Supplementary Material

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2025-07-03

Supplementary Material – Detailed Analysis by Diagnosis Code

This supplementary PDF contains extended results for 39 ICD-10 diagnostic codes found to have relevant associations with schizophrenia polygenic risk scores (SCZ-PRS) in the UK Biobank sample. For each code, we present a standardized set of visualizations and statistical tables to evaluate the pattern and strength of association across the PRS distribution.

Each diagnostic section follows the same layout:

Page 1:

- FIGURE 1 | *Prevalence plot of diagnosis across SCZ-PRS quantile:* Prevalence of diagnosis across 25 quantiles of the SCZ-PRS. The blue line represents a smoothed fit with 95% confidence intervals. The color gradient of points indicates prevalence magnitude, with higher values shown in purple.

Page 2:

- TABLE 1 | *Prevalence table by SCZ-PRS quantile:* Shows the proportion of individuals diagnosed with the selected condition across 25 quantiles of SCZ-PRS. A gradual increase in prevalence across quantiles may indicate a positive association between genetic liability for schizophrenia and the diagnosis.

- TABLE 2 | *Model fit comparison SCZ-PRS quantiles and diagnosis prevalence:* This table summarizes the performance of different regression models (e.g., linear, logarithmic, exponential, power law) used to estimate the relationship between SCZ-PRS quantiles and the prevalence of a given diagnosis. Models are compared based on: R^2, the proportion of variance in prevalence explained by the model (higher values indicate better explanatory power); Akaike Information Criterion (AIC), where lower values indicate better model fit with a penalty for model complexity; Residual Sum of Squares (RSS), measuring the discrepancy between observed and predicted values (lower is better). Models are ranked by R^2 to highlight the best-fitting model for each diagnosis.

Page 3:

- FIGURE 2 | *Prevalence by SCZ-PRS Quantile and Model Fit:* Observed and predicted prevalence across SCZ-PRS quantiles for four regression models: linear, logarithmic, exponential, and power law. Colored lines represent the fitted curves of each model, while dots indicate observed prevalence. This visualization enables direct comparison of model performance in capturing the relationship between genetic risk and diagnosis prevalence.

- FIGURE 3 | *Model residuals by SCZ-PRS Quantile:* Residuals of the four fitted models across SCZ-PRS quantiles. Each line corresponds to one model, showing how well it captures the variability in prevalence data. Patterns in the residuals can indicate model misspecification or systematic deviations.

Page 4:

- TABLE 3 | *Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):* 2×2 table showing the number of cases and controls for a given diagnosis, comparing individuals in the lowest SCZ-PRS quantile (Q1) versus those in all other quantiles combined. This format enables estimation of odds ratios and Chi2 statistics for enrichment or depletion at the low end of the PRS distribution.

- RESULT 1 | *Odds Ratio (OR) and 95% confidence interval:* The odds ratio comparing the lowest quantile group (Q1) versus others is reported along with its 95% confidence interval, providing a measure of the strength and direction of association.

- RESULT 2 | *Chi-squared test results comparing Q1 vs the rest:* Pearson's Chi-squared test is used to evaluate whether diagnosis prevalence differs significantly between the lowest SCZ-PRS quantile and the other quantiles combined. Test statistics and p-values are reported to assess statistical significance.

Page 5:

- FIGURE 4 | *Odds Ratios by SCZ-PRS quantile (Reference = Quantile 13):* Each point represents the OR and 95% confidence interval for the diagnosis within each SCZ-PRS quantile, relative to quantile 13 (used as the reference group). The red dashed line indicates the null value (OR = 1). Quantiles toward the right (higher PRS) may show increased risk, while those on the left may show lower odds, illustrating the stratified effect of polygenic risk scores on disease prevalence.

Page 6:

- TABLE 4 | *Odds Ratios by SCZ-PRS Quantile (ref = Q13):* This table presents the OR and corresponding 95% CI for each SCZ-PRS quantile compared to the reference quantile 13. Each OR quantifies the relative odds of the diagnosis in that quantile versus the reference group. Confidence intervals provide an estimate of the precision of the ORs. Values below 1 suggest lower odds compared to the reference, while values above 1 indicate higher odds. This allows assessment of how genetic risk, stratified by polygenic risk score quantiles, relates to the likelihood of the diagnosis.

Page 7:

- RESULT 3 | *Model summary outputs (Linear, Log, Exponential, Power Law):* This page summarizes the results of four regression models assessing the relationship between disease prevalence and SCZ-PRS. Each model provides estimates of the strength and significance of the association, along with measures of how well the model fits the data. These comparisons help identify the best-fitting model.

All figures were generated using a unified pipeline. The structure ensures comparability between diagnoses and allows identification of shared or unique patterns of association with SCZ-PRS.

For ease of navigation, the next page contains an index linking each ICD-10 code to its starting page.

Table 1: List of Diagnostic Codes and Starting Pages

Code	Diagnosis	Page
C34	Malignant neoplasm of bronchus and lung	4
E11	Type 2 diabetes mellitus	11
E22	Hyperfunction of pituitary gland	18
E66	Obesity	25
G56	Mononeuropathies of upper limb	32
I10	Essential (primary) hypertension	39
I21	Acute myocardial infarction	46
I25	Chronic ischaemic heart disease	53
J43	Emphysema	60
J44	Other chronic obstructive pulmonary disease	67
K13	Other diseases of lip and oral mucosa	74
K58	Irritable bowel syndrome	81
K59	Other functional intestinal disorders	88
K62	Other diseases of anus and rectum	95
K63	Other diseases of intestine	102
K92	Other diseases of digestive system	109
M15	Polyarthrosis	116
M17	Gonarthrosis [arthrosis of knee]	123
M18	Arthrosis of first carpometacarpal joint	130
M19	Other arthrosis	137
M23	Internal derangement of knee	144
M65	Synovitis and tenosynovitis	151
M75	Shoulder lesions	158
M81	Osteoporosis without current pathological fracture	165
N17	Acute renal failure	172
N81	Female genital prolapse	179
R10	Abdominal and pelvic pain	186
R19	Other symptoms involving digestive system and abdomen	193
R31	Unspecified hematuria	200
R51	Headache	207
R60	Edema, not elsewhere classified	214
T84	Complications of internal orthopedic prosthetic devices	221
W03	Fall on same level due to collision with another person	228
Y04	Assault by bodily force	235
Z01	Other special examinations	242
Z37	Outcome of delivery	249
Z60	Social environment-related factors	256
Z86	Personal history of certain other diseases	263
Z96	Presence of other functional implants	270

Prevalence analysis and model fitting for diagnosis: C34
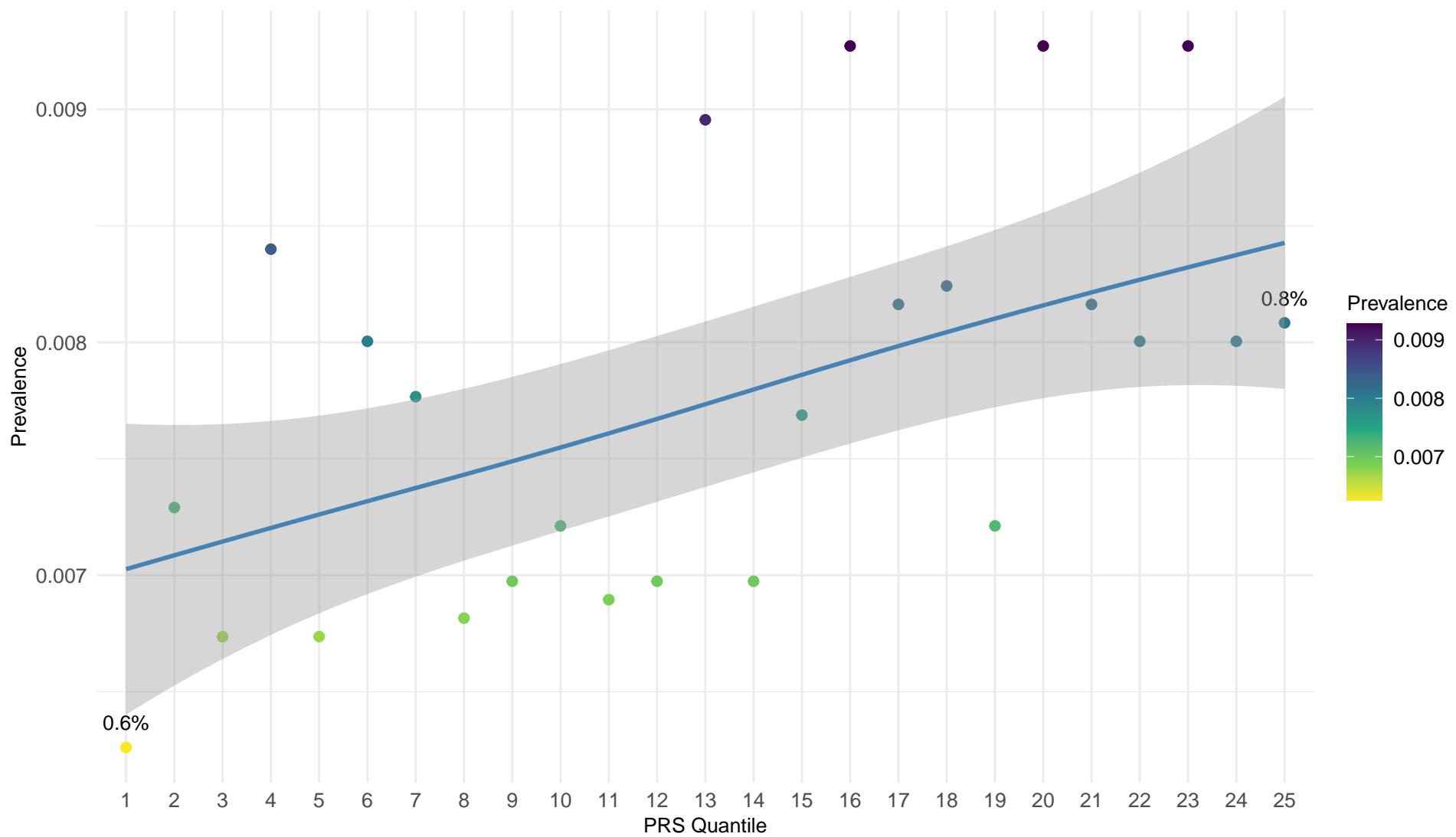

FIGURE 1:Prevalence of C34 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00731
2	0.00855
3	0.00789
4	0.00978
5	0.00786
6	0.00932
7	0.0091
8	0.00799
9	0.00818
10	0.00844
11	0.00808
12	0.00818
13	0.01039
14	0.00818
15	0.00898
16	0.0109
17	0.00953
18	0.00969
19	0.00841
20	0.01082
21	0.00956
22	0.00937
23	0.0109
24	0.00933
25	0.00945

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−278.85517	1.648256e−05	0.3343882
2	Power	−278.31965	1.683944e−05	0.3199764
3	Log	−278.15608	1.694997e−05	0.3155126
4	Exponential (lm)	−44.54154	1.655044e−05	0.3316469

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
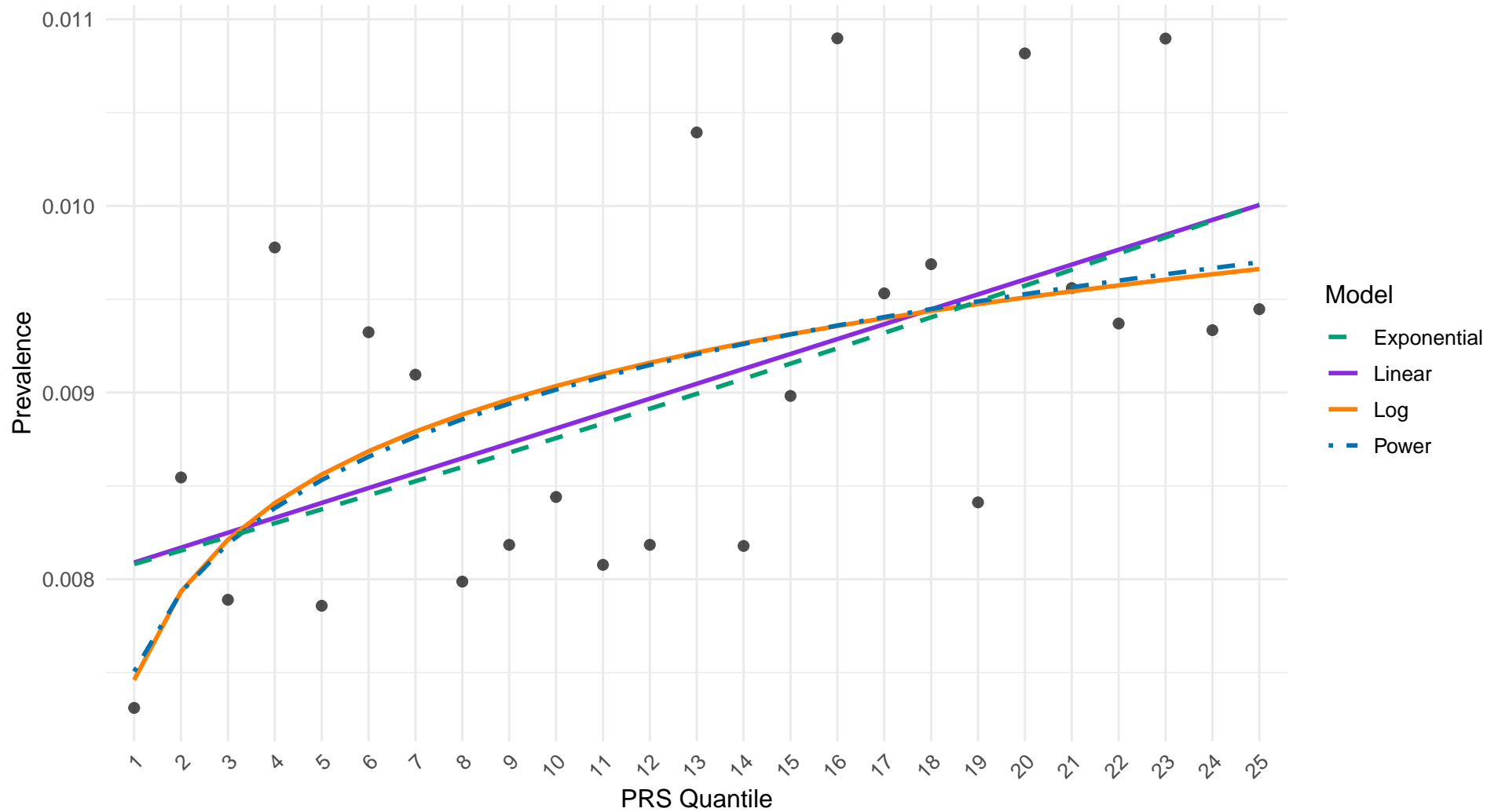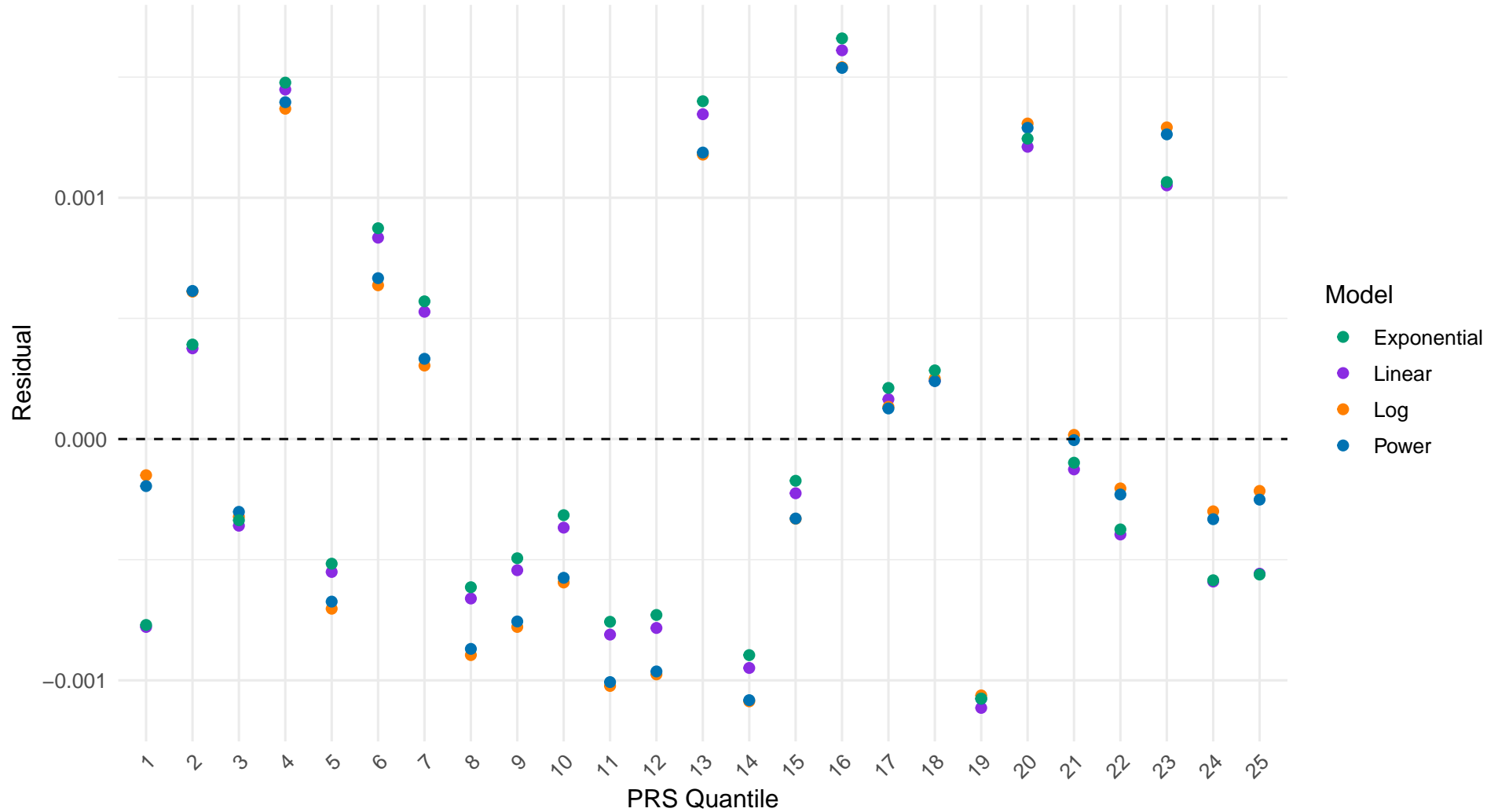Diagnosis: C34

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: C34

Chi2 Test for code: C34

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
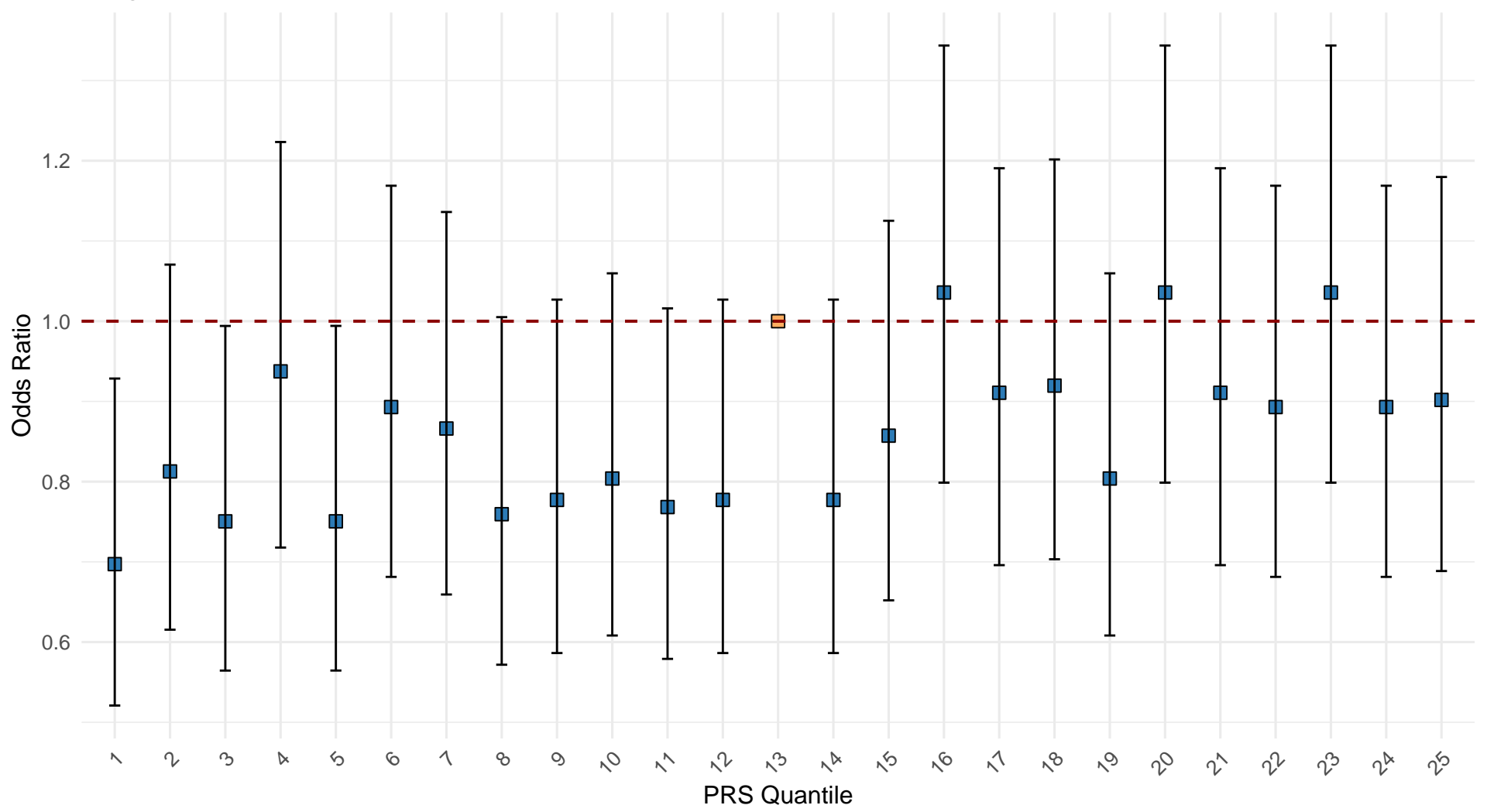Diagnosis: C34

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.7	0.52	0.93
2	0.81	0.62	1.07
3	0.75	0.56	0.99
4	0.94	0.72	1.22
5	0.75	0.56	0.99
6	0.89	0.68	1.17
7	0.87	0.66	1.14
8	0.76	0.57	1.01
9	0.78	0.59	1.03
10	0.8	0.61	1.06
11	0.77	0.58	1.02
12	0.78	0.59	1.03
13	1	1	1
14	0.78	0.59	1.03
15	0.86	0.65	1.13
16	1.04	0.8	1.34
17	0.91	0.7	1.19
18	0.92	0.7	1.2
19	0.8	0.61	1.06
20	1.04	0.8	1.34
21	0.91	0.7	1.19
22	0.89	0.68	1.17
23	1.04	0.8	1.34
24	0.89	0.68	1.17
25	0.9	0.69	1.18

```
Linear Model Summary for C34

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0011144 -0.0005908 -0.0003592  0.0005274  0.0016111

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 8.010e-03  3.490e-04  22.948  < 2e-16 ***
PRS         7.981e-05  2.348e-05   3.399  0.00246 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008465 on 23 degrees of freedom
Multiple R-squared:  0.3344,	Adjusted R-squared:  0.3054
F-statistic: 11.55 on 1 and 23 DF,  p-value: 0.002463



Log Model Summary for C34

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0010871 -0.0007034 -0.0002046  0.0006107  0.0015411

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0074607  0.0005167  14.439 5.07e-13 ***
log(PRS)    0.0006839  0.0002100   3.256  0.00348 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008585 on 23 degrees of freedom
Multiple R-squared:  0.3155,	Adjusted R-squared:  0.2858
F-statistic:  10.6 on 1 and 23 DF,  p-value: 0.003479



Exponential Model Summary for C34

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.12033 -0.06368 -0.03670  0.06480  0.16533

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) -4.827108   0.037853  -127.5  < 2e-16 ***
PRS          0.008912   0.002546     3.5  0.00193 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.09181 on 23 degrees of freedom
Multiple R-squared:  0.3475,	Adjusted R-squared:  0.3192
F-statistic: 12.25 on 1 and 23 DF,  p-value: 0.001927



Power Model Summary for C34

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0075057  0.0004755  15.785 7.82e-14 ***
b 0.0796175  0.0250036   3.184  0.00413 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008557 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.692e-06
```

Prevalence analysis and model fitting for diagnosis: E11
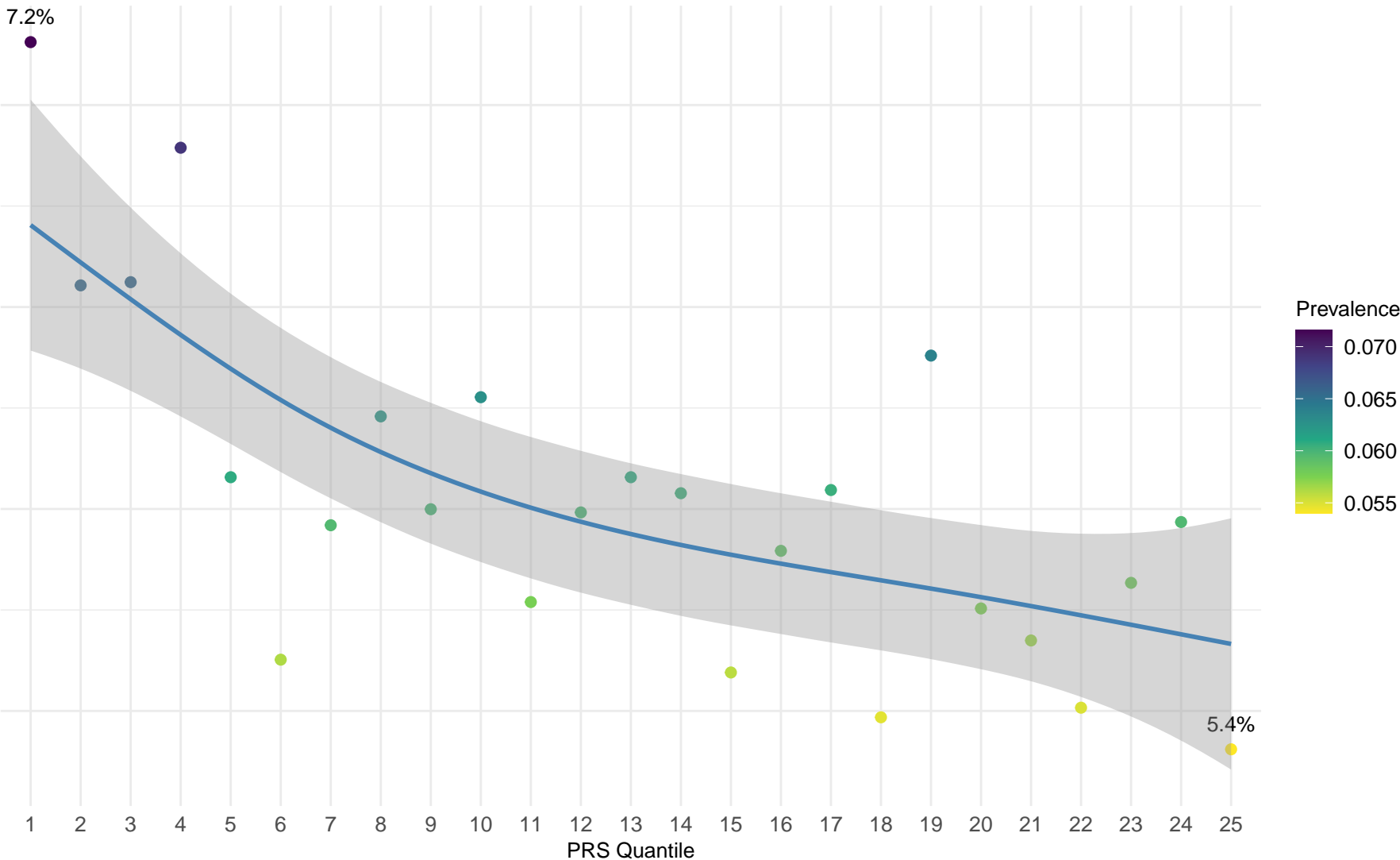
FIGURE 1:Prevalence of E11 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.08356
2	0.07682
3	0.07686
4	0.08025
5	0.07091
6	0.06554
7	0.0698
8	0.073
9	0.07041
10	0.07346
11	0.06759
12	0.07031
13	0.07055
14	0.07082
15	0.06538
16	0.0693
17	0.07061
18	0.06446
19	0.07441
20	0.06712
21	0.06646
22	0.06448
23	0.06836
24	0.06959
25	0.06317

