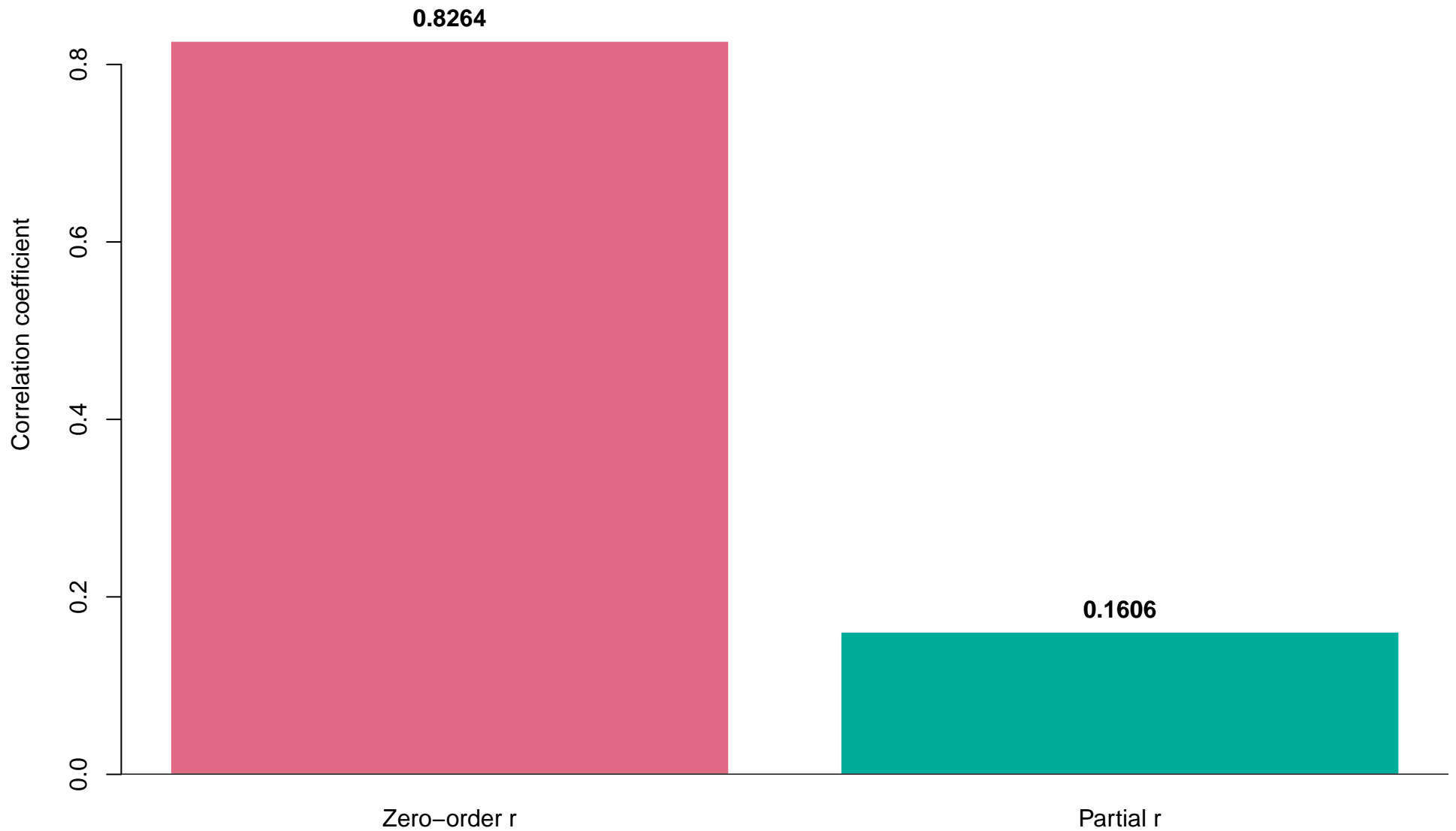
# Partial Correlation: Residual Relationship