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Power	−213.01258	0.0002295236	0.6159691
2	Log	−212.68373	0.0002325627	0.6108842
3	Linear	−205.10597	0.0003149049	0.4731122
4	Exponential (lm)	−73.72954	0.0003108062	0.4799700

FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
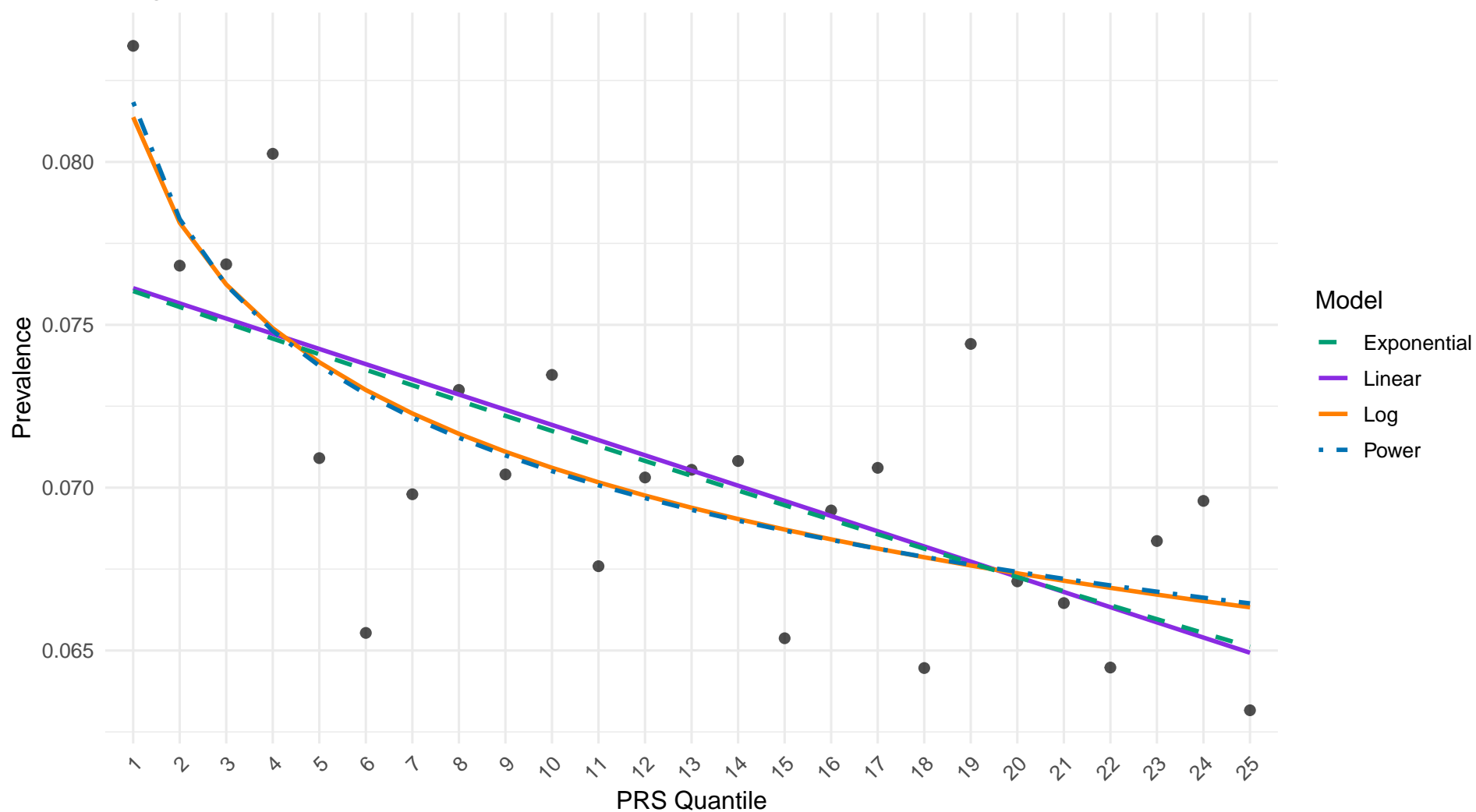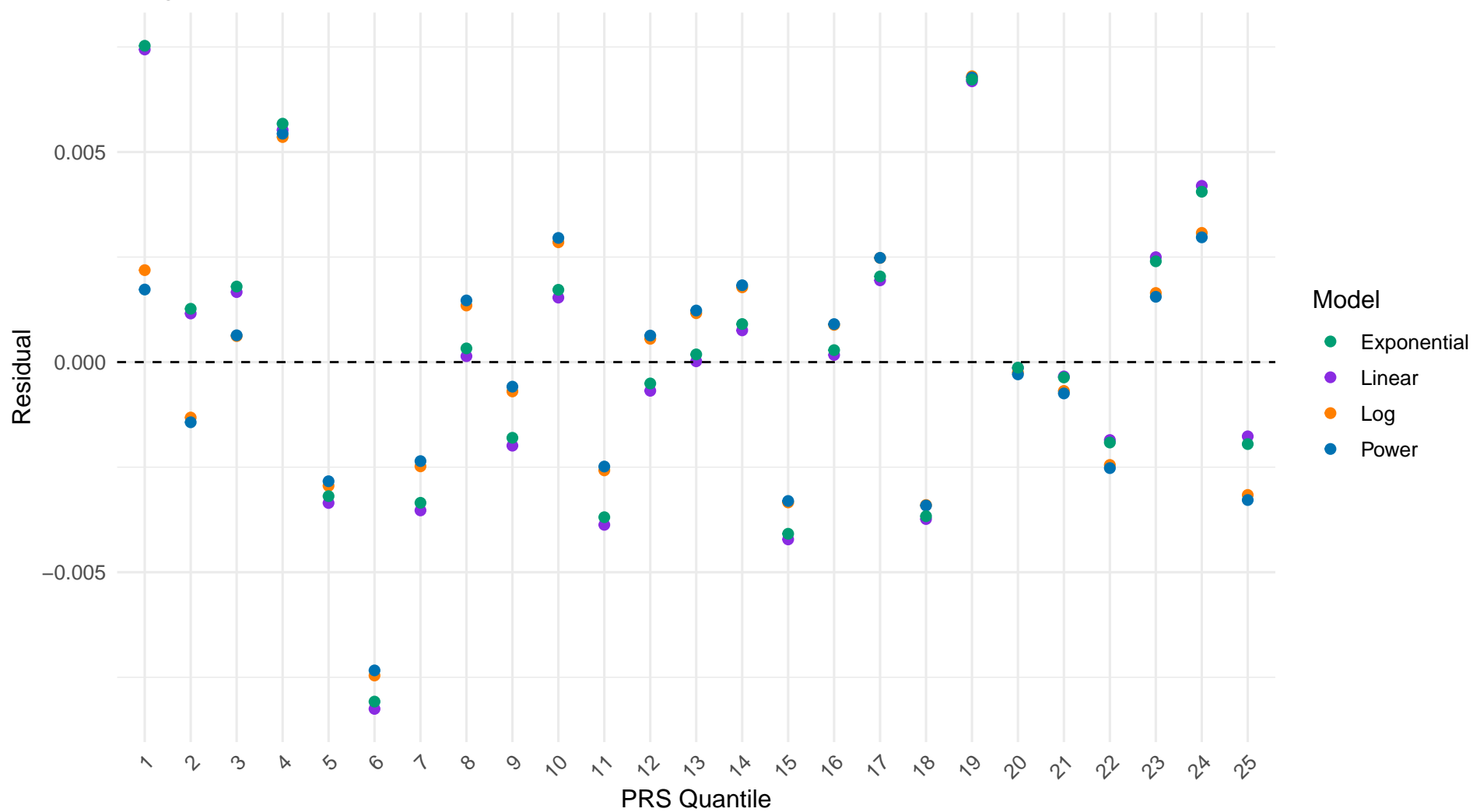Diagnosis: E11

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: E11

```
Chi2 Test for code: E11
```

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

```
OR (Q1 vs Others): 1.009  [95% CI: 0.995 - 1.024]


Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data:  matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949
```

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
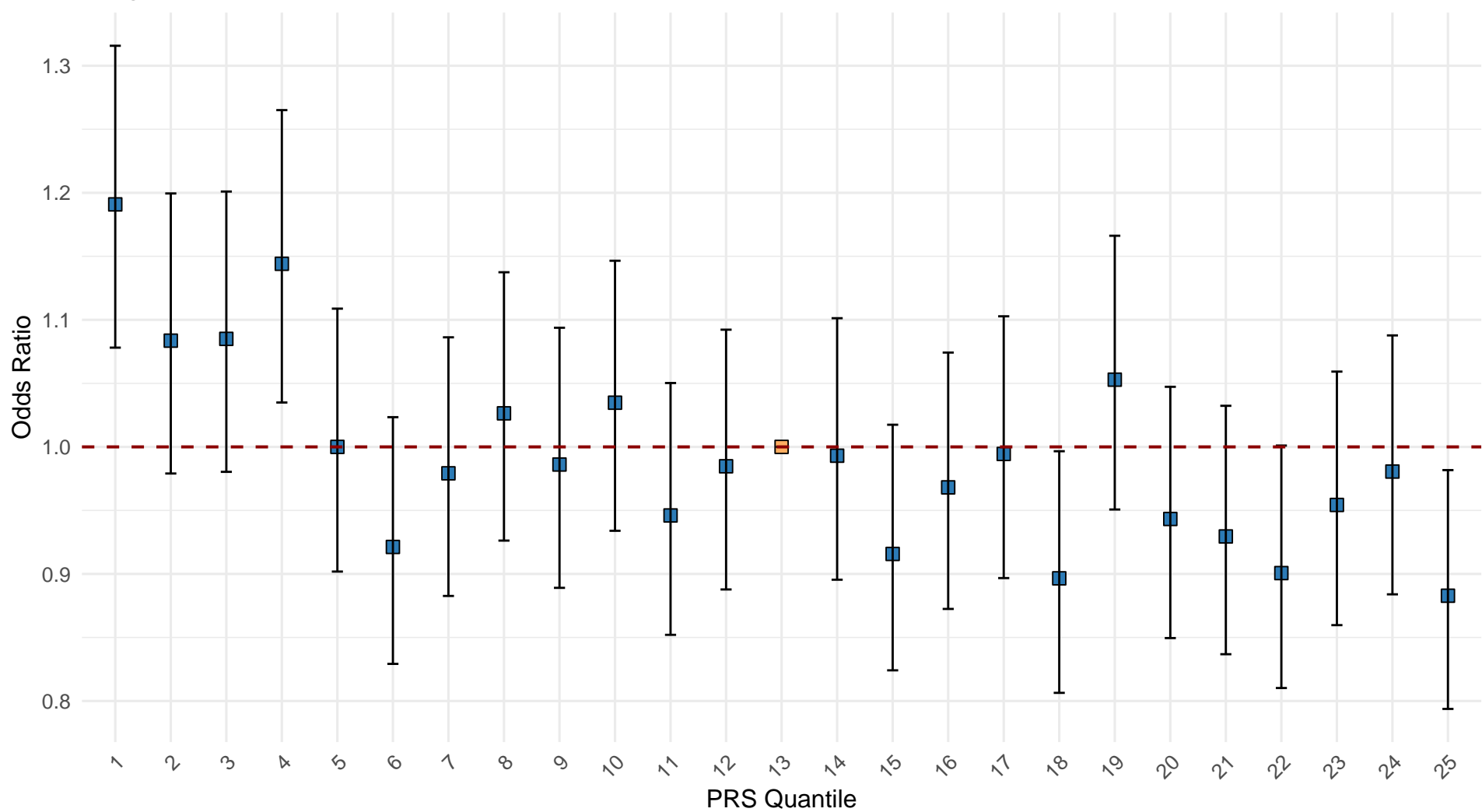Diagnosis: E11

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.19	1.08	1.32
2	1.08	0.98	1.2
3	1.09	0.98	1.2
4	1.14	1.03	1.27
5	1	0.9	1.11
6	0.92	0.83	1.02
7	0.98	0.88	1.09
8	1.03	0.93	1.14
9	0.99	0.89	1.09
10	1.03	0.93	1.15
11	0.95	0.85	1.05
12	0.98	0.89	1.09
13	1	1	1
14	0.99	0.9	1.1
15	0.92	0.82	1.02
16	0.97	0.87	1.07
17	0.99	0.9	1.1
18	0.9	0.81	1
19	1.05	0.95	1.17
20	0.94	0.85	1.05
21	0.93	0.84	1.03
22	0.9	0.81	1
23	0.95	0.86	1.06
24	0.98	0.88	1.09
25	0.88	0.79	0.98

```
Linear Model Summary for E11

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median         3Q        Max
-0.0082525 -0.0019884  0.0000198  0.0016667  0.0074398

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0765913  0.0015256  50.203  < 2e-16 ***
PRS         -0.0004664  0.0001026  -4.545 0.000145 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0037 on 23 degrees of freedom
Multiple R-squared:  0.4731, Adjusted R-squared:  0.4502
F-statistic: 20.65 on 1 and 23 DF,  p-value: 0.0001449


Log Model Summary for E11

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q      Median         3Q        Max
-0.0074582 -0.0024803  0.0005544  0.0017805  0.0068033

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.081375   0.001914  42.518  < 2e-16 ***
log(PRS)    -0.004675   0.000778  -6.009 3.97e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.00318 on 23 degrees of freedom
Multiple R-squared:  0.6109, Adjusted R-squared:  0.594
F-statistic: 36.11 on 1 and 23 DF,  p-value: 3.97e-06


Exponential Model Summary for E11

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q        Max
-0.116240 -0.030407  0.002608  0.023708  0.094702

Coefficients:
             Estimate Std. Error  t value Pr(>|t|)
(Intercept) -2.57009    0.02111 -121.724  < 2e-16 ***
PRS         -0.00646    0.00142   -4.548 0.000143 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.05121 on 23 degrees of freedom
Multiple R-squared:  0.4735, Adjusted R-squared:  0.4506
F-statistic: 20.69 on 1 and 23 DF,  p-value: 0.0001435


Power Model Summary for E11

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.081837   0.002015  40.606  < 2e-16 ***
b -0.064718   0.010298  -6.285 2.06e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.003159 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 5.633e-08
```

Prevalence analysis and model fitting for diagnosis: E22
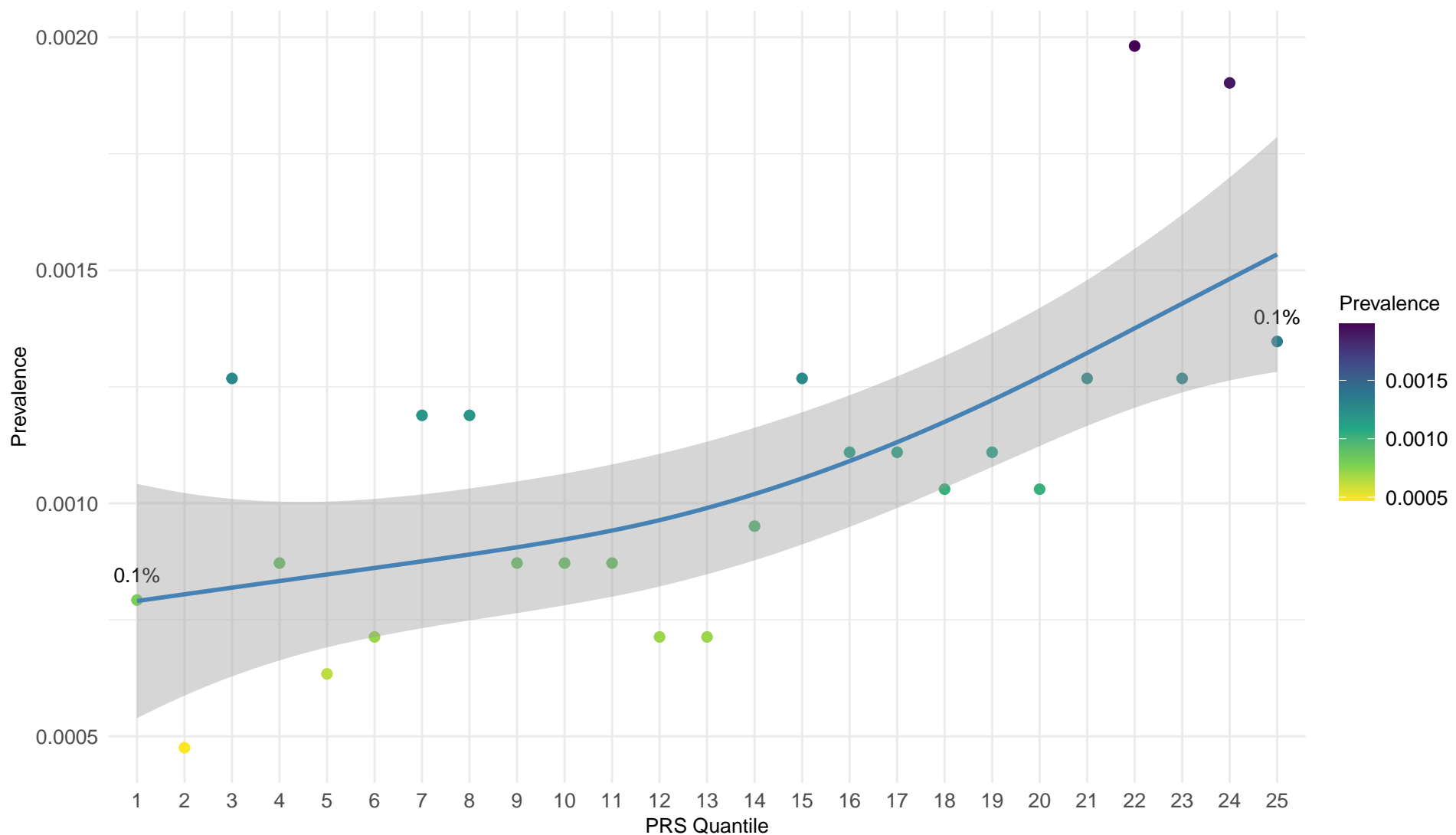

FIGURE 1:Prevalence of E22 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00093
2	0.00056
3	0.00149
4	0.00101
5	0.00074
6	0.00083
7	0.00139
8	0.00139
9	0.00102
10	0.00102
11	0.00102
12	0.00084
13	0.00083
14	0.00112
15	0.00148
16	0.0013
17	0.0013
18	0.00121
19	0.00129
20	0.0012
21	0.00149
22	0.00232
23	0.00149
24	0.00222
25	0.00157

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−328.285308	2.282102e−06	0.4376659
2	Power	−324.617232	2.642750e−06	0.3487984
3	Log	−322.917641	2.828662e−06	0.3029878
4	Exponential (lm)	4.375093	2.194770e−06	0.4591853

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
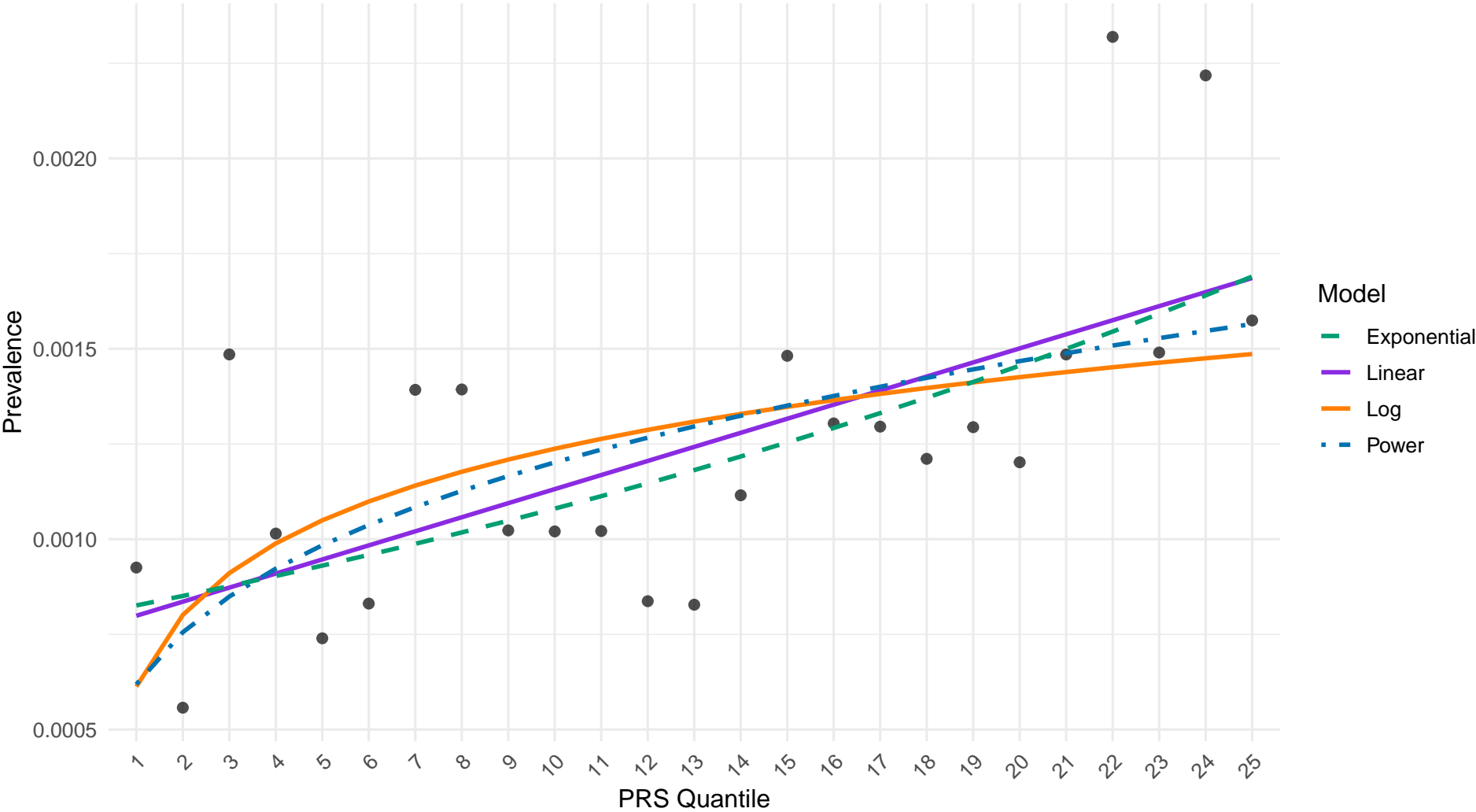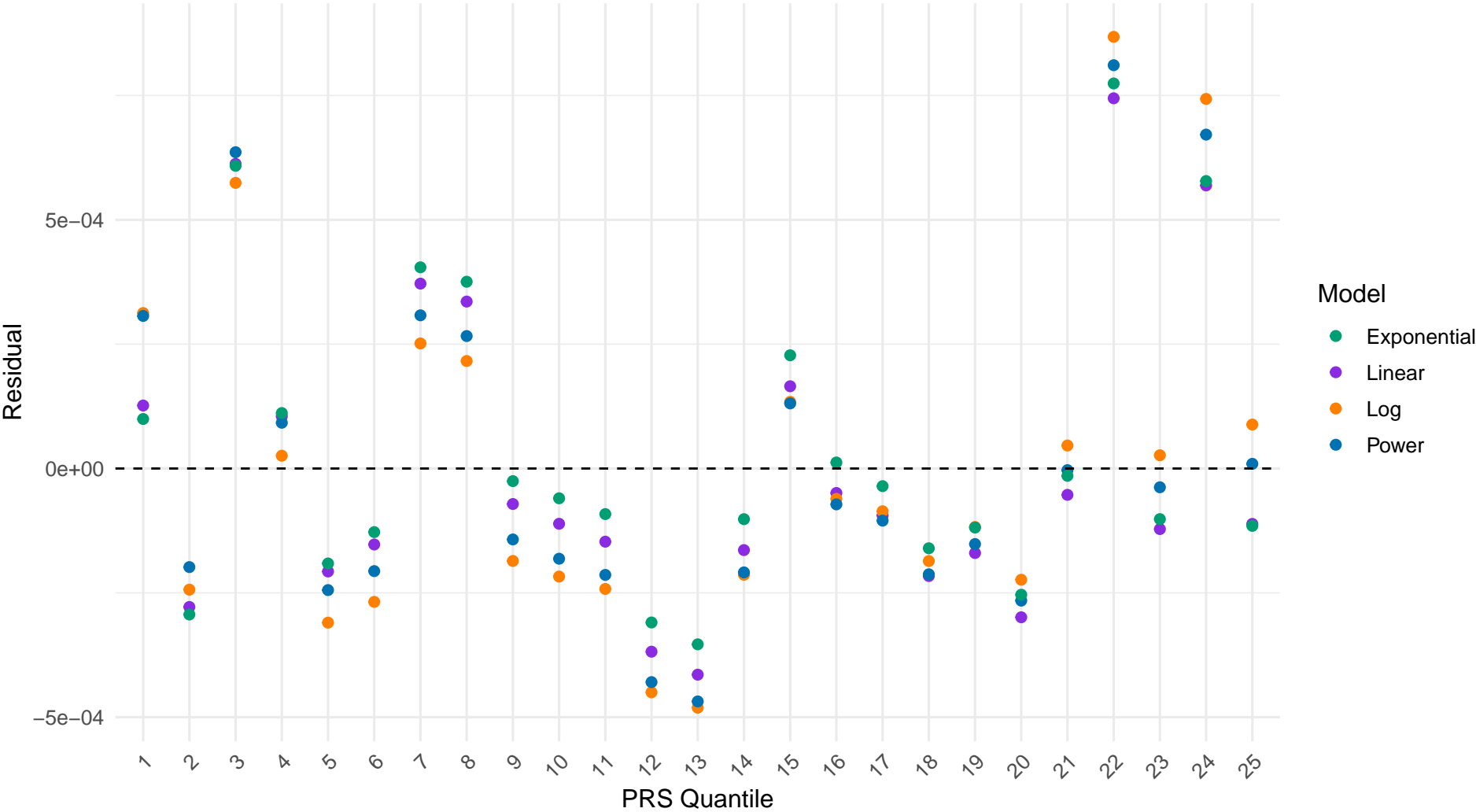Diagnosis: E22

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: E22

Chi2 Test for code: E22

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
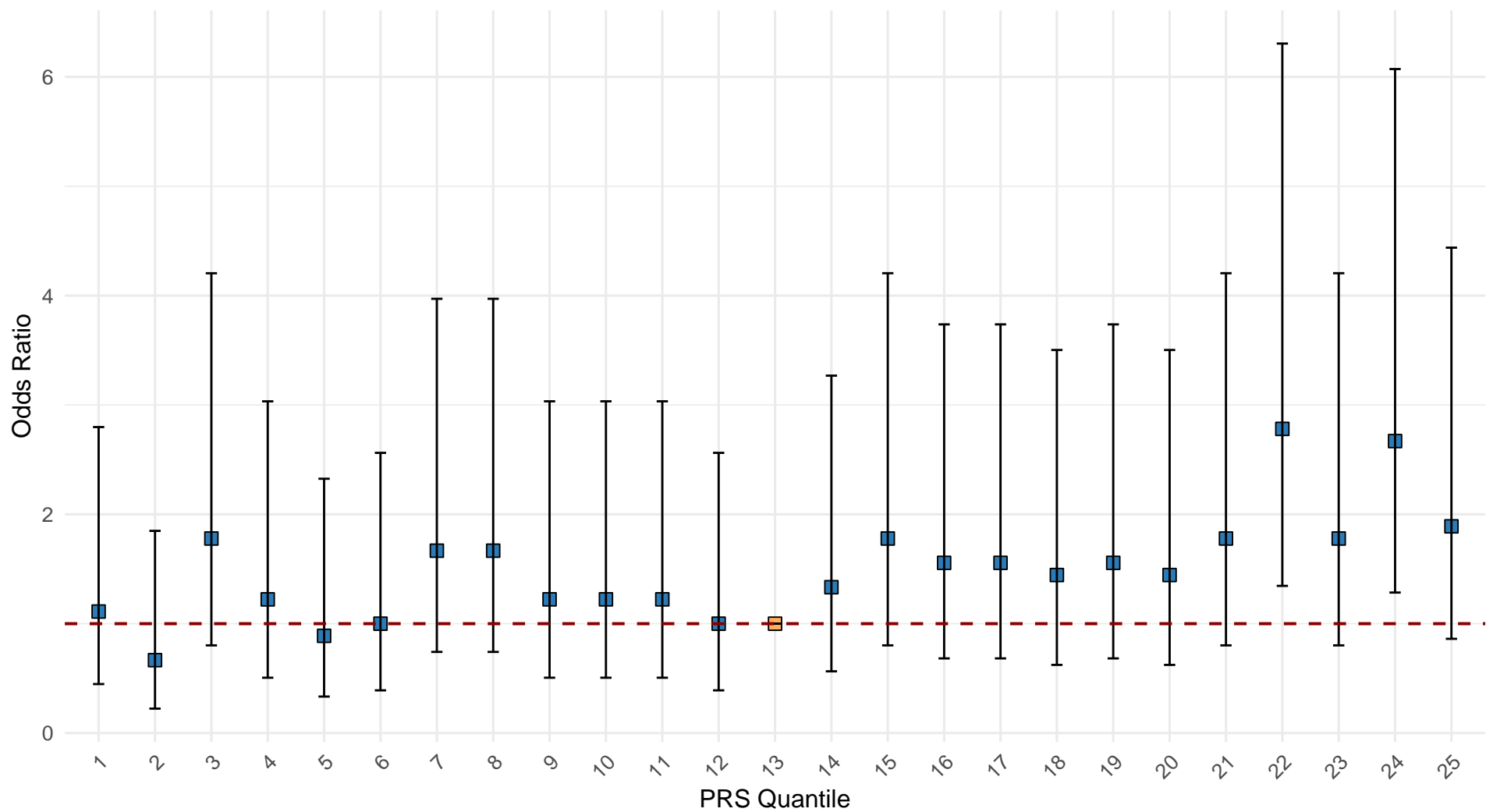Diagnosis: E22

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.11	0.45	2.8
2	0.67	0.22	1.85
3	1.78	0.8	4.2
4	1.22	0.51	3.03
5	0.89	0.33	2.33
6	1	0.39	2.56
7	1.67	0.74	3.97
8	1.67	0.74	3.97
9	1.22	0.51	3.03
10	1.22	0.51	3.03
11	1.22	0.51	3.03
12	1	0.39	2.56
13	1	1	1
14	1.33	0.56	3.27
15	1.78	0.8	4.2
16	1.56	0.68	3.74
17	1.56	0.68	3.74
18	1.44	0.62	3.5
19	1.56	0.68	3.74
20	1.44	0.62	3.5
21	1.78	0.8	4.2
22	2.78	1.35	6.3
23	1.78	0.8	4.2
24	2.67	1.28	6.07
25	1.89	0.86	4.44

```
Linear Model Summary for E22

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0004145 -0.0001700 -0.0001111  0.0001266  0.0007443

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 7.618e-04  1.299e-04   5.866 5.6e-06 ***
PRS         3.696e-05  8.736e-06   4.231 0.000317 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.000315 on 23 degrees of freedom
Multiple R-squared:  0.4377, Adjusted R-squared:  0.4132
F-statistic:  17.9 on 1 and 23 DF,  p-value: 0.0003166


Log Model Summary for E22

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-4.810e-04 -2.237e-04 -8.597e-05  1.340e-04  8.678e-04

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 6.129e-04  2.111e-04   2.904 0.00801 **
log(PRS)    2.713e-04  8.581e-05   3.162 0.00436 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0003507 on 23 degrees of freedom
Multiple R-squared:  0.303, Adjusted R-squared:  0.2727
F-statistic: 9.998 on 1 and 23 DF,  p-value: 0.004357


Exponential Model Summary for E22

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.42315 -0.12438 -0.05706  0.11638  0.52720

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -7.128898   0.100688 -70.802  < 2e-16 ***
PRS          0.029831   0.006773   4.404 0.000205 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.2442 on 23 degrees of freedom
Multiple R-squared:  0.4575, Adjusted R-squared:  0.4339
F-statistic:  19.4 on 1 and 23 DF,  p-value: 0.0002055


Power Model Summary for E22

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0006187  0.0001462   4.233 0.000315 ***
b 0.2883451  0.0880882   3.273 0.003337 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.000339 on 23 degrees of freedom

Number of iterations to convergence: 9
Achieved convergence tolerance: 1.932e-06
```

Prevalence analysis and model fitting for diagnosis: E66
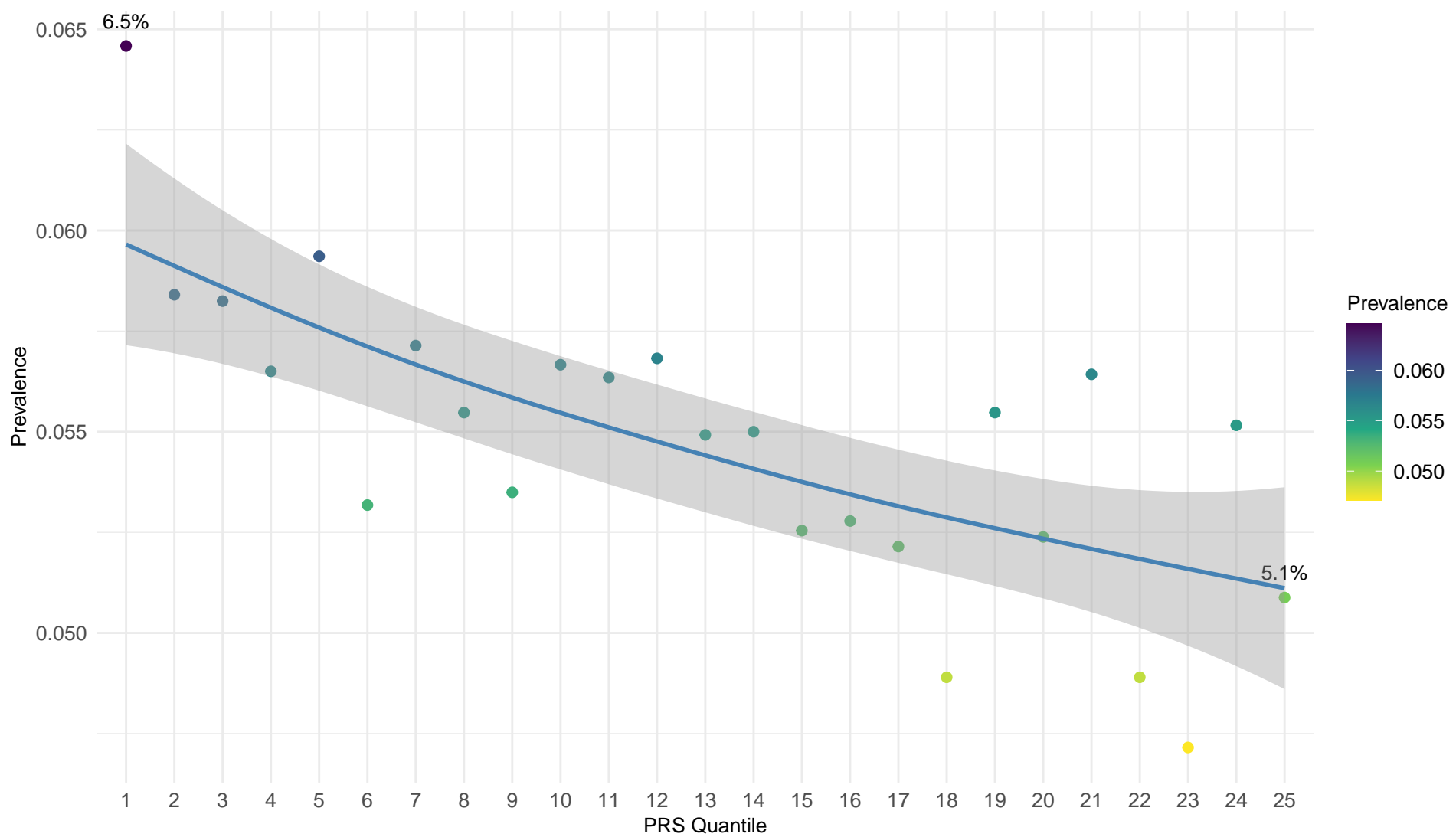

FIGURE 1:Prevalence of E66 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.07542
2	0.06846
3	0.06823
4	0.06577
5	0.06924
6	0.06194
7	0.06692
8	0.06501
9	0.06278
10	0.06632
11	0.06601
12	0.06669
13	0.06374
14	0.0645
15	0.06139
16	0.06203
17	0.06089
18	0.05748
19	0.06471
20	0.06111
21	0.06609
22	0.05724
23	0.05542
24	0.06433
25	0.05946

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Power	−219.28809	0.0001785709	0.6006048
2	Log	−219.26873	0.0001787092	0.6002955
3	Linear	−215.28340	0.0002095942	0.5312176
4	Exponential (lm)	−77.82915	0.0002074575	0.5359965

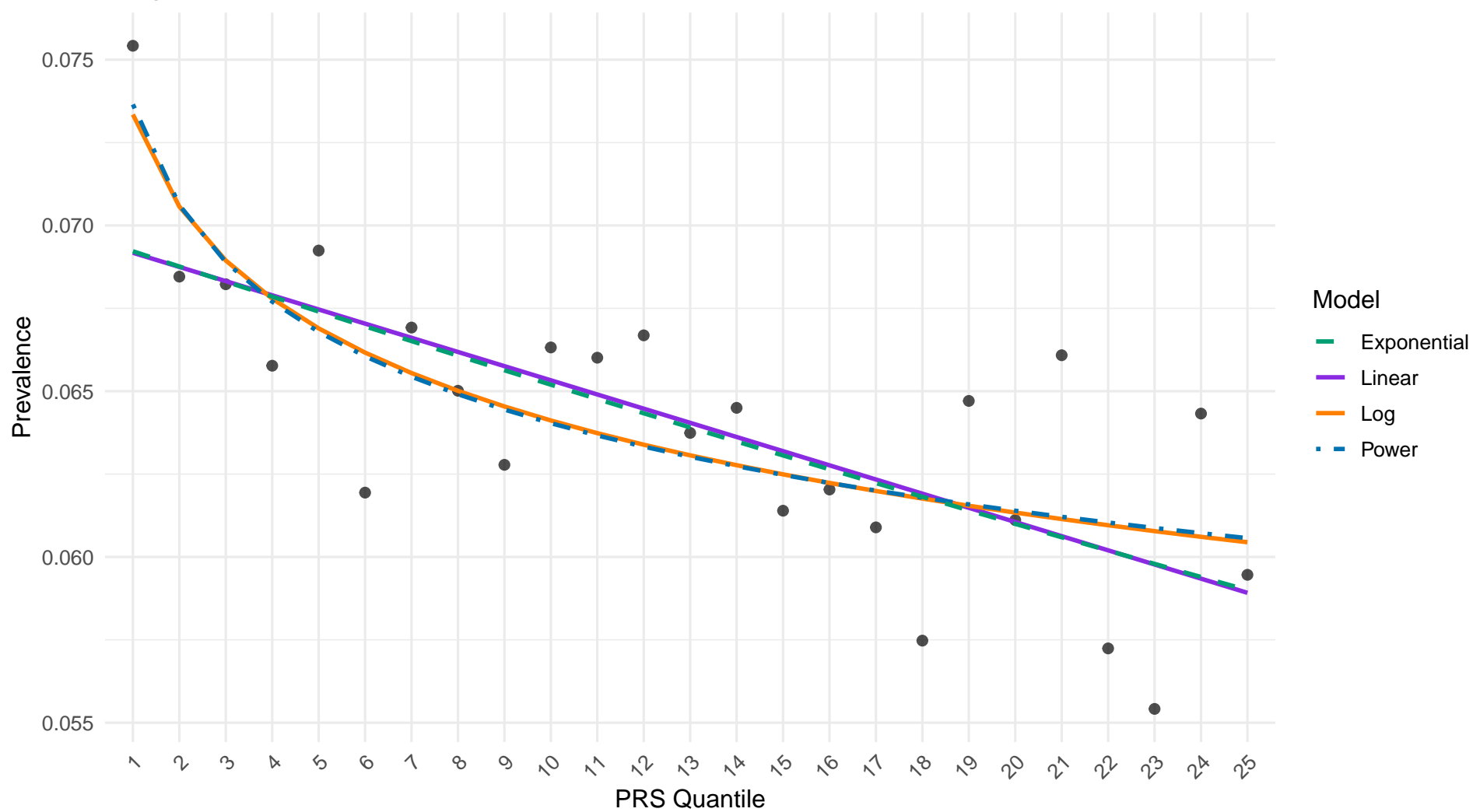FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
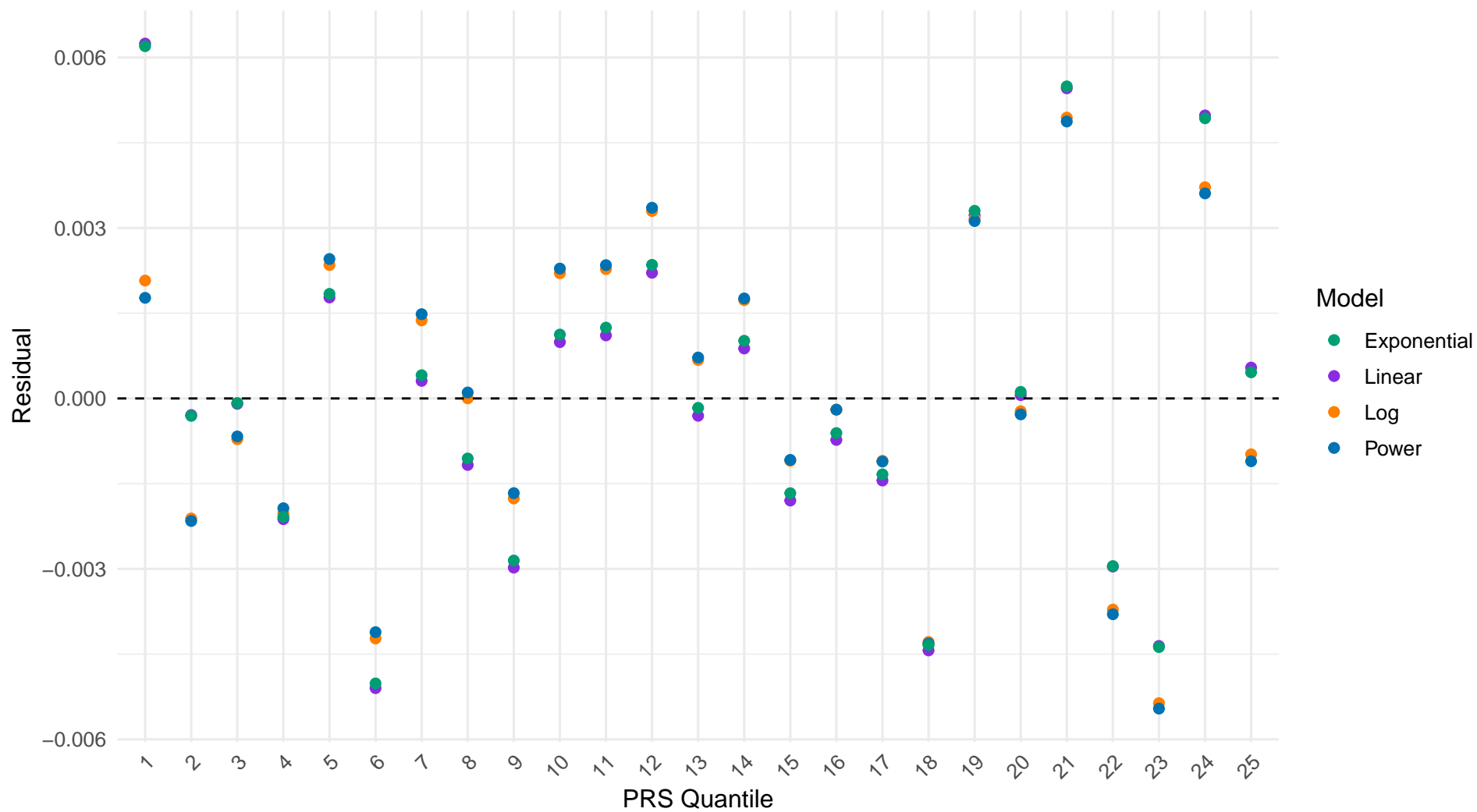Diagnosis: E66

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: E66

Chi2 Test for code: E66

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 − 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
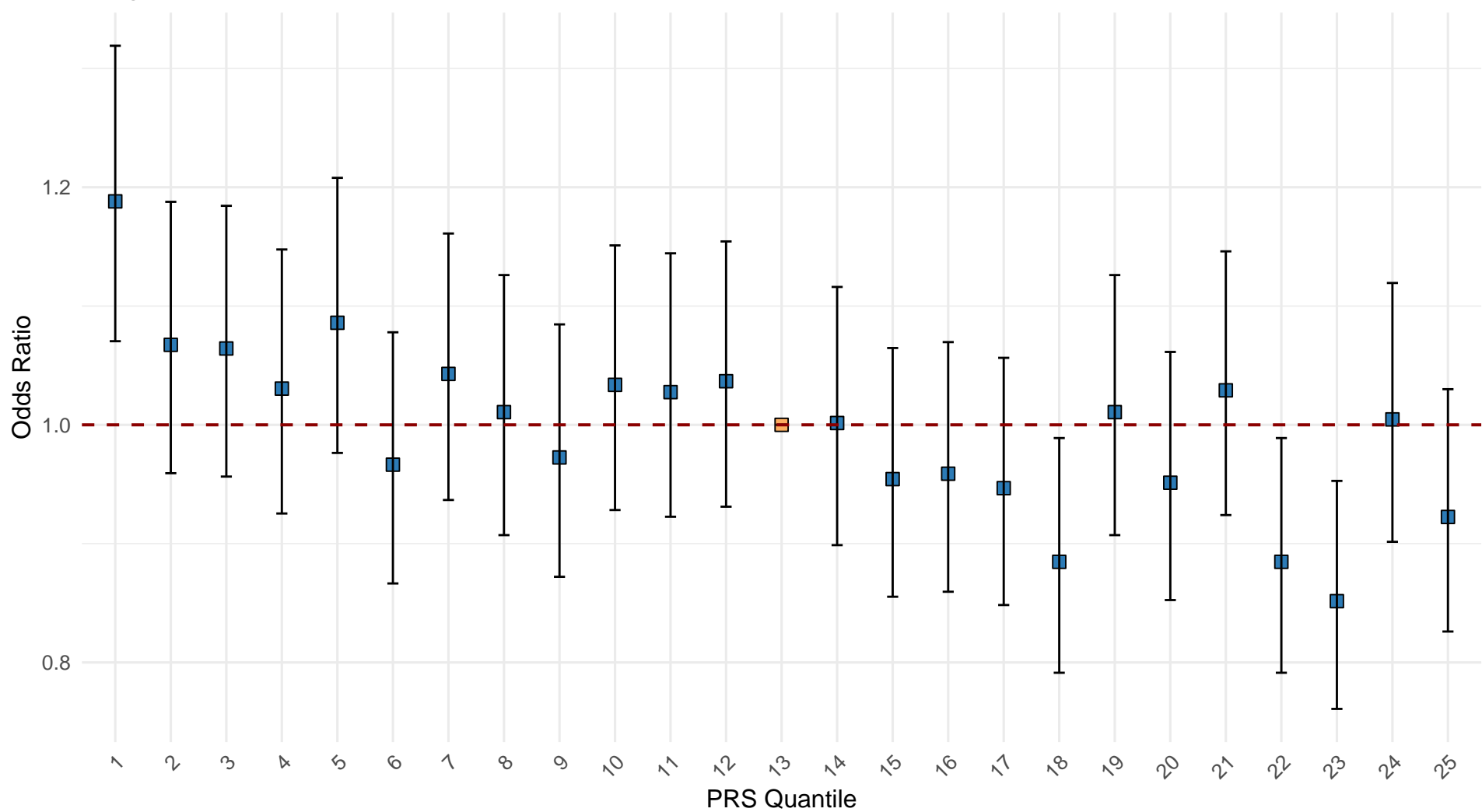Diagnosis: E66

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.19	1.07	1.32
2	1.07	0.96	1.19
3	1.06	0.96	1.18
4	1.03	0.93	1.15
5	1.09	0.98	1.21
6	0.97	0.87	1.08
7	1.04	0.94	1.16
8	1.01	0.91	1.13
9	0.97	0.87	1.08
10	1.03	0.93	1.15
11	1.03	0.92	1.14
12	1.04	0.93	1.15
13	1	1	1
14	1	0.9	1.12
15	0.95	0.86	1.06
16	0.96	0.86	1.07
17	0.95	0.85	1.06
18	0.88	0.79	0.99
19	1.01	0.91	1.13
20	0.95	0.85	1.06
21	1.03	0.92	1.15
22	0.88	0.79	0.99
23	0.85	0.76	0.95
24	1	0.9	1.12
25	0.92	0.83	1.03

```
Linear Model Summary for E66

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.005098 -0.001797 -0.000095  0.001109  0.006245

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  6.960e-02  1.245e-03  55.922  < 2e-16 ***
PRS         -4.274e-04  8.372e-05  -5.105 3.59e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.003019 on 23 degrees of freedom
Multiple R-squared:  0.5312, Adjusted R-squared:  0.5108
F-statistic: 26.06 on 1 and 23 DF,  p-value: 3.595e-05


Log Model Summary for E66

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0053626 -0.0017605 -0.0001989  0.0022032  0.0049419

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.073347   0.001678  43.718  < 2e-16 ***
log(PRS)    -0.004008   0.000682  -5.877 5.45e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002787 on 23 degrees of freedom
Multiple R-squared:  0.6003, Adjusted R-squared:  0.5829
F-statistic: 34.54 on 1 and 23 DF,  p-value: 5.448e-06


Exponential Model Summary for E66

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.077863 -0.026803 -0.001178  0.019063  0.086757

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -2.663780   0.019452 -136.942  < 2e-16 ***
PRS         -0.006657   0.001308   -5.087 3.76e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.04718 on 23 degrees of freedom
Multiple R-squared:  0.5295, Adjusted R-squared:  0.509
F-statistic: 25.88 on 1 and 23 DF,  p-value: 3.757e-05


Power Model Summary for E66

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.073651   0.001772  41.572  < 2e-16 ***
b -0.060764   0.010040  -6.052 3.58e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002786 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.021e-07
```

Prevalence analysis and model fitting for diagnosis: G56
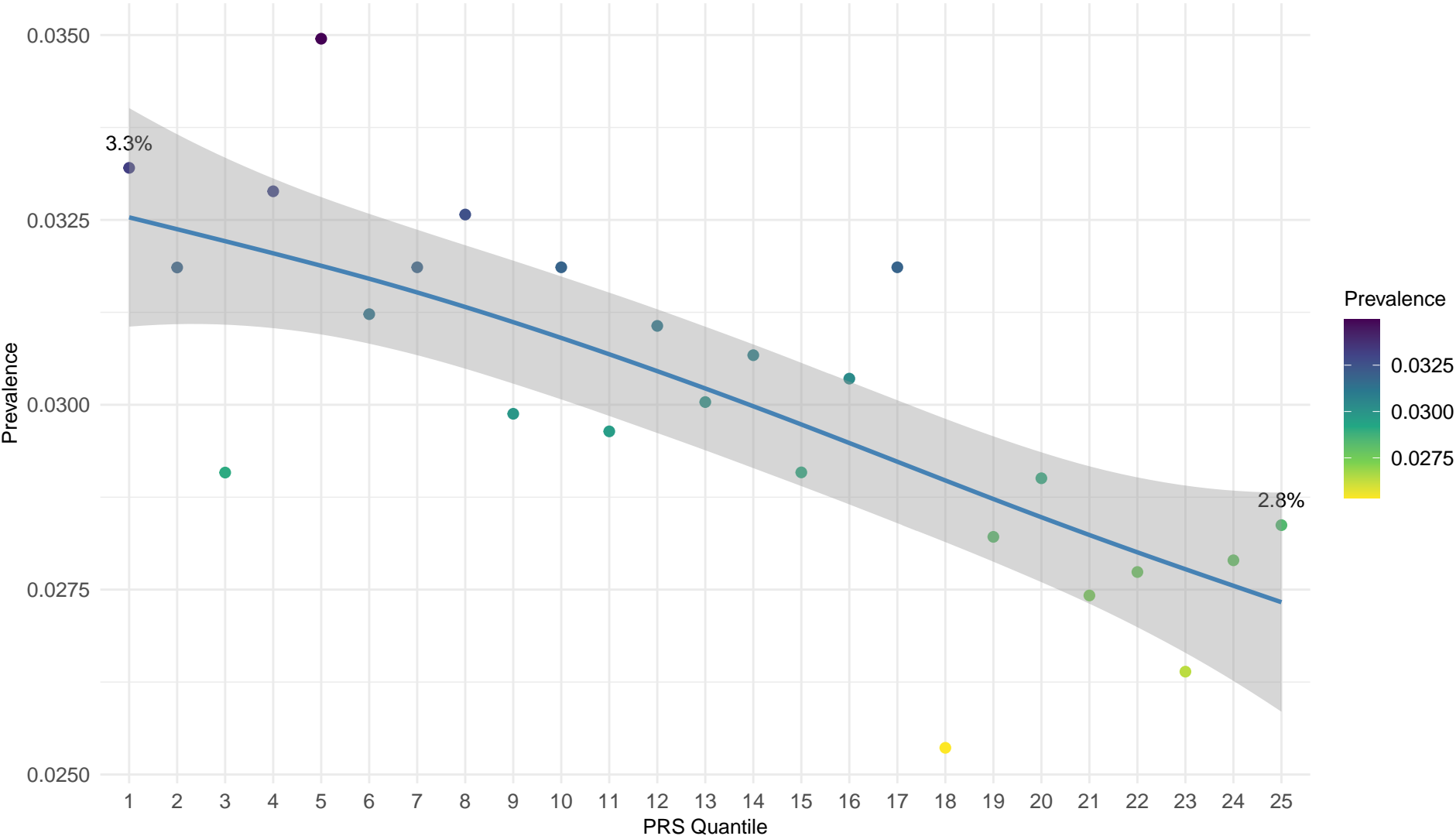
FIGURE 1:Prevalence of G56 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.03877
2	0.03734
3	0.03407
4	0.03828
5	0.04077
6	0.03637
7	0.03731
8	0.03817
9	0.03506
10	0.03729
11	0.03472
12	0.03646
13	0.03486
14	0.03597
15	0.03398
16	0.03567
17	0.0372
18	0.02981
19	0.03291
20	0.03384
21	0.03211
22	0.03247
23	0.03101
24	0.03253
25	0.03316

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−242.49968	7.056414e−05	0.5808734
2	Log	−235.70011	9.261998e−05	0.4498693
3	Power	−235.11984	9.479493e−05	0.4369509
4	Exponential (lm)	−74.67762	7.116390e−05	0.5773110

FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
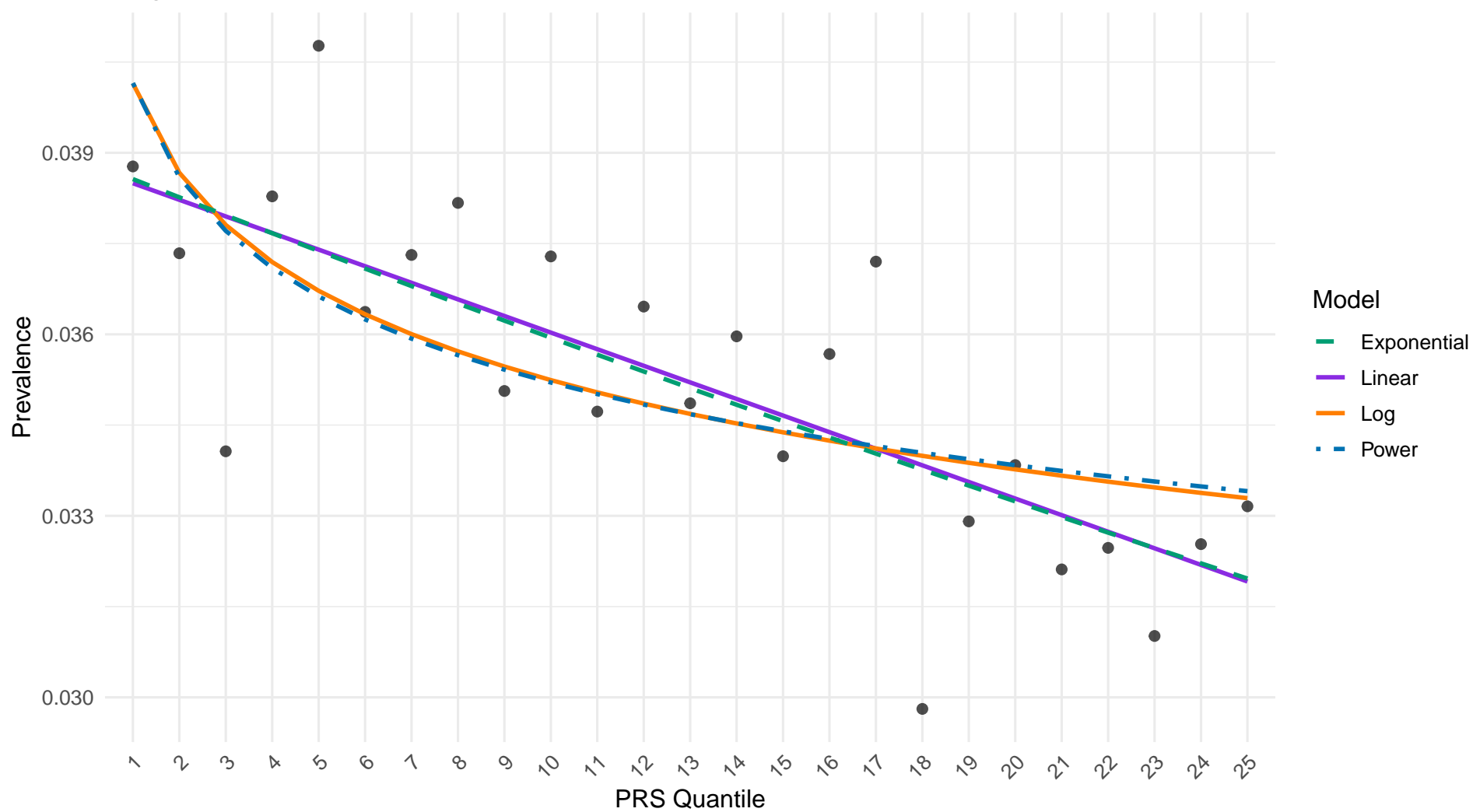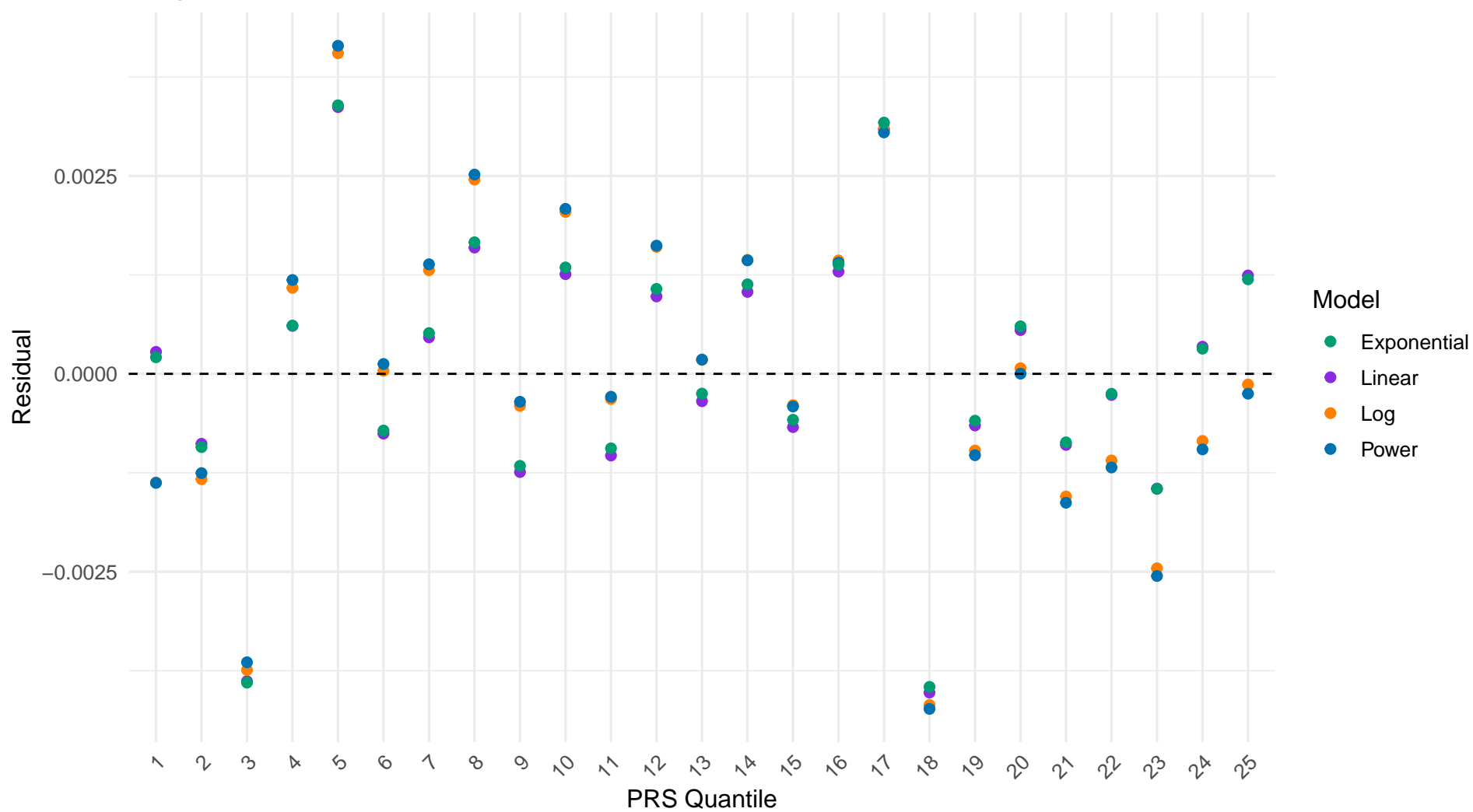Diagnosis: G56

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: G56

Chi2 Test for code: G56

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
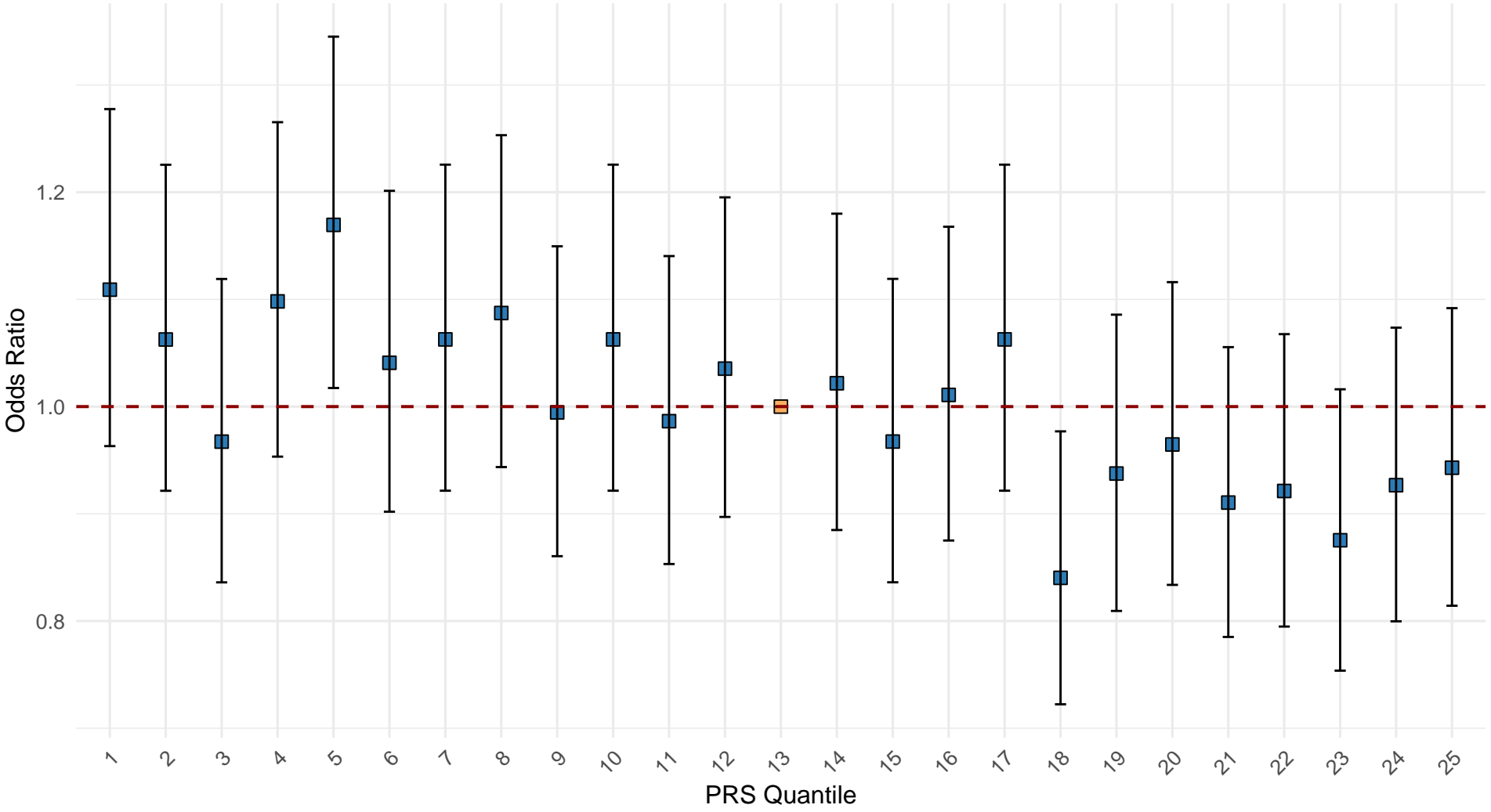Diagnosis: G56

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.11	0.96	1.28
2	1.06	0.92	1.23
3	0.97	0.84	1.12
4	1.1	0.95	1.27
5	1.17	1.02	1.35
6	1.04	0.9	1.2
7	1.06	0.92	1.23
8	1.09	0.94	1.25
9	0.99	0.86	1.15
10	1.06	0.92	1.23
11	0.99	0.85	1.14
12	1.04	0.9	1.2
13	1	1	1
14	1.02	0.88	1.18
15	0.97	0.84	1.12
16	1.01	0.88	1.17
17	1.06	0.92	1.23
18	0.84	0.72	0.98
19	0.94	0.81	1.09
20	0.96	0.83	1.12
21	0.91	0.79	1.06
22	0.92	0.79	1.07
23	0.88	0.75	1.02
24	0.93	0.8	1.07
25	0.94	0.81	1.09

```
Linear Model Summary for G56

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.0040256 -0.0008833  0.0002774  0.0010348  0.0033690

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.877e-02  7.222e-04  53.686  < 2e-16 ***
PRS         -2.743e-04  4.858e-05  -5.646 9.54e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001752 on 23 degrees of freedom
Multiple R-squared:  0.5809, Adjusted R-squared:  0.5627
F-statistic: 31.88 on 1 and 23 DF,  p-value: 9.539e-06


Log Model Summary for G56

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.0041827 -0.0010939 -0.0001349  0.0014318  0.0040498

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.040146   0.001208  33.239  < 2e-16 ***
log(PRS)    -0.002129   0.000491  -4.337 0.000243 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002007 on 23 degrees of freedom
Multiple R-squared:  0.4499, Adjusted R-squared:  0.426
F-statistic: 18.81 on 1 and 23 DF,  p-value: 0.0002432


Exponential Model Summary for G56

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.124547 -0.024479  0.005407  0.031936  0.089168

Coefficients:
              Estimate Std. Error   t value Pr(>|t|)
(Intercept) -3.247569   0.020717 -156.755  < 2e-16 ***
PRS         -0.007824   0.001394   -5.614 1.03e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.05025 on 23 degrees of freedom
Multiple R-squared:  0.5781, Adjusted R-squared:  0.5598
F-statistic: 31.52 on 1 and 23 DF,  p-value: 1.031e-05


Power Model Summary for G56

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.040153   0.001287  31.204  < 2e-16 ***
b -0.057128   0.013354  -4.278 0.000282 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.00203 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.707e-06
```

Prevalence analysis and model fitting for diagnosis: I10
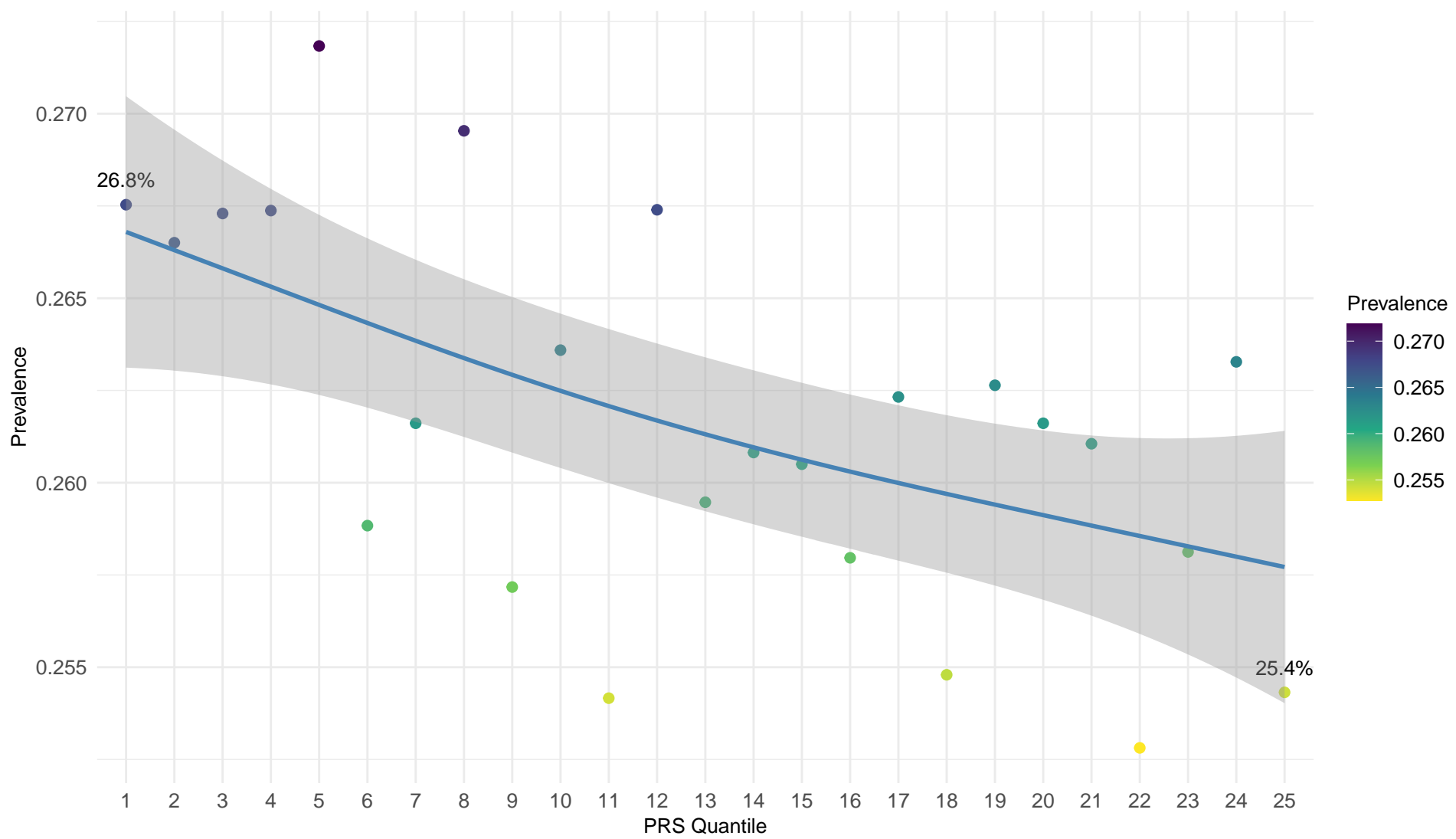
FIGURE 1:Prevalence of I10 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.31242
2	0.31237
3	0.3131
4	0.31123
5	0.31709
6	0.30149
7	0.30639
8	0.31587
9	0.3018
10	0.30851
11	0.29774
12	0.3138
13	0.30114
14	0.30586
15	0.30438
16	0.30319
17	0.30631
18	0.29949
19	0.30634
20	0.3052
21	0.30574
22	0.29595
23	0.30334
24	0.30702
25	0.29721

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−192.3348	0.0005248520	0.3576290
2	Linear	−192.3228	0.0005251055	0.3573188
3	Power	−192.2918	0.0005257563	0.3565222
4	Exponential (lm)	−133.1301	0.0005244892	0.3580731

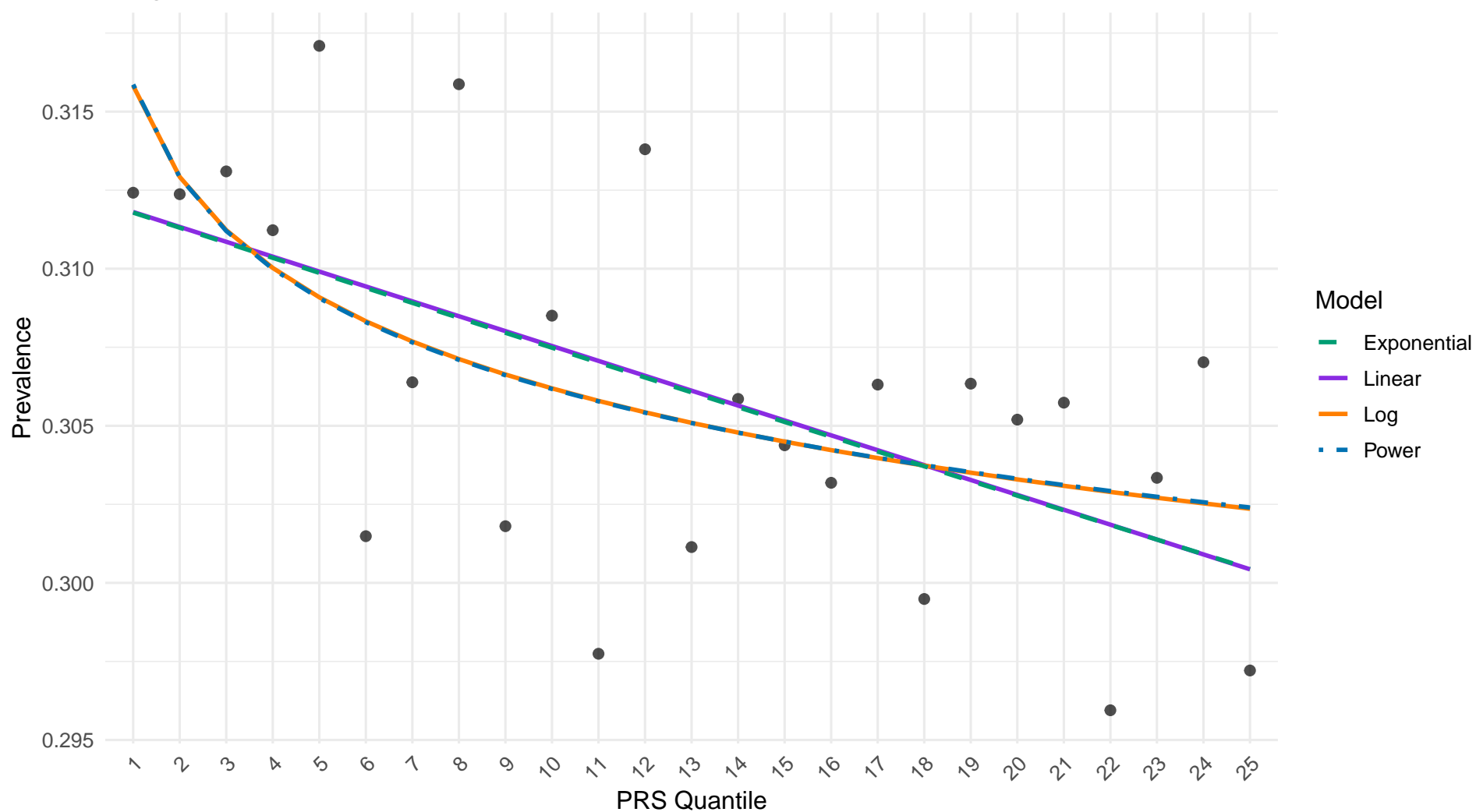FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
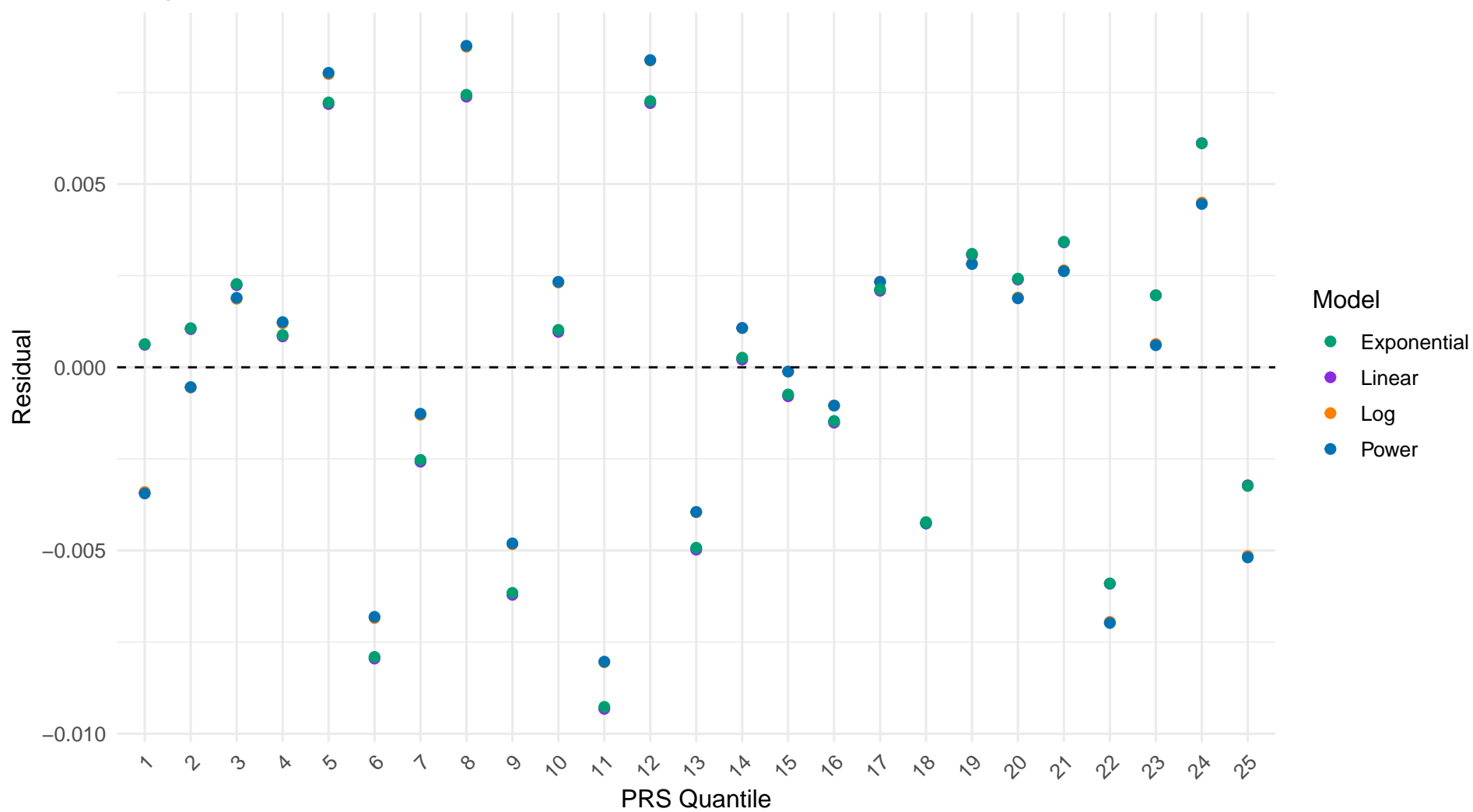Diagnosis: I10

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: I10

Chi2 Test for code: I10

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
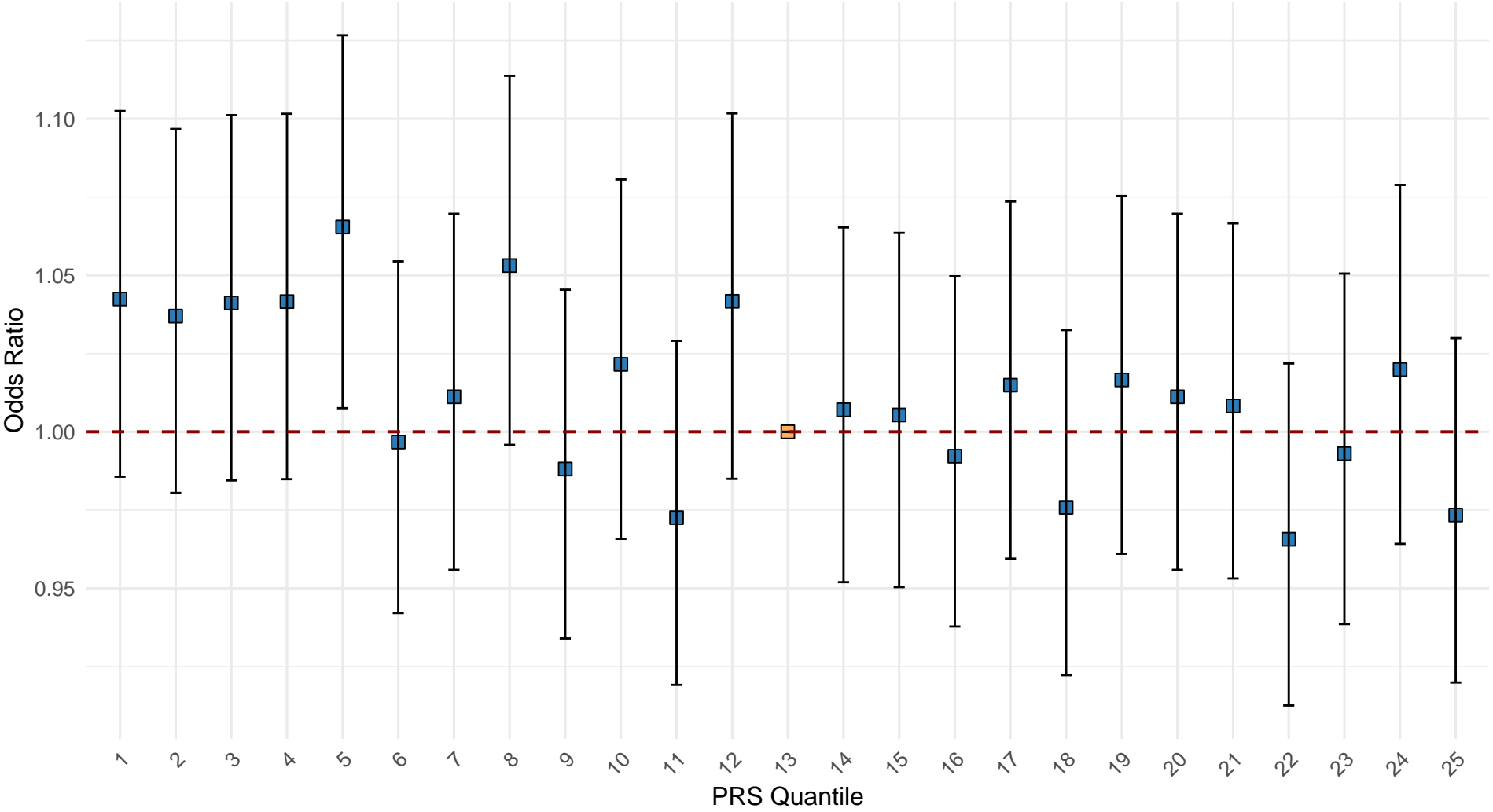Diagnosis: I10