After controlling G2 ; partial r = 0.1606



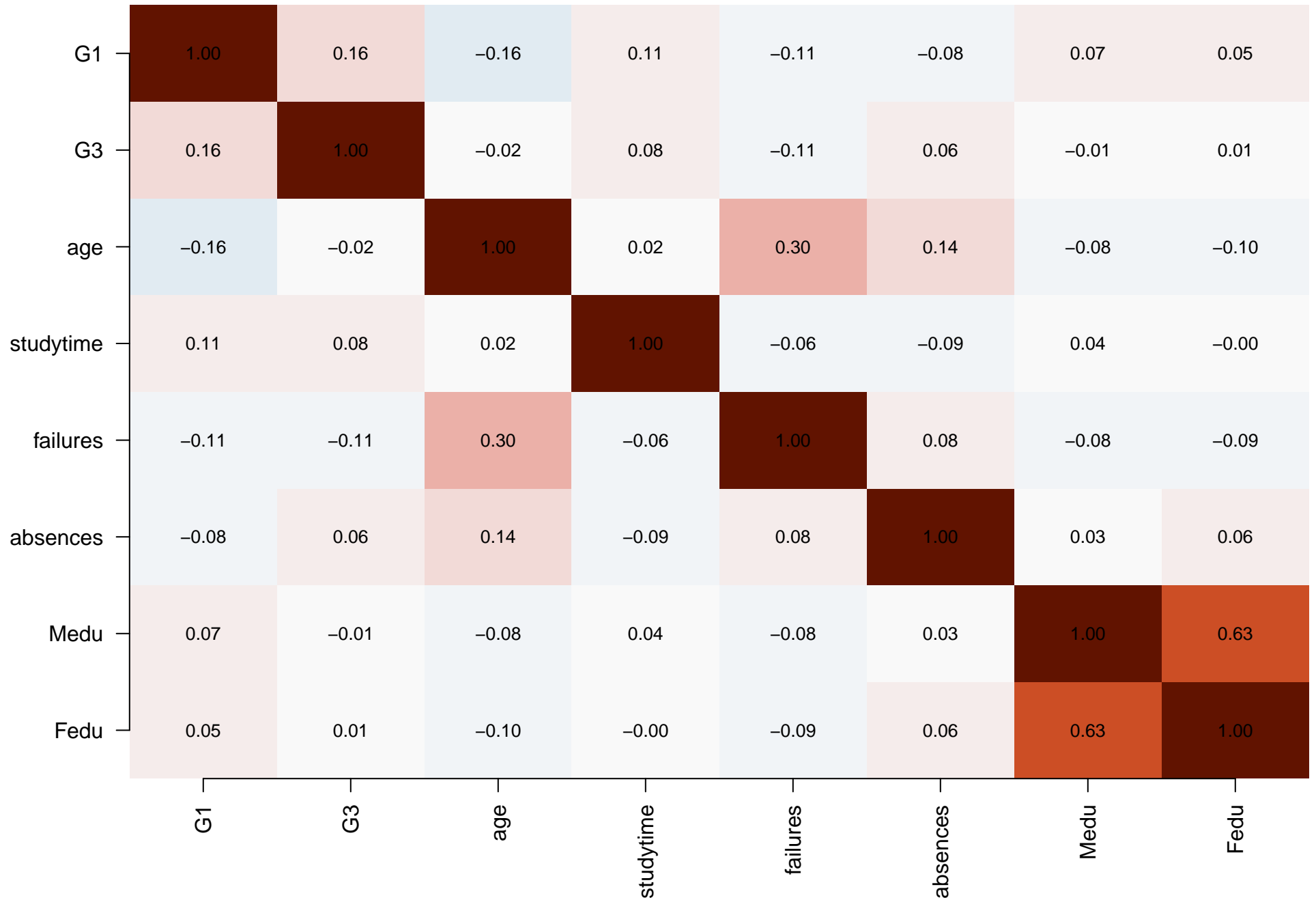
## Partial Correlation: Before and After Control

The partial coefficient shows the remaining association after removing control-variable influence.