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.04	0.99	1.1
2	1.04	0.98	1.1
3	1.04	0.98	1.1
4	1.04	0.98	1.1
5	1.07	1.01	1.13
6	1	0.94	1.05
7	1.01	0.96	1.07
8	1.05	1	1.11
9	0.99	0.93	1.05
10	1.02	0.97	1.08
11	0.97	0.92	1.03
12	1.04	0.98	1.1
13	1	1	1
14	1.01	0.95	1.07
15	1.01	0.95	1.06
16	0.99	0.94	1.05
17	1.01	0.96	1.07
18	0.98	0.92	1.03
19	1.02	0.96	1.08
20	1.01	0.96	1.07
21	1.01	0.95	1.07
22	0.97	0.91	1.02
23	0.99	0.94	1.05
24	1.02	0.96	1.08
25	0.97	0.92	1.03

```
Linear Model Summary for I10

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median         3Q        Max
-0.0093226 -0.0032198  0.0008421  0.0023946  0.0073844

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.3122793  0.0019701 158.511   <2e-16 ***
PRS         -0.0004739  0.0001325  -3.576   0.0016 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.004778 on 23 degrees of freedom
Multiple R-squared:  0.3573, Adjusted R-squared:  0.3294
F-statistic: 12.79 on 1 and 23 DF,  p-value: 0.001602


Log Model Summary for I10

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.008050 -0.003954  0.000635  0.002338  0.008747

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.315823   0.002875 109.845  < 2e-16 ***
log(PRS)    -0.004182   0.001169  -3.578  0.00159 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.004777 on 23 degrees of freedom
Multiple R-squared:  0.3576, Adjusted R-squared:  0.3297
F-statistic:  12.8 on 1 and 23 DF,  p-value: 0.001592


Exponential Model Summary for I10

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.030651 -0.010834  0.002831  0.007958  0.023824

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -1.1638947  0.0064361 -180.838  < 2e-16 ***
PRS         -0.0015432  0.0004329   -3.564  0.00165 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.01561 on 23 degrees of freedom
Multiple R-squared:  0.3558, Adjusted R-squared:  0.3278
F-statistic: 12.71 on 1 and 23 DF,  p-value: 0.001647


Power Model Summary for I10

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.315862   0.002914 108.383  < 2e-16 ***
b -0.013531   0.003772  -3.588  0.00156 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.004781 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.269e-06
```

Prevalence analysis and model fitting for diagnosis: I21
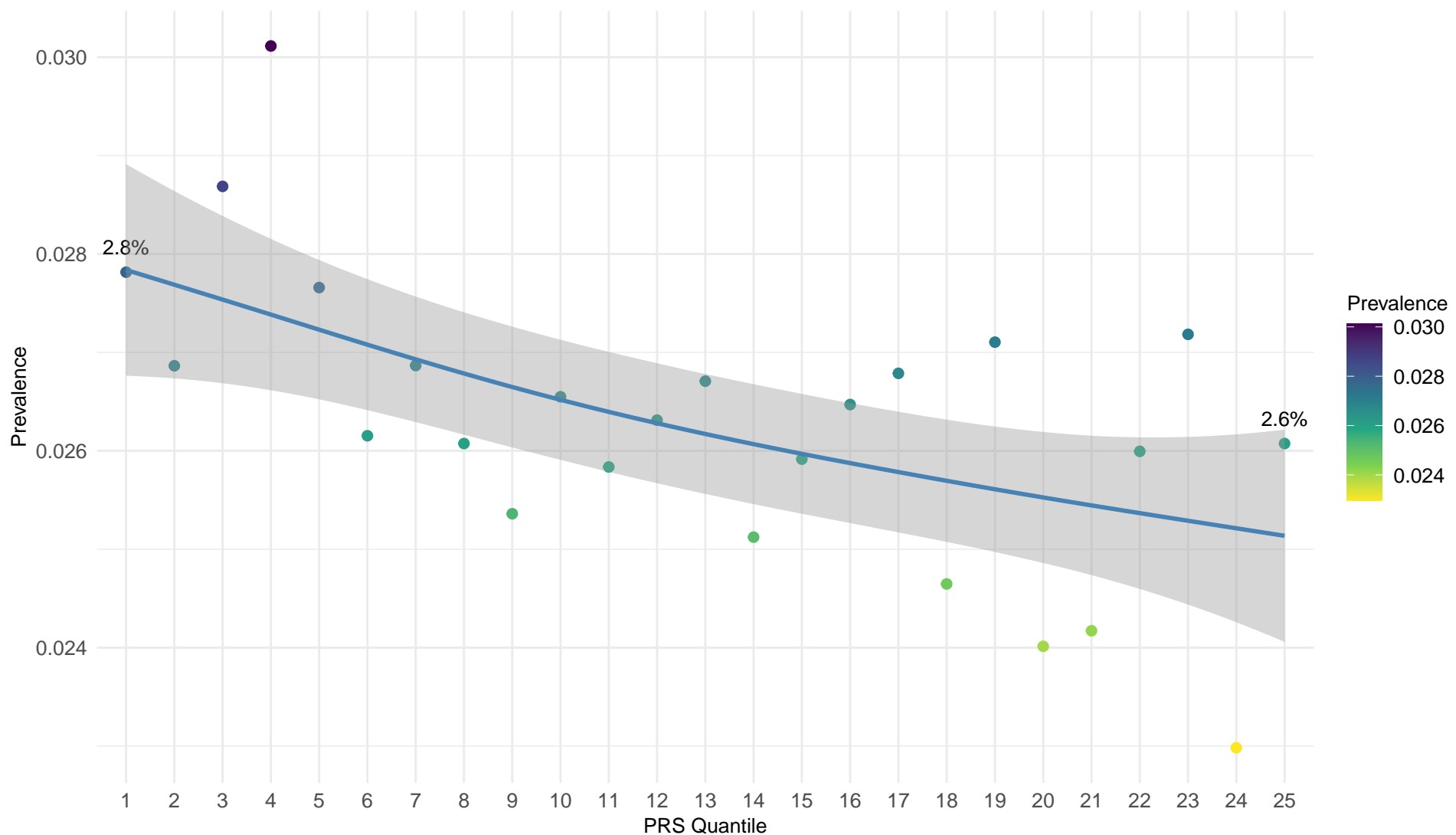

FIGURE 1:Prevalence of I21 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.03248
2	0.03149
3	0.0336
4	0.03505
5	0.03226
6	0.03046
7	0.03146
8	0.03056
9	0.02976
10	0.03107
11	0.03027
12	0.03088
13	0.031
14	0.02946
15	0.03028
16	0.03111
17	0.03128
18	0.02897
19	0.03161
20	0.02801
21	0.02831
22	0.03043
23	0.03195
24	0.0268
25	0.03047

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−253.71493	4.505626e−05	0.3684696
2	Log	−253.59174	4.527883e−05	0.3653500
3	Power	−253.43129	4.557038e−05	0.3612635
4	Exponential (lm)	−79.48778	4.486697e−05	0.3711228

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
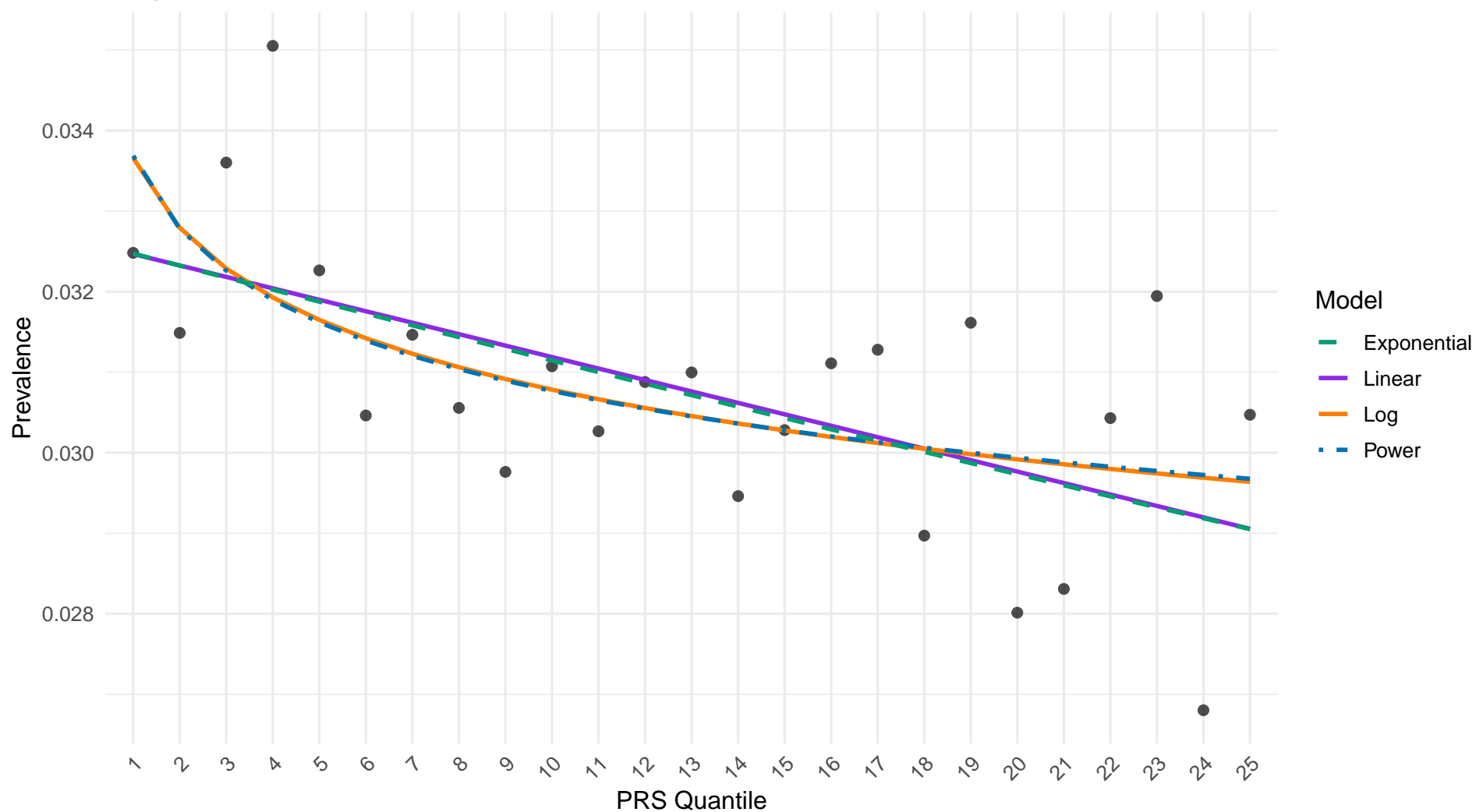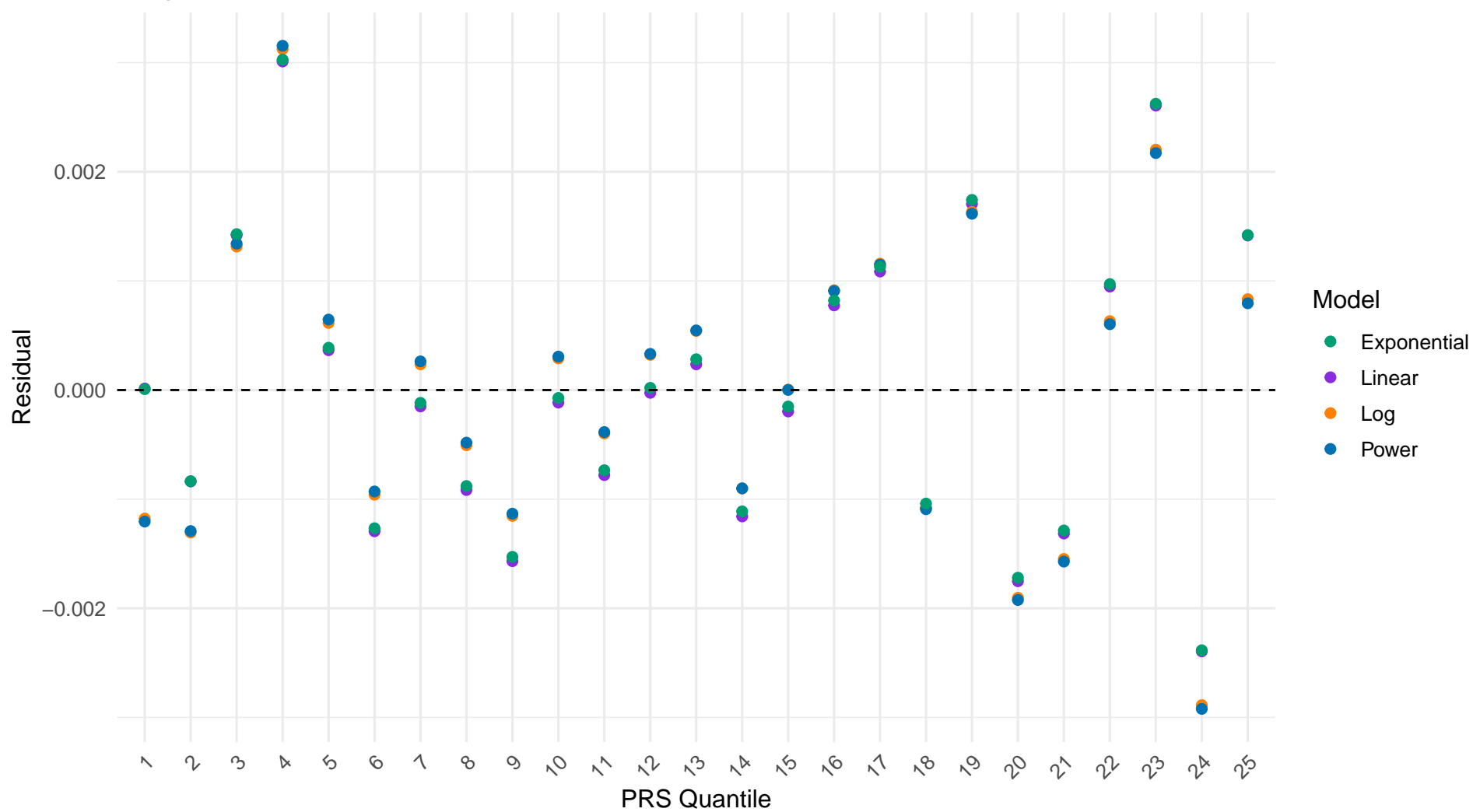Diagnosis: I21

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: I21

```
Chi2 Test for code: I21
```

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

```
OR (Q1 vs Others): 1.009  [95% CI: 0.995 - 1.024]


Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data:  matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949
```

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
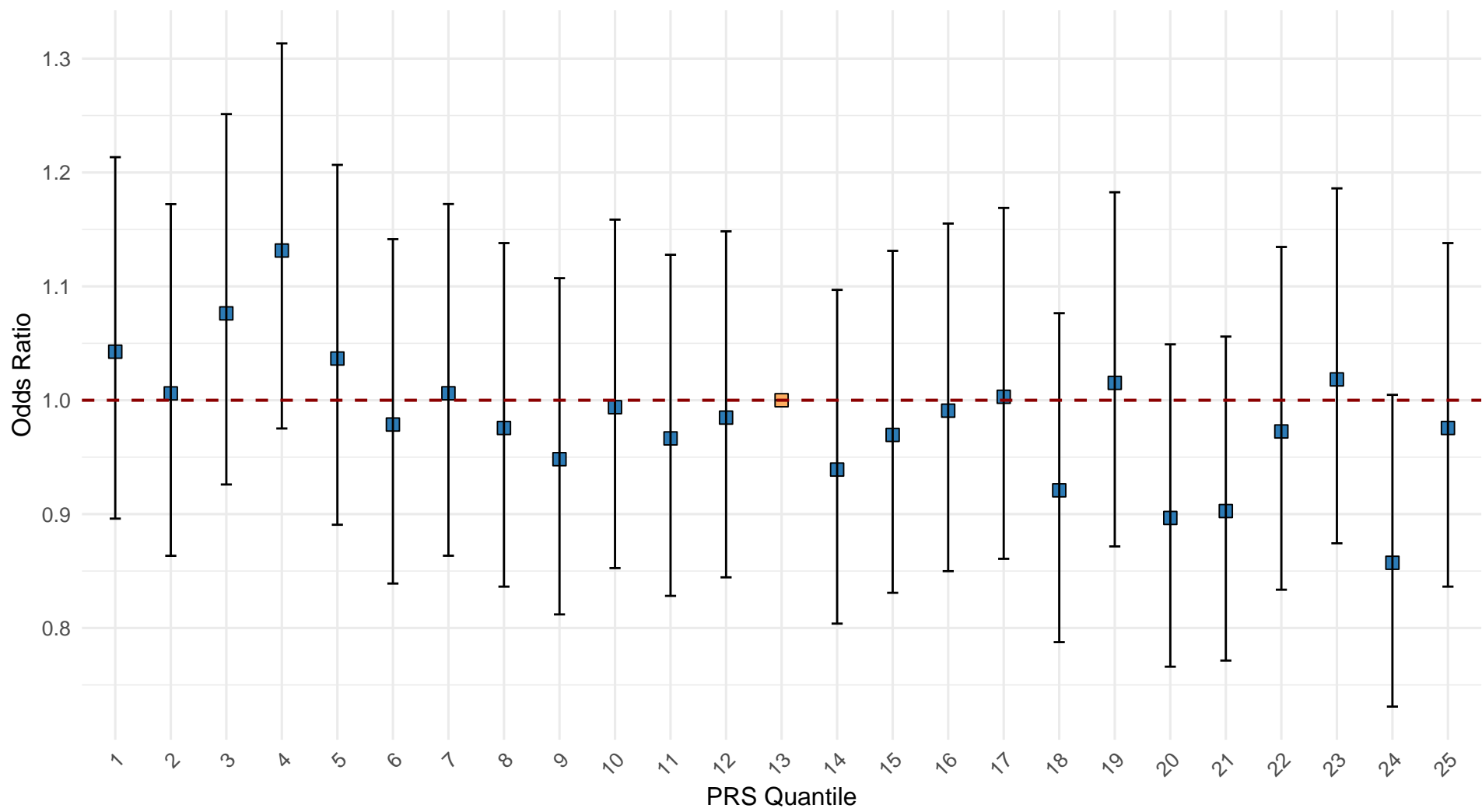Diagnosis: I21

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.04	0.9	1.21
2	1.01	0.86	1.17
3	1.08	0.93	1.25
4	1.13	0.98	1.31
5	1.04	0.89	1.21
6	0.98	0.84	1.14
7	1.01	0.86	1.17
8	0.98	0.84	1.14
9	0.95	0.81	1.11
10	0.99	0.85	1.16
11	0.97	0.83	1.13
12	0.98	0.84	1.15
13	1	1	1
14	0.94	0.8	1.1
15	0.97	0.83	1.13
16	0.99	0.85	1.16
17	1	0.86	1.17
18	0.92	0.79	1.08
19	1.02	0.87	1.18
20	0.9	0.77	1.05
21	0.9	0.77	1.06
22	0.97	0.83	1.13
23	1.02	0.87	1.19
24	0.86	0.73	1
25	0.98	0.84	1.14

```
Linear Model Summary for I21

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0023950 -0.0010798 -0.0001149  0.0009479  0.0030109

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.261e-02  5.771e-04  56.508  < 2e-16 ***
PRS         -1.422e-04  3.882e-05  -3.663  0.00129 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0014 on 23 degrees of freedom
Multiple R-squared:  0.3685,  Adjusted R-squared:  0.341
F-statistic: 13.42 on 1 and 23 DF,  p-value: 0.001293


Log Model Summary for I21

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0028875 -0.0010785  0.0002357  0.0008327  0.0031242

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0336597  0.0008445  39.858  < 2e-16 ***
log(PRS)    -0.0012492  0.0003433  -3.639  0.00137 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001403 on 23 degrees of freedom
Multiple R-squared:  0.3653,  Adjusted R-squared:  0.3378
F-statistic: 13.24 on 1 and 23 DF,  p-value: 0.001373


Exponential Model Summary for I21

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q    Median        3Q       Max
-0.085224 -0.035265 -0.002323  0.032425  0.090328

Coefficients:
             Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.422688   0.018817 -181.891  < 2e-16 ***
PRS         -0.004640   0.001266   -3.666  0.00129 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.04564 on 23 degrees of freedom
Multiple R-squared:  0.3688,  Adjusted R-squared:  0.3413
F-statistic: 13.44 on 1 and 23 DF,  p-value: 0.001285


Power Model Summary for I21

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.0336872  0.0008784  38.351  < 2e-16 ***
b -0.0393834  0.0107782  -3.654  0.00132 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001408 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.641e-06
```

Prevalence analysis and model fitting for diagnosis: I25
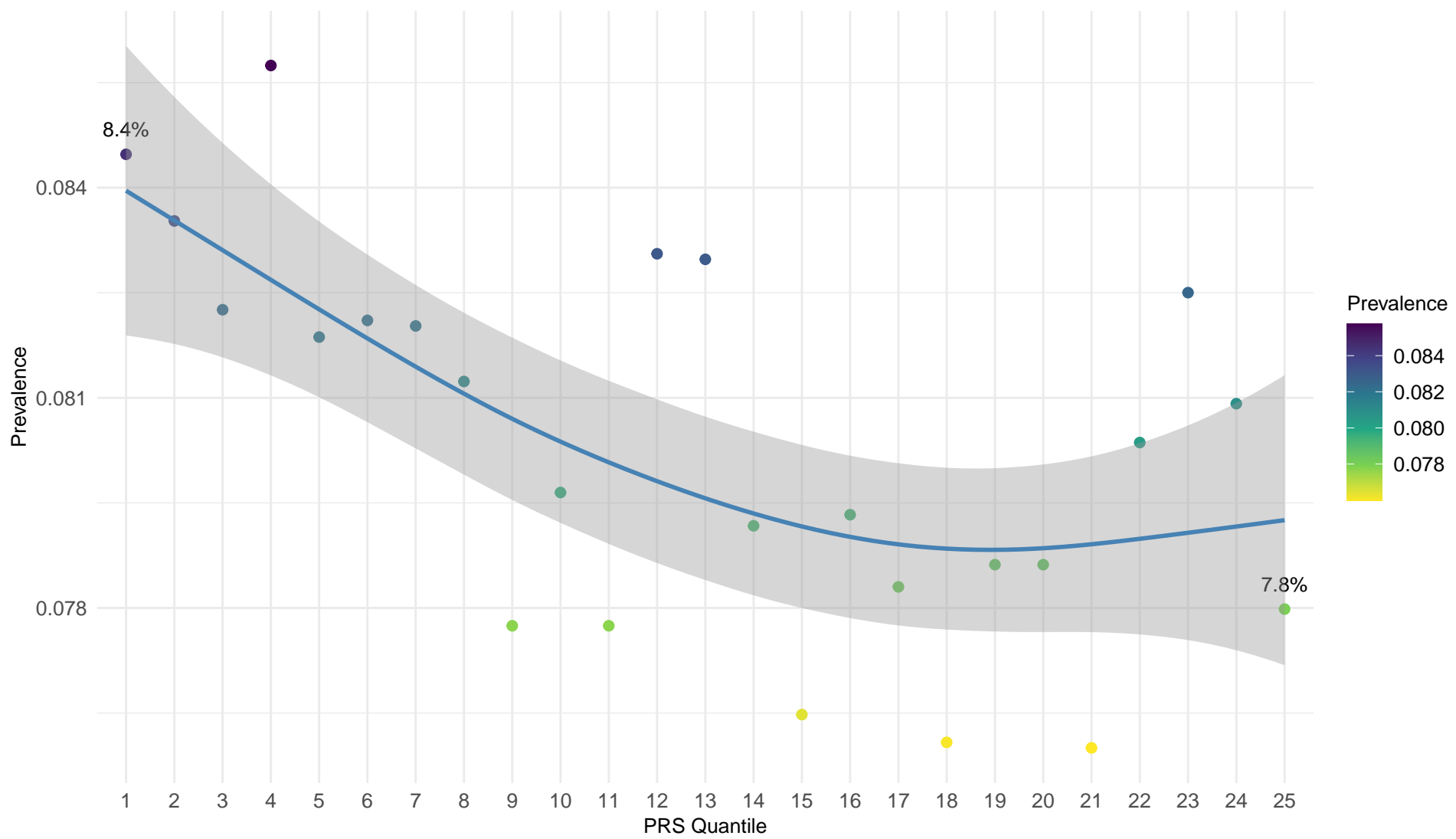
FIGURE 1:Prevalence of I25 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.09865
2	0.0979
3	0.09635
4	0.09981
5	0.0955
6	0.09563
7	0.09606
8	0.0952
9	0.09124
10	0.09322
11	0.09108
12	0.09747
13	0.0963
14	0.09284
15	0.08936
16	0.09324
17	0.09143
18	0.08943
19	0.0917
20	0.09172
21	0.08901
22	0.09407
23	0.09695
24	0.09436
25	0.09114

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−227.5139	0.0001285031	0.4269011
2	Power	−227.5031	0.0001285588	0.4266529
3	Linear	−224.1041	0.0001472812	0.3431547
4	Exponential (lm)	−105.7809	0.0001464888	0.3466887

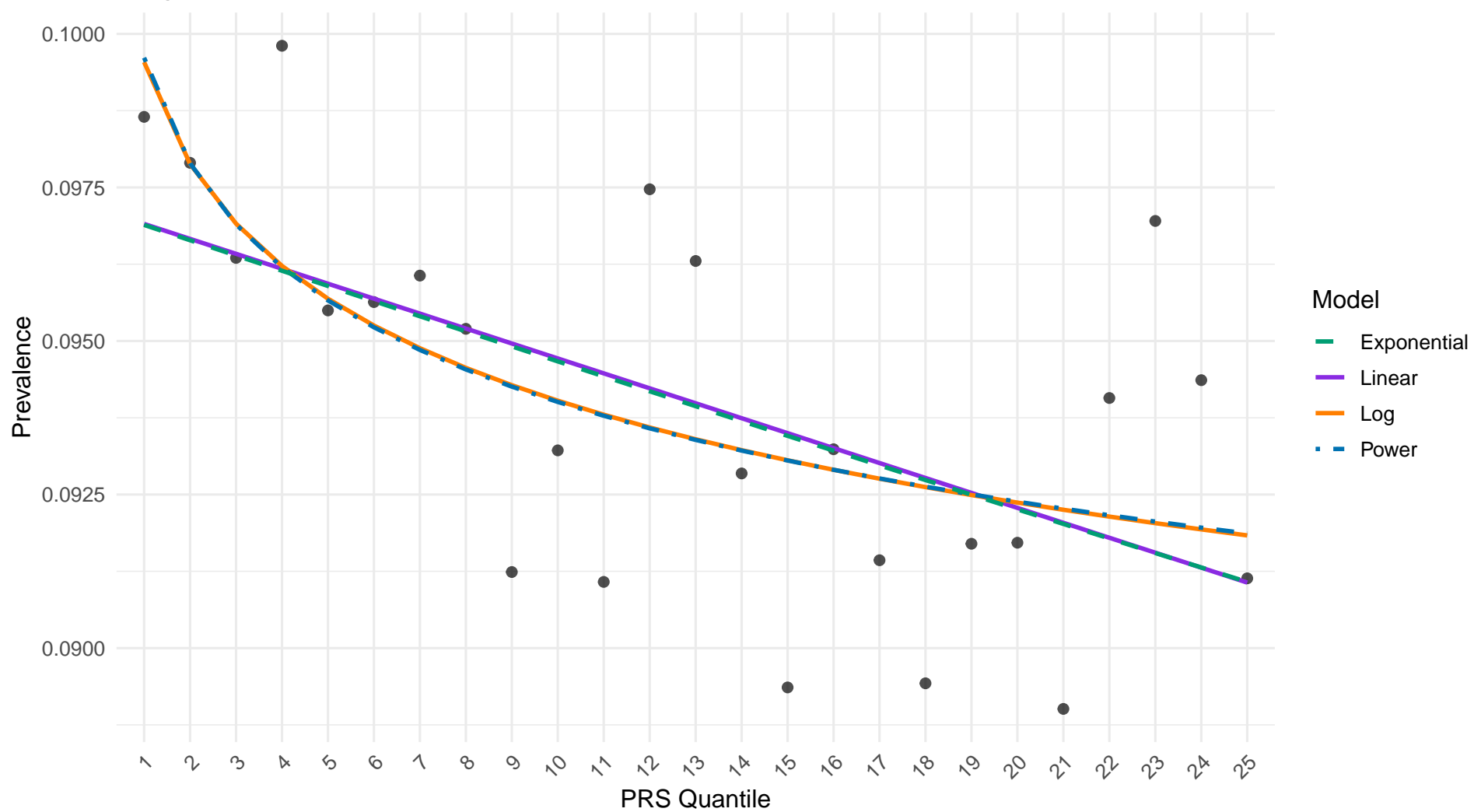FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
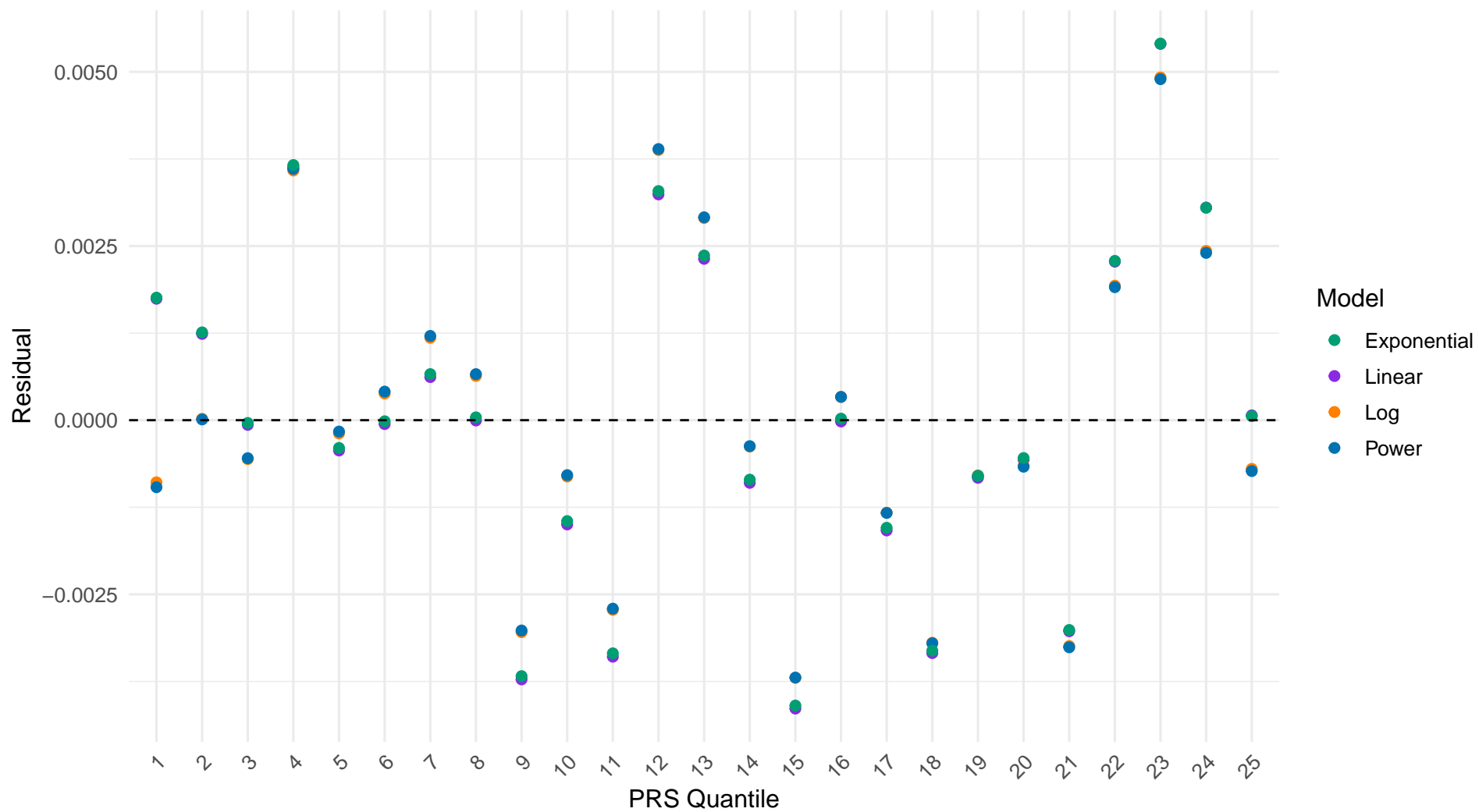Diagnosis: I25

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: I25

Chi2 Test for code: I25

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
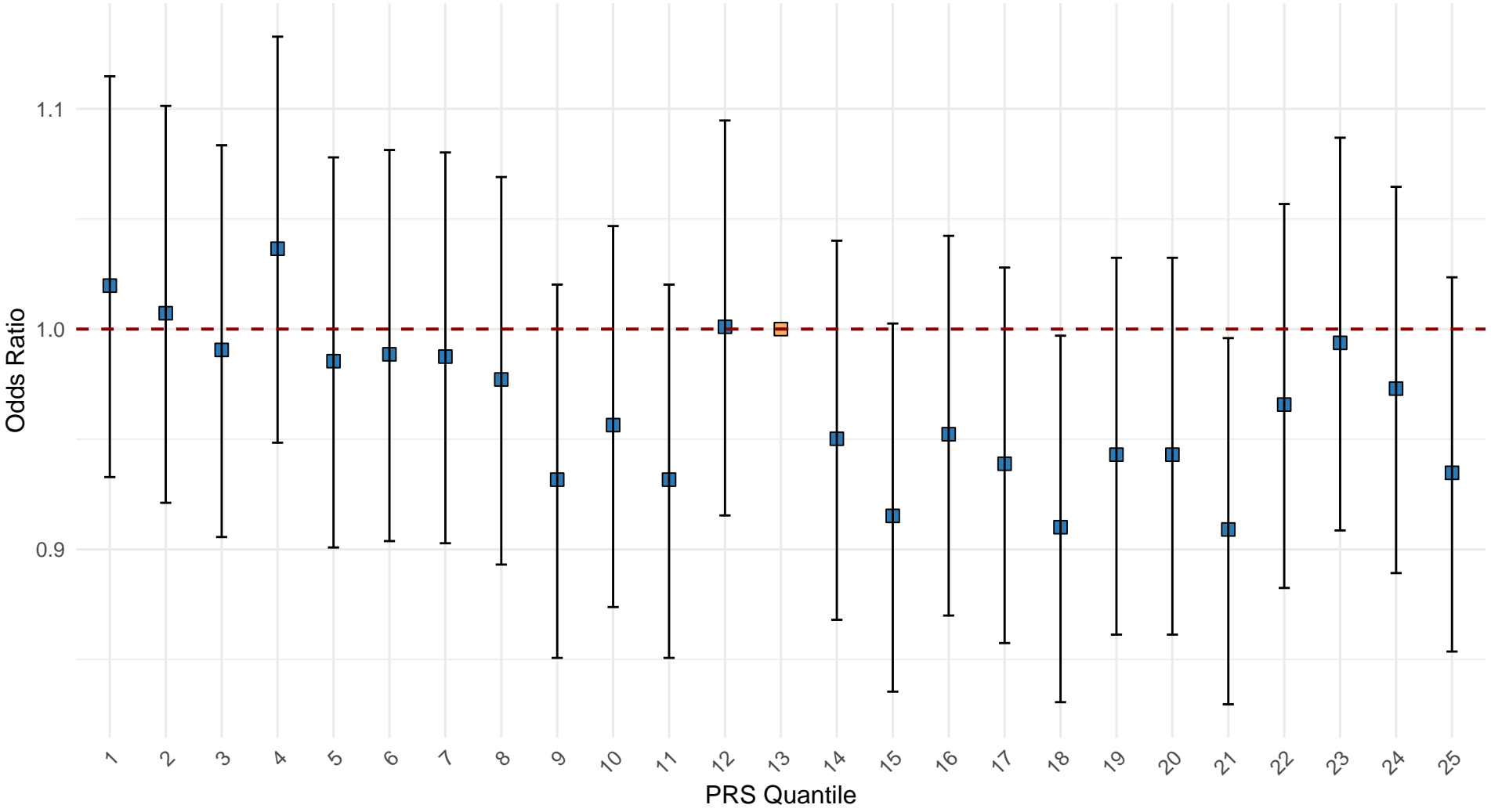Diagnosis: I25

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.02	0.93	1.11
2	1.01	0.92	1.1
3	0.99	0.91	1.08
4	1.04	0.95	1.13
5	0.99	0.9	1.08
6	0.99	0.9	1.08
7	0.99	0.9	1.08
8	0.98	0.89	1.07
9	0.93	0.85	1.02
10	0.96	0.87	1.05
11	0.93	0.85	1.02
12	1	0.92	1.09
13	1	1	1
14	0.95	0.87	1.04
15	0.92	0.84	1
16	0.95	0.87	1.04
17	0.94	0.86	1.03
18	0.91	0.83	1
19	0.94	0.86	1.03
20	0.94	0.86	1.03
21	0.91	0.83	1
22	0.97	0.88	1.06
23	0.99	0.91	1.09
24	0.97	0.89	1.06
25	0.93	0.85	1.02

```
Linear Model Summary for I25

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.0041398 -0.0014968 -0.0000557  0.0017430  0.0054009

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  9.715e-02  1.043e-03  93.112  < 2e-16 ***
PRS         -2.433e-04  7.018e-05  -3.466  0.00209 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002531 on 23 degrees of freedom
Multiple R-squared:  0.3432, Adjusted R-squared:  0.3146
F-statistic: 12.02 on 1 and 23 DF,  p-value: 0.002093


Log Model Summary for I25

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.0036978 -0.0008916 -0.0003792  0.0011823  0.0049198

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0995405  0.0014227  69.968  < 2e-16 ***
log(PRS)    -0.0023938  0.0005783  -4.139 0.000398 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002364 on 23 degrees of freedom
Multiple R-squared:  0.4269, Adjusted R-squared:  0.402
F-statistic: 17.13 on 1 and 23 DF,  p-value: 0.000398


Exponential Model Summary for I25

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.04481 -0.01542 -0.00016  0.01799  0.05737

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -2.3316047  0.0111218 -209.642   <2e-16 ***
PRS         -0.0025775  0.0007481   -3.445   0.0022 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.02697 on 23 degrees of freedom
Multiple R-squared:  0.3404, Adjusted R-squared:  0.3117
F-statistic: 11.87 on 1 and 23 DF,  p-value: 0.002203


Power Model Summary for I25

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.099611   0.001457  68.388  < 2e-16 ***
b -0.025143   0.006007  -4.186 0.000354 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002364 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 6.602e-07
```

Prevalence analysis and model fitting for diagnosis: J43
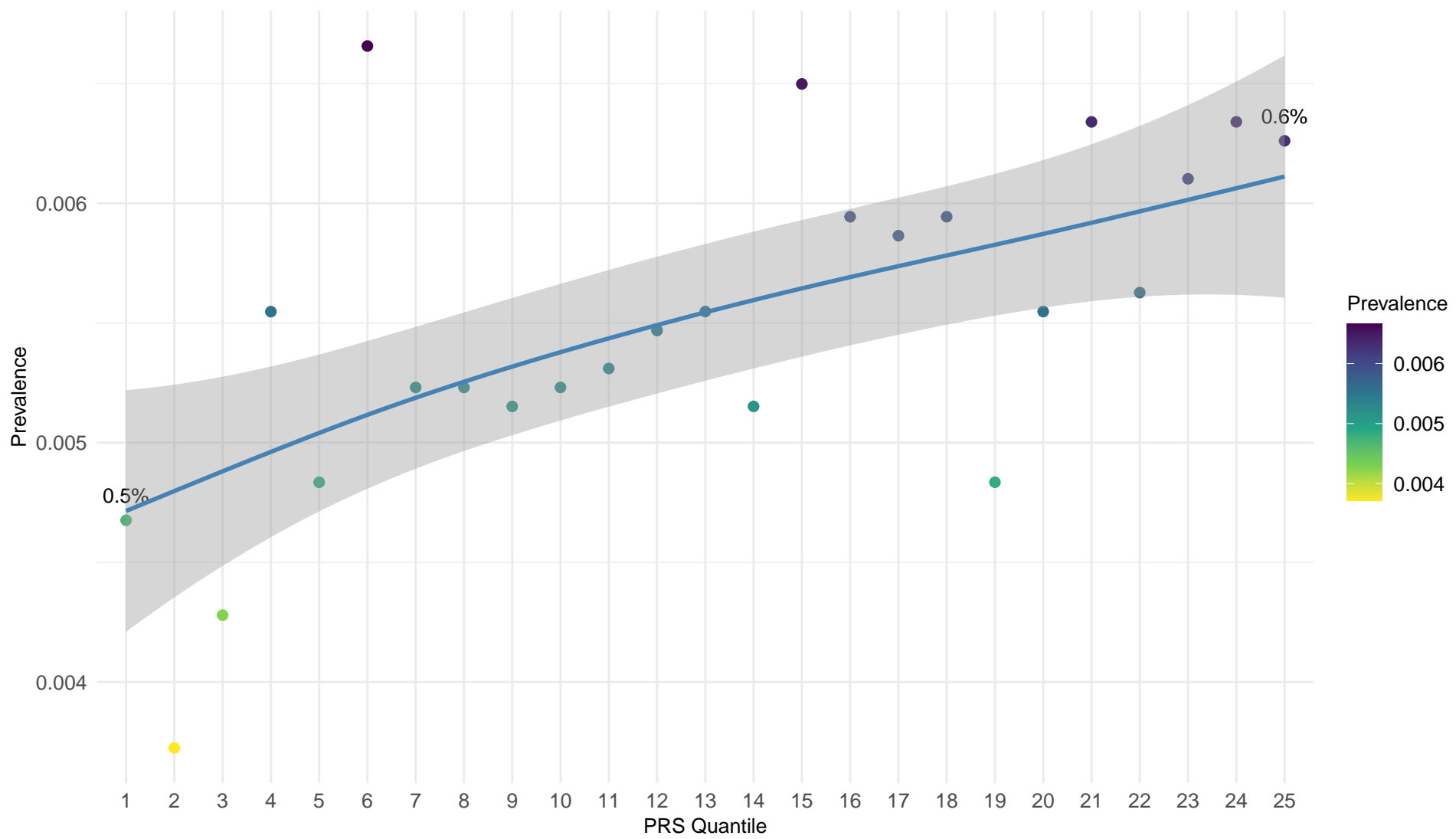
FIGURE 1:Prevalence of J43 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00546
2	0.00437
3	0.00501
4	0.00646
5	0.00564
6	0.00775
7	0.00613
8	0.00613
9	0.00605
10	0.00612
11	0.00622
12	0.00642
13	0.00644
14	0.00604
15	0.00759
16	0.00699
17	0.00685
18	0.00699
19	0.00564
20	0.00647
21	0.00743
22	0.00659
23	0.00717
24	0.00739
25	0.00732

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Power	−294.43821	8.837296e−06	0.4567185
2	Log	−294.34676	8.869681e−06	0.4547276
3	Linear	−292.40680	9.585362e−06	0.4107304
4	Exponential (lm)	−37.73176	9.759676e−06	0.4000143

FIGURE 2: Prevalence by SCZ-PRS Quantile and Model Fit
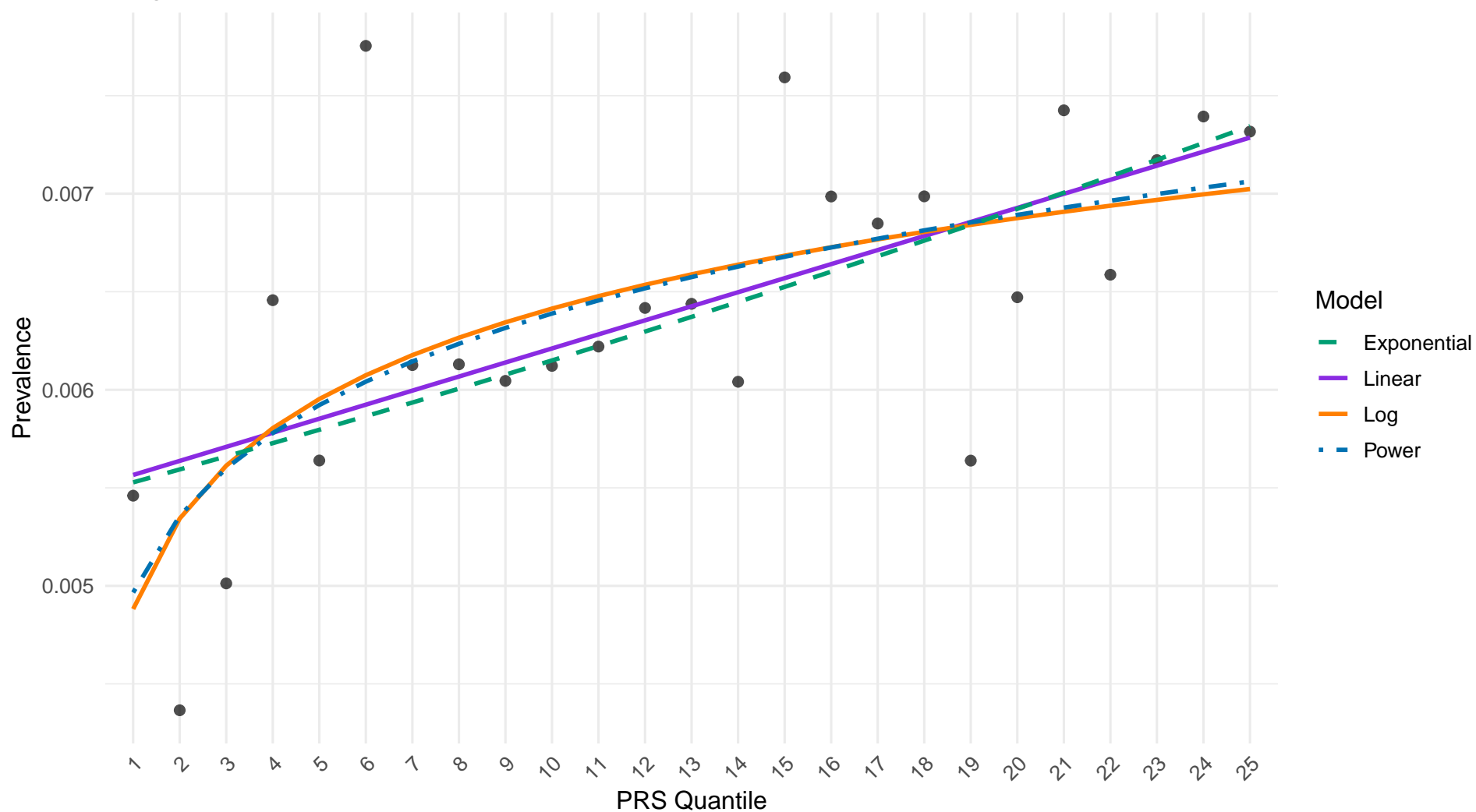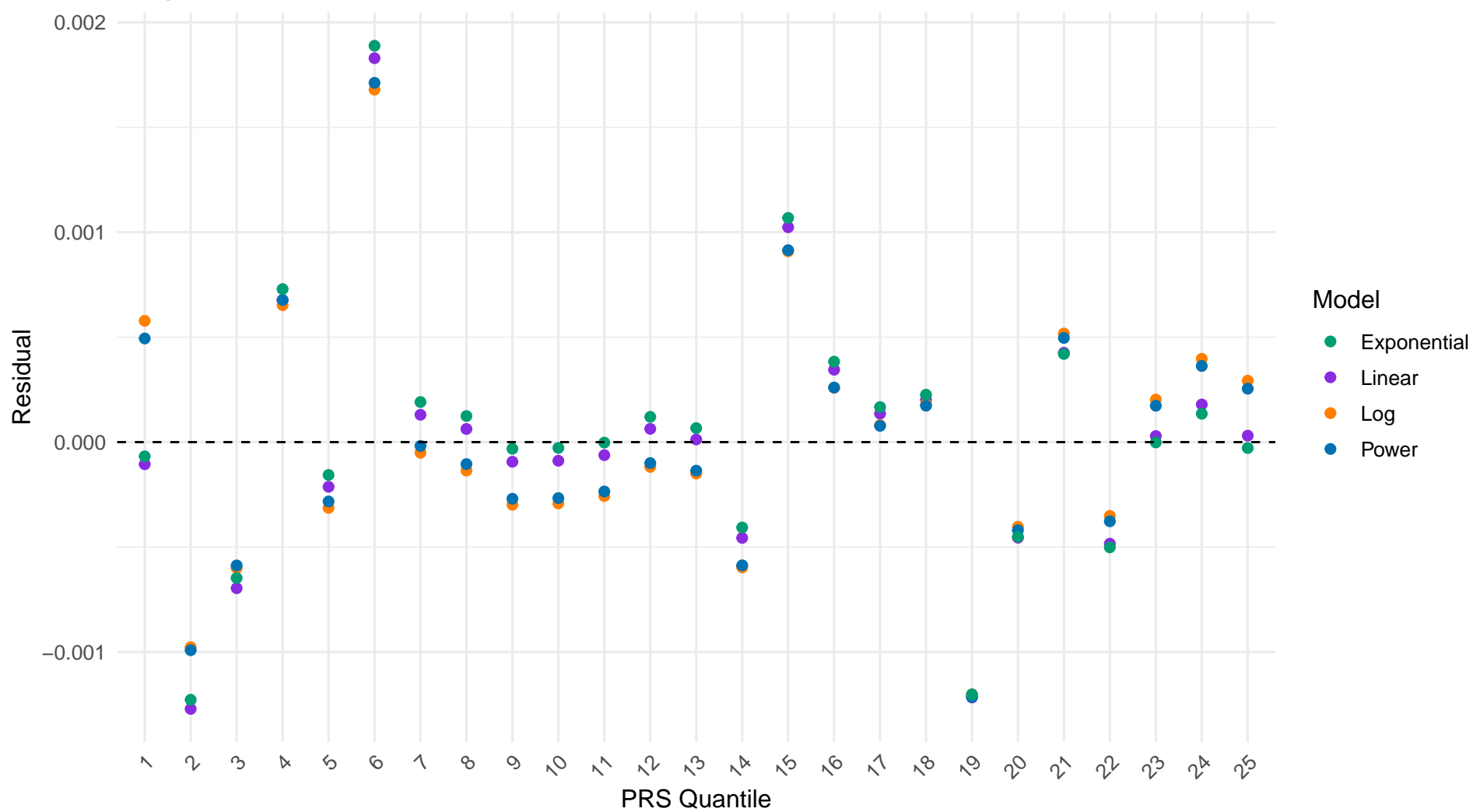Diagnosis: J43

FIGURE 3: Model residuals by SCZ-PRS Quantile
Diagnosis: J43

Chi2 Test for code: J43

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
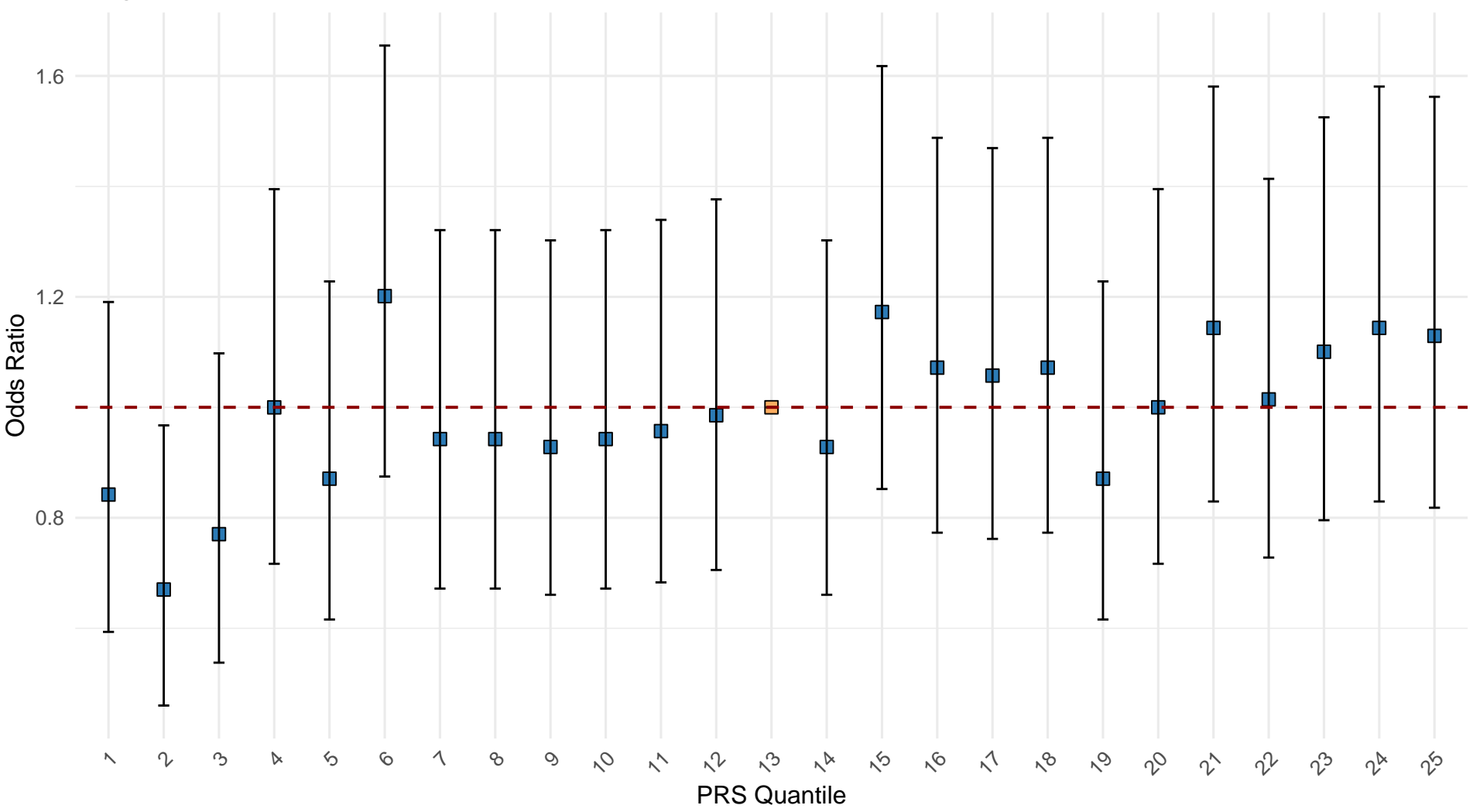Diagnosis: J43