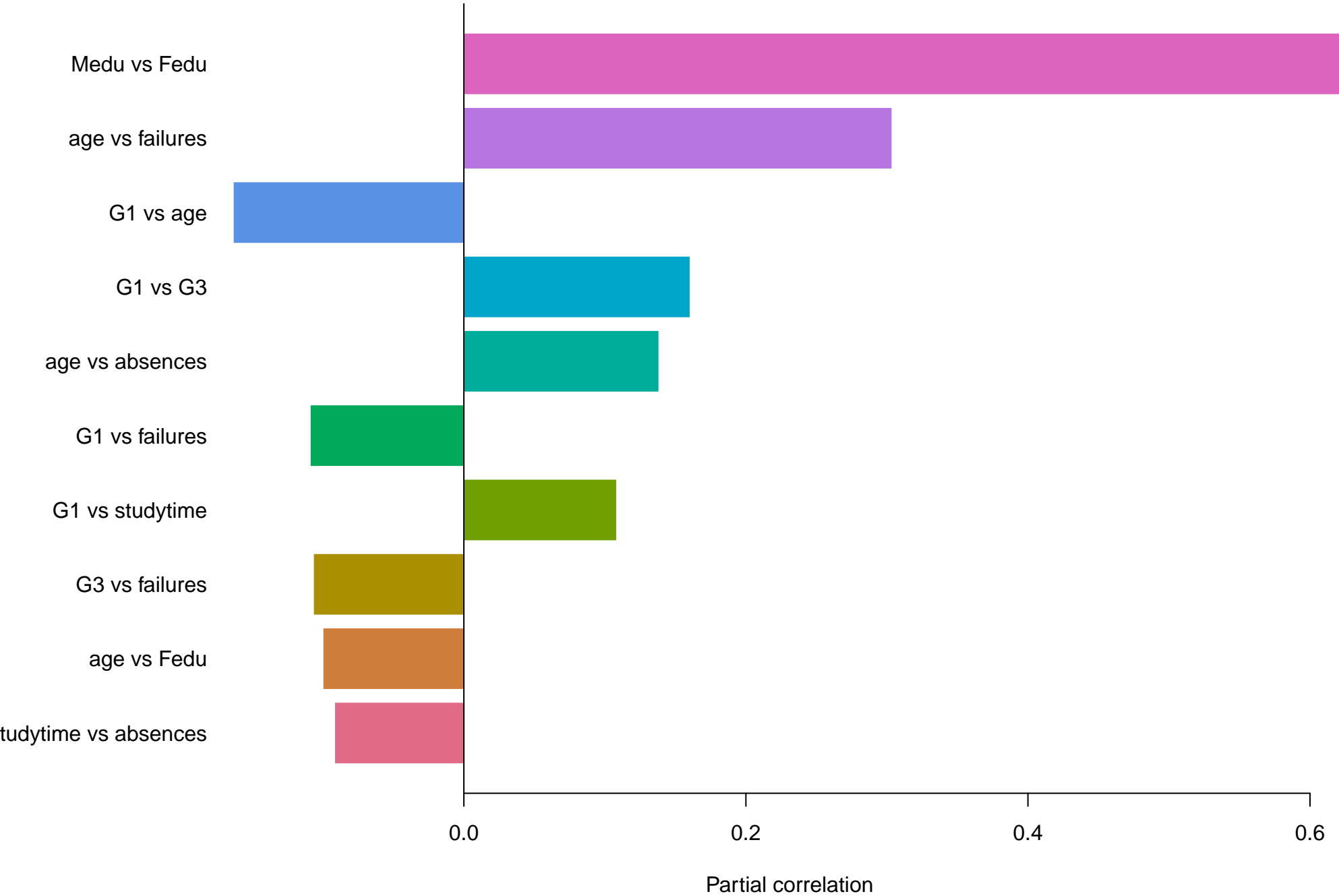
# Partial Correlation Matrix

Each value controls the selected covariate set.



# Largest Pairwise Partial Correlations

Top absolute partial correlations among selected numeric variables.



# Partial Correlation p-values

Comparisons to the left of alpha are statistically significant at the 5% level.