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.84	0.59	1.19
2	0.67	0.46	0.97
3	0.77	0.54	1.1
4	1	0.72	1.39
5	0.87	0.62	1.23
6	1.2	0.87	1.65
7	0.94	0.67	1.32
8	0.94	0.67	1.32
9	0.93	0.66	1.3
10	0.94	0.67	1.32
11	0.96	0.68	1.34
12	0.99	0.71	1.38
13	1	1	1
14	0.93	0.66	1.3
15	1.17	0.85	1.62
16	1.07	0.77	1.49
17	1.06	0.76	1.47
18	1.07	0.77	1.49
19	0.87	0.62	1.23
20	1	0.72	1.4
21	1.14	0.83	1.58
22	1.01	0.73	1.41
23	1.1	0.8	1.53
24	1.14	0.83	1.58
25	1.13	0.82	1.56

```
Linear Model Summary for J43

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-1.272e-03 -2.131e-04  2.869e-05  1.792e-04  1.830e-03

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 5.494e-03  2.662e-04  20.640 2.43e-16 ***
PRS         7.169e-05  1.790e-05   4.004 0.000557 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0006456 on 23 degrees of freedom
Multiple R-squared:  0.4107,	Adjusted R-squared:  0.3851
F-statistic: 16.03 on 1 and 23 DF,  p-value: 0.0005571


Log Model Summary for J43

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0012026 -0.0003137 -0.0001181  0.0002929  0.0016798

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0048820  0.0003738   13.06    4e-12 ***
log(PRS)    0.0006654  0.0001519    4.38 0.000219 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.000621 on 23 degrees of freedom
Multiple R-squared:  0.4547,	Adjusted R-squared:  0.431
F-statistic: 19.18 on 1 and 23 DF,  p-value: 0.0002186


Exponential Model Summary for J43

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.247894 -0.027422 -0.000234  0.031657  0.279200

Coefficients:
             Estimate Std. Error  t value Pr(>|t|)
(Intercept) -5.209792   0.043375 -120.109  < 2e-16 ***
PRS          0.011843   0.002918    4.059 0.000486 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.1052 on 23 degrees of freedom
Multiple R-squared:  0.4173,	Adjusted R-squared:  0.392
F-statistic: 16.47 on 1 and 23 DF,  p-value: 0.0004861


Power Model Summary for J43

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0049661  0.0003335  14.889 2.67e-13 ***
b 0.1094018  0.0262501   4.168 0.000371 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0006199 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.442e-08
```

Prevalence analysis and model fitting for diagnosis: J44
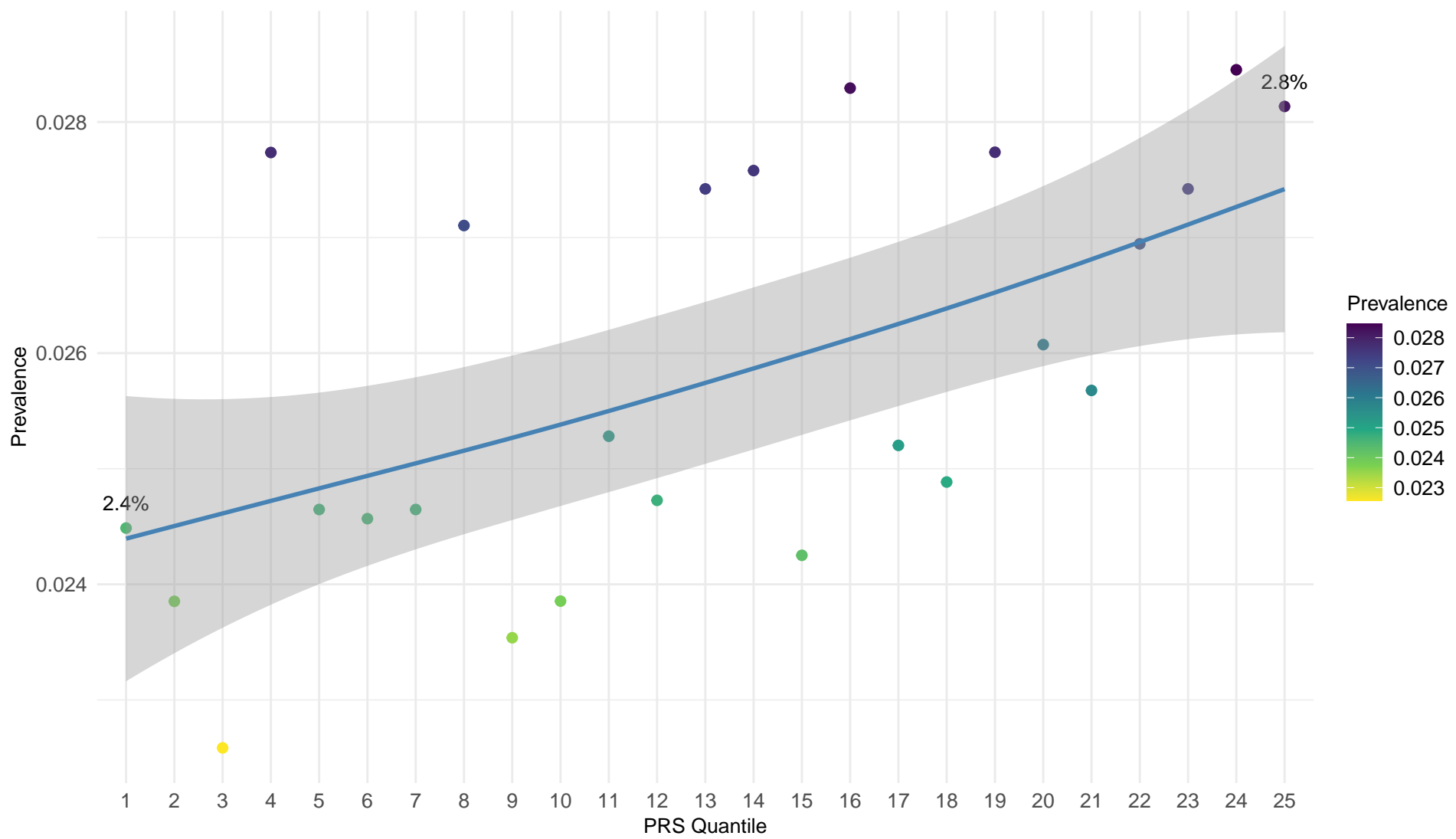

FIGURE 1:Prevalence of J44 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.0286
2	0.02796
3	0.02646
4	0.03228
5	0.02875
6	0.02862
7	0.02887
8	0.03176
9	0.02762
10	0.02792
11	0.02962
12	0.02902
13	0.03182
14	0.03234
15	0.02834
16	0.03325
17	0.02943
18	0.02925
19	0.03235
20	0.03042
21	0.03007
22	0.03154
23	0.03223
24	0.03318
25	0.03288

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−246.19309	6.087276e−05	0.3695769
2	Power	−243.73756	6.715525e−05	0.3045130
3	Log	−243.53489	6.770188e−05	0.2988519
4	Exponential (lm)	−71.26773	6.074474e−05	0.3709028

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
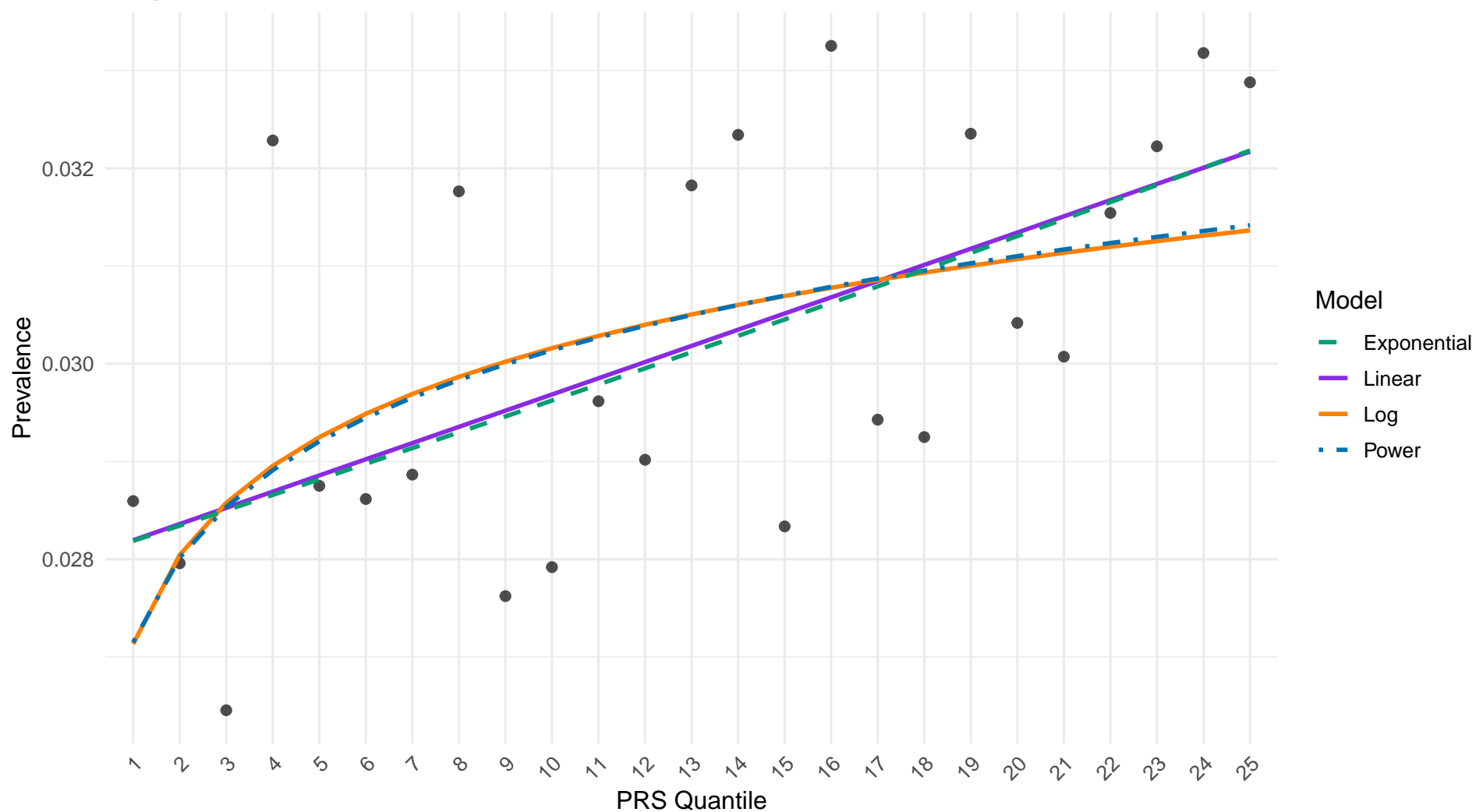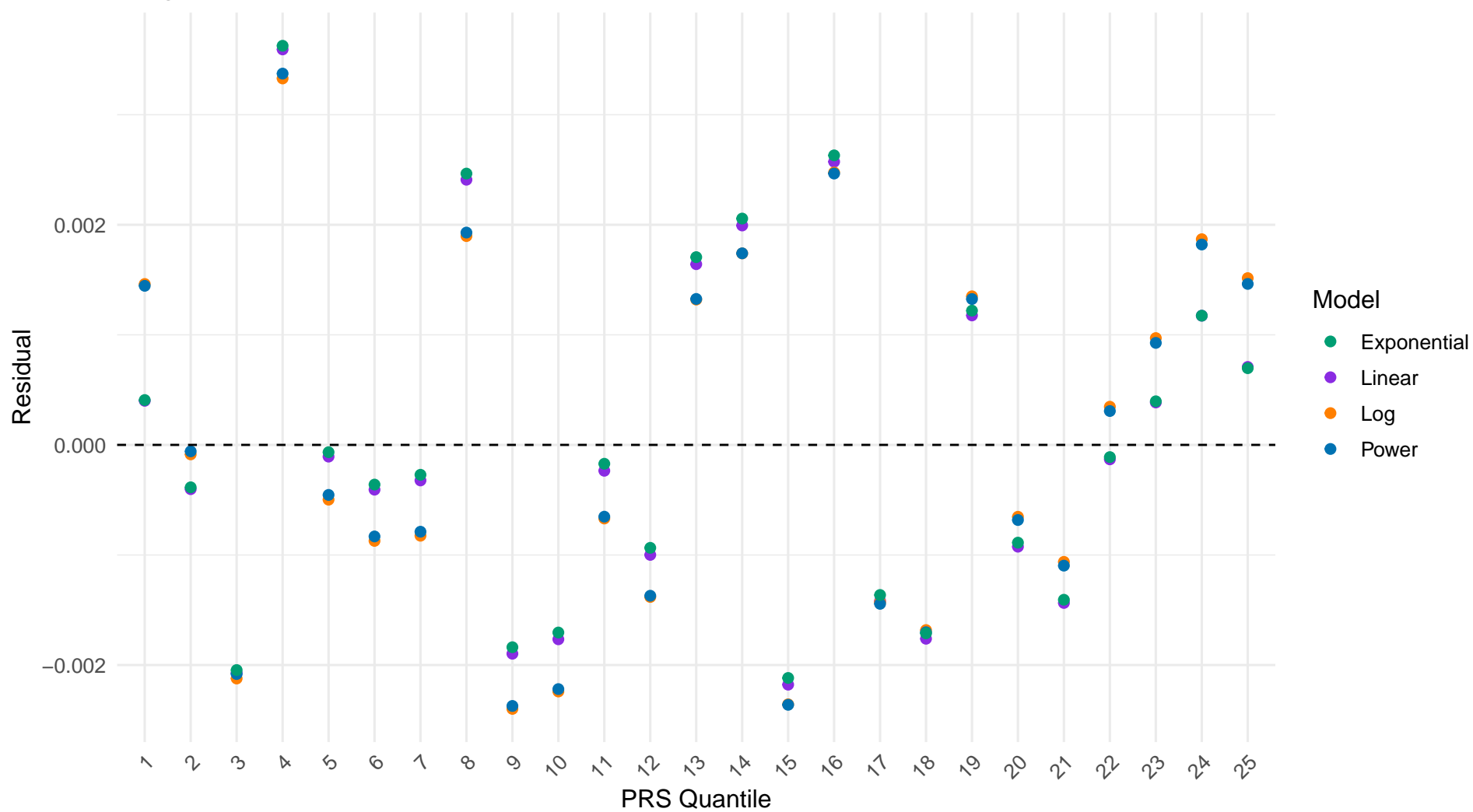Diagnosis: J44

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: J44

Chi2 Test for code: J44

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
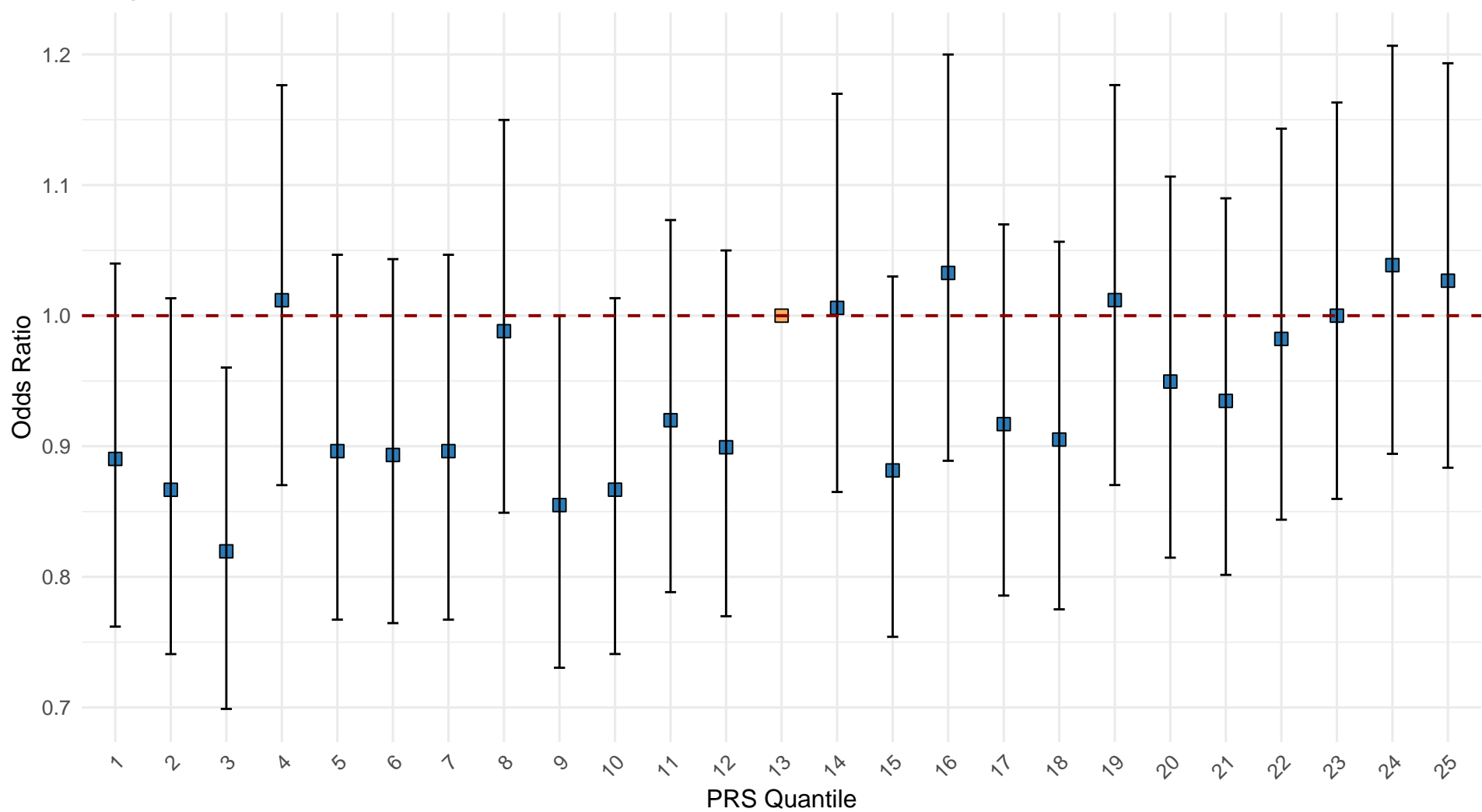Diagnosis: J44

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.89	0.76	1.04
2	0.87	0.74	1.01
3	0.82	0.7	0.96
4	1.01	0.87	1.18
5	0.9	0.77	1.05
6	0.89	0.76	1.04
7	0.9	0.77	1.05
8	0.99	0.85	1.15
9	0.85	0.73	1
10	0.87	0.74	1.01
11	0.92	0.79	1.07
12	0.9	0.77	1.05
13	1	1	1
14	1.01	0.87	1.17
15	0.88	0.75	1.03
16	1.03	0.89	1.2
17	0.92	0.79	1.07
18	0.91	0.78	1.06
19	1.01	0.87	1.18
20	0.95	0.81	1.11
21	0.93	0.8	1.09
22	0.98	0.84	1.14
23	1	0.86	1.16
24	1.04	0.89	1.21
25	1.03	0.88	1.19

```
Linear Model Summary for J44

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0021782 -0.0014175 -0.0002349  0.0011740  0.0035931

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 2.803e-02  6.708e-04  41.786  < 2e-16 ***
PRS         1.657e-04  4.512e-05   3.672  0.00127 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001627 on 23 degrees of freedom
Multiple R-squared:  0.3696, Adjusted R-squared:  0.3422
F-statistic: 13.48 on 1 and 23 DF,  p-value: 0.001266


Log Model Summary for J44

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0023985 -0.0013815 -0.0004977  0.0014619  0.0033294

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0271334  0.0010326  26.276  < 2e-16 ***
log(PRS)    0.0013143  0.0004198   3.131  0.00469 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001716 on 23 degrees of freedom
Multiple R-squared:  0.2989, Adjusted R-squared:  0.2684
F-statistic: 9.803 on 1 and 23 DF,  p-value: 0.004689


Exponential Model Summary for J44

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.074481  -0.045291  -0.005773   0.036029   0.119148

Coefficients:
             Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.574395   0.022180 -161.157  < 2e-16 ***
PRS          0.005522   0.001492    3.701  0.00118 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.05379 on 23 degrees of freedom
Multiple R-squared:  0.3733, Adjusted R-squared:  0.3461
F-statistic:  13.7 on 1 and 23 DF,  p-value: 0.001177


Power Model Summary for J44

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0271498  0.0009839  27.595  < 2e-16 ***
b 0.0453488  0.0144762   3.133  0.00467 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001709 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 9.841e-06
```

Prevalence analysis and model fitting for diagnosis: K13
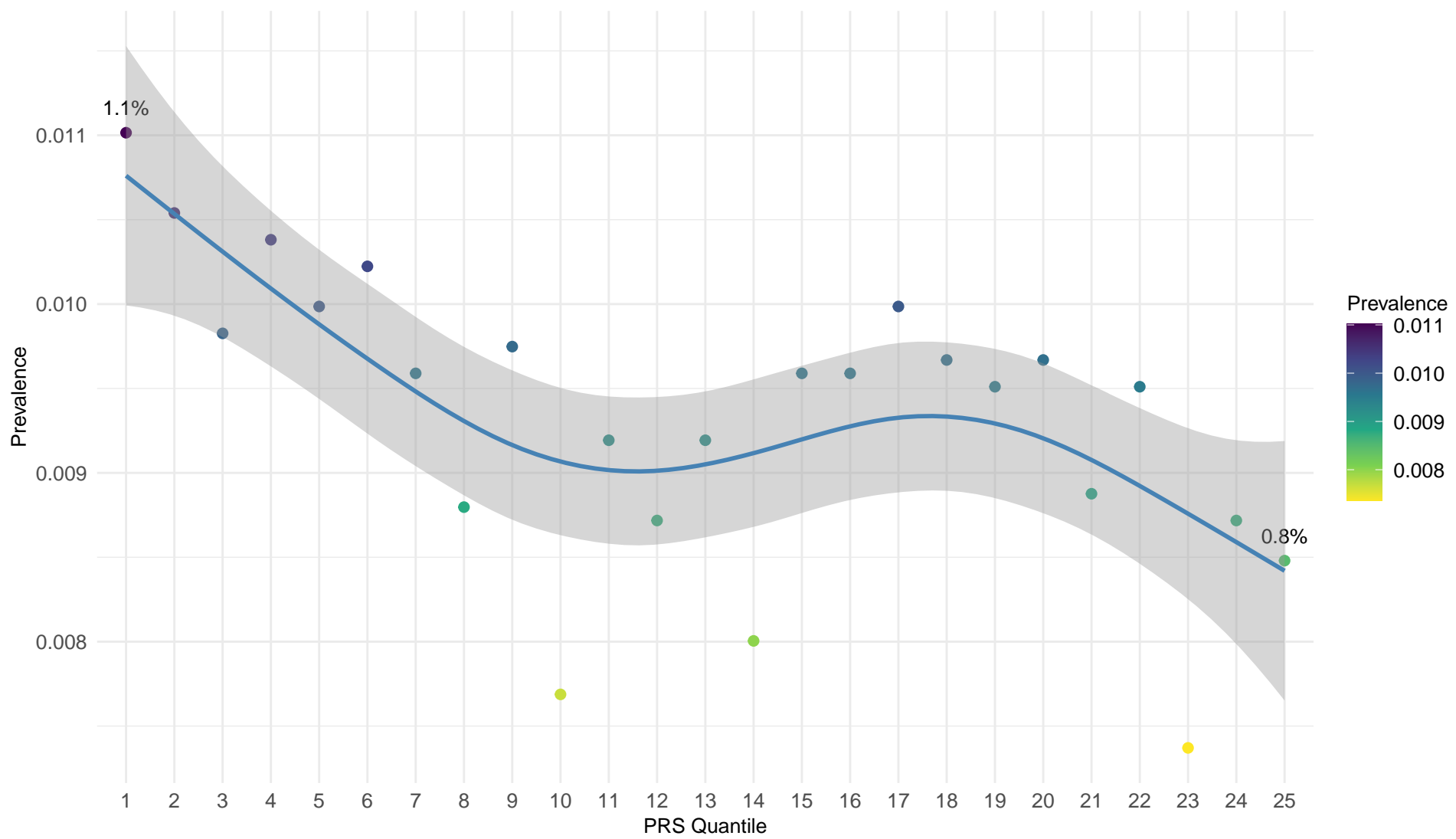

FIGURE 1:Prevalence of K13 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.01286
2	0.01235
3	0.01151
4	0.01208
5	0.01165
6	0.01191
7	0.01123
8	0.01031
9	0.01144
10	0.009
11	0.01077
12	0.01023
13	0.01067
14	0.00939
15	0.0112
16	0.01127
17	0.01166
18	0.01136
19	0.01109
20	0.01128
21	0.0104
22	0.01113
23	0.00866
24	0.01017
25	0.00991

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Power	−281.65969	1.473347e−05	0.3985034
2	Log	−281.53791	1.480541e−05	0.3955664
3	Linear	−278.10085	1.698745e−05	0.3064841
4	Exponential (lm)	−49.97279	1.689552e−05	0.3102373

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
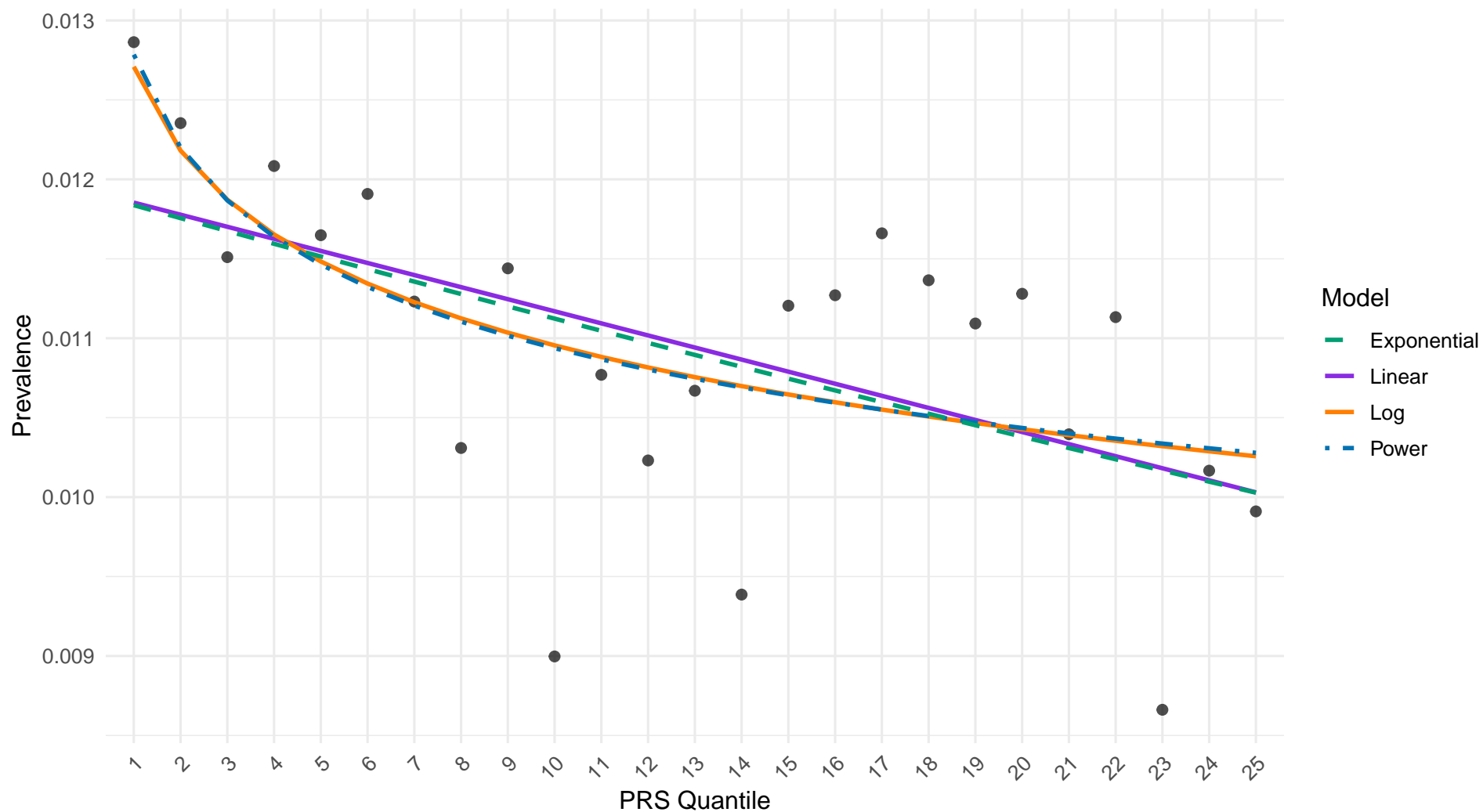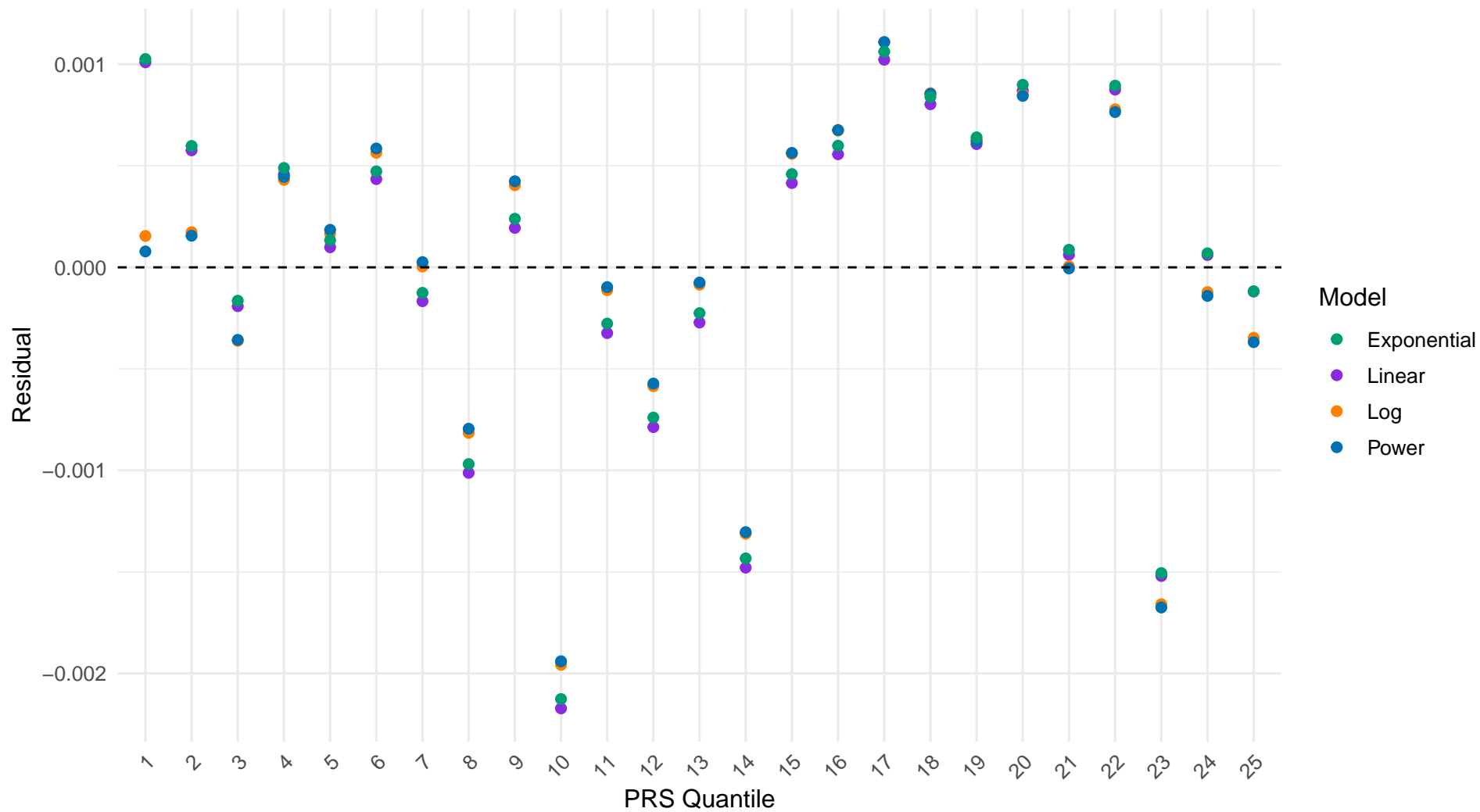Diagnosis: K13

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: K13

Chi2 Test for code: K13

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
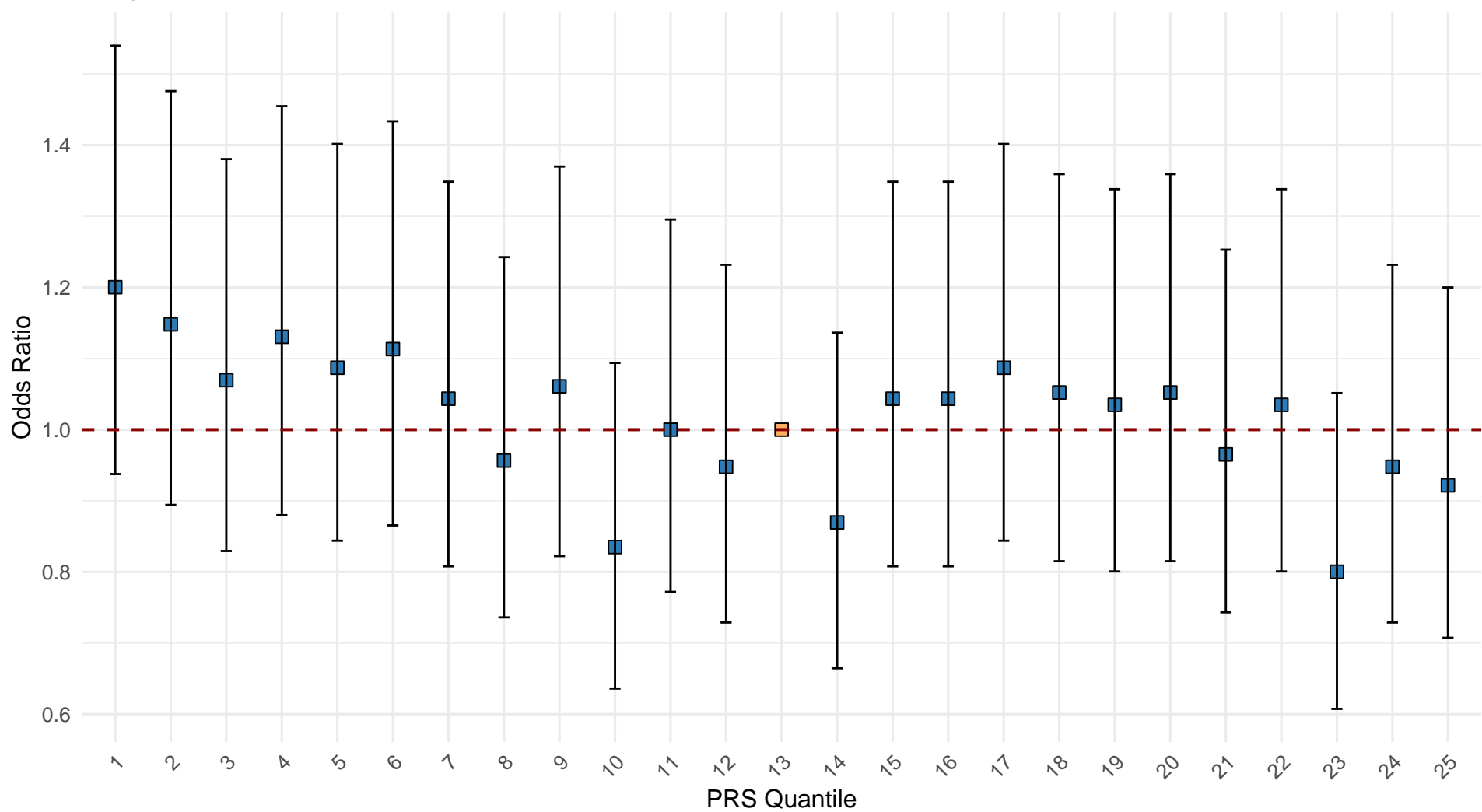Diagnosis: K13

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.2	0.94	1.54
2	1.15	0.89	1.48
3	1.07	0.83	1.38
4	1.13	0.88	1.45
5	1.09	0.84	1.4
6	1.11	0.87	1.43
7	1.04	0.81	1.35
8	0.96	0.74	1.24
9	1.06	0.82	1.37
10	0.83	0.64	1.09
11	1	0.77	1.3
12	0.95	0.73	1.23
13	1	1	1
14	0.87	0.66	1.14
15	1.04	0.81	1.35
16	1.04	0.81	1.35
17	1.09	0.84	1.4
18	1.05	0.82	1.36
19	1.03	0.8	1.34
20	1.05	0.82	1.36
21	0.97	0.74	1.25
22	1.03	0.8	1.34
23	0.8	0.61	1.05
24	0.95	0.73	1.23
25	0.92	0.71	1.2

```
Linear Model Summary for K13

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-2.172e-03 -2.720e-04  9.881e-05  5.762e-04  1.023e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.193e-02  3.543e-04  33.666  < 2e-16 ***
PRS         -7.599e-05  2.384e-05  -3.188  0.00409 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008594 on 23 degrees of freedom
Multiple R-squared:  0.3065, Adjusted R-squared:  0.2763
F-statistic: 10.16 on 1 and 23 DF,  p-value: 0.004093


Log Model Summary for K13

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0019577 -0.0003469  0.0001546  0.0005640  0.0011094

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0127086  0.0004829   26.32  < 2e-16 ***
log(PRS)    -0.0007616  0.0001963   -3.88 0.000758 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008023 on 23 degrees of freedom
Multiple R-squared:  0.3956, Adjusted R-squared:  0.3693
F-statistic: 15.05 on 1 and 23 DF,  p-value: 0.000758


Exponential Model Summary for K13

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.21212 -0.02091  0.01156  0.05462  0.09552

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -4.429590   0.033956 -130.450  < 2e-16 ***
PRS         -0.006912   0.002284   -3.026  0.00601 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.08236 on 23 degrees of freedom
Multiple R-squared:  0.2848, Adjusted R-squared:  0.2537
F-statistic: 9.158 on 1 and 23 DF,  p-value: 0.006008


Power Model Summary for K13

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.012785   0.000512  24.972  < 2e-16 ***
b -0.067788   0.016769  -4.042 0.000506 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008004 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.209e-06
```

Prevalence analysis and model fitting for diagnosis: K58
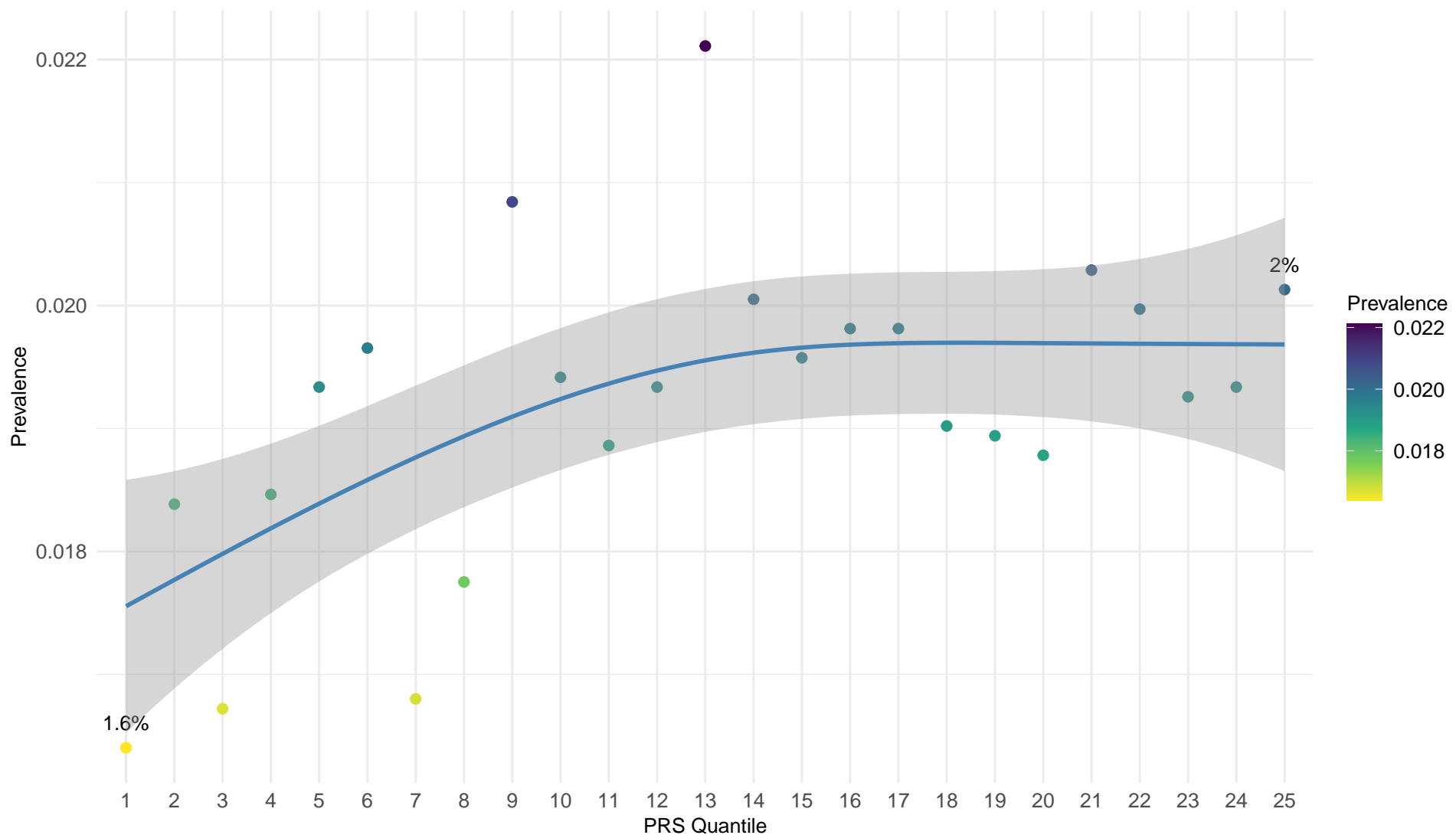

FIGURE 1:Prevalence of K58 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.01916
2	0.02155
3	0.01959
4	0.02149
5	0.02256
6	0.02289
7	0.01968
8	0.0208
9	0.02446
10	0.02273
11	0.0221
12	0.02269
13	0.02566
14	0.02351
15	0.02287
16	0.02329
17	0.02314
18	0.02236
19	0.02209
20	0.02191
21	0.02376
22	0.02338
23	0.02263
24	0.02255
25	0.02353

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−262.36393	3.187915e−05	0.3946169
2	Power	−262.16805	3.212991e−05	0.3898549
3	Linear	−257.50927	3.871157e−05	0.2648697
4	Exponential (lm)	−67.07748	3.911486e−05	0.2572111

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
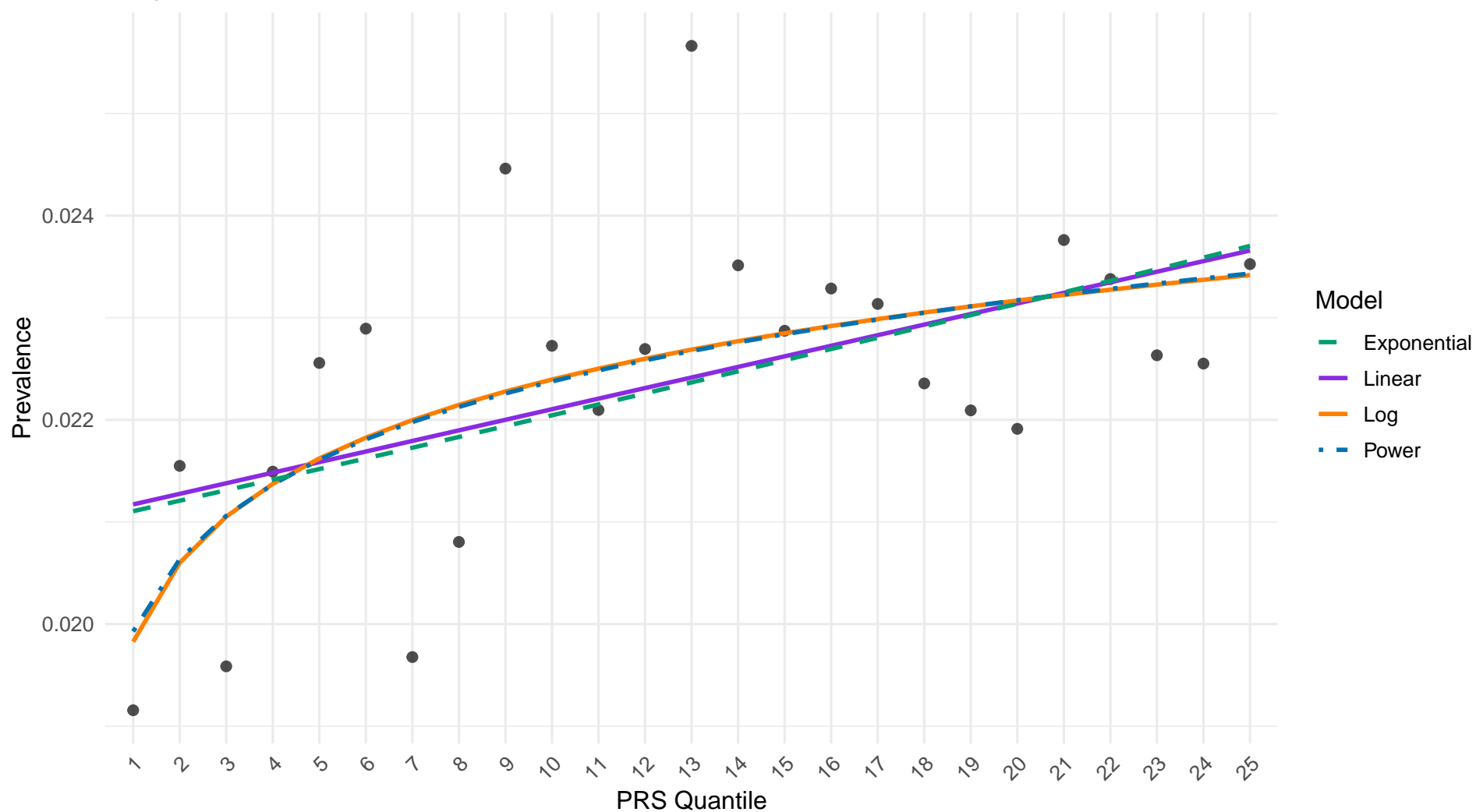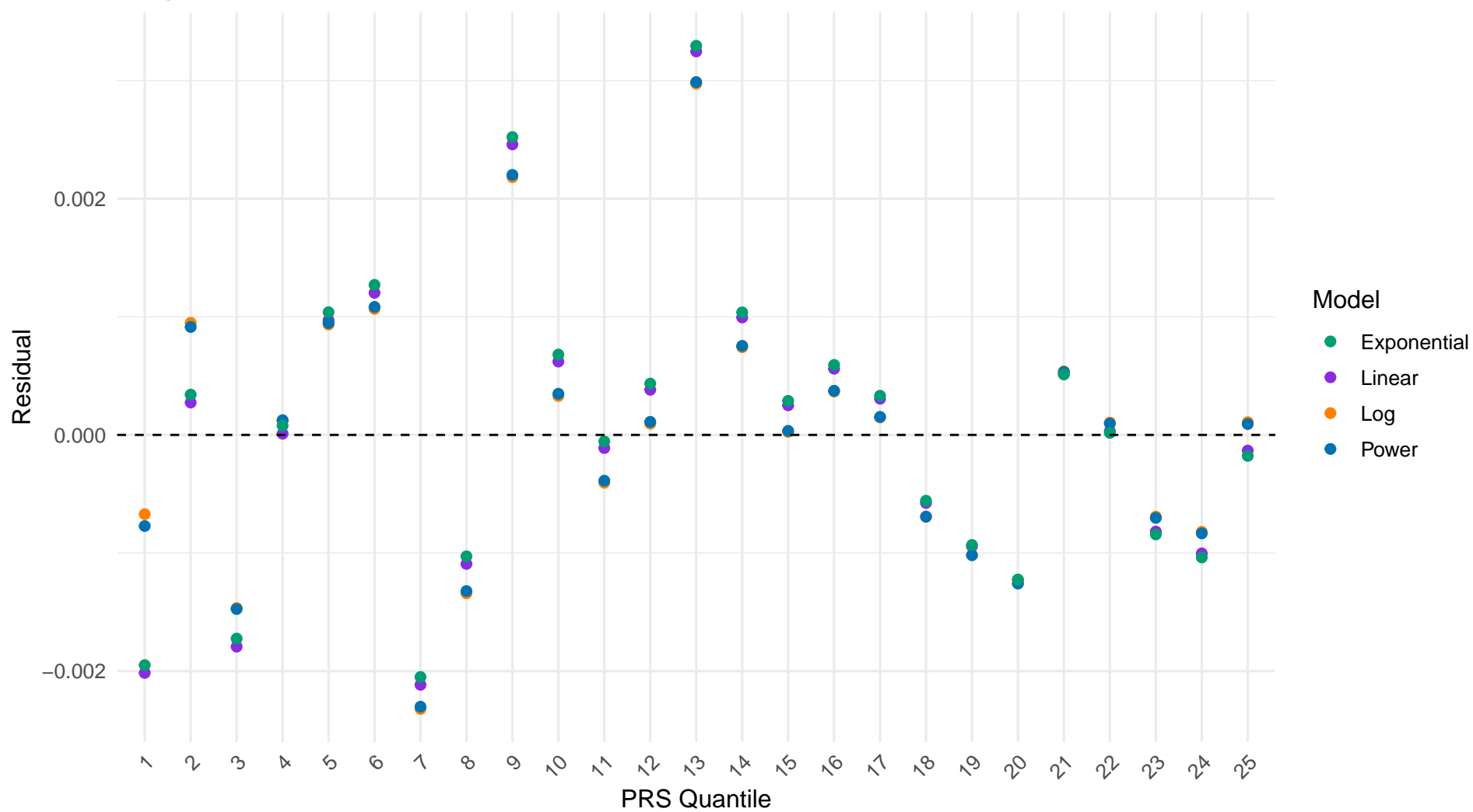Diagnosis: K58

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: K58

Chi2 Test for code: K58

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
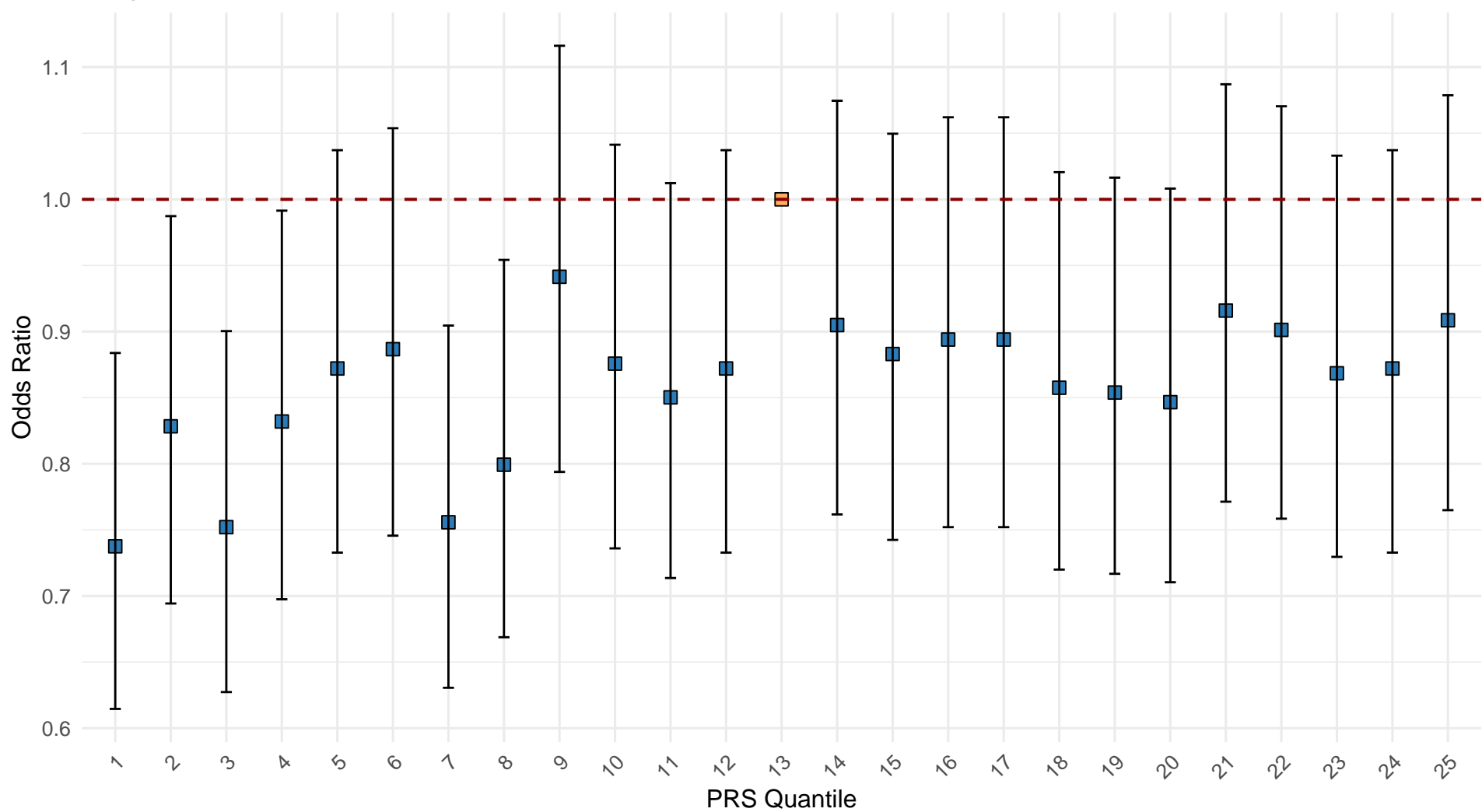Diagnosis: K58

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.74	0.61	0.88
2	0.83	0.69	0.99
3	0.75	0.63	0.9
4	0.83	0.7	0.99
5	0.87	0.73	1.04
6	0.89	0.75	1.05
7	0.76	0.63	0.9
8	0.8	0.67	0.95
9	0.94	0.79	1.12
10	0.88	0.74	1.04
11	0.85	0.71	1.01
12	0.87	0.73	1.04
13	1	1	1
14	0.9	0.76	1.07
15	0.88	0.74	1.05
16	0.89	0.75	1.06
17	0.89	0.75	1.06
18	0.86	0.72	1.02
19	0.85	0.72	1.02
20	0.85	0.71	1.01
21	0.92	0.77	1.09
22	0.9	0.76	1.07
23	0.87	0.73	1.03
24	0.87	0.73	1.04
25	0.91	0.76	1.08

```
Linear Model Summary for K58

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median         3Q         Max
-0.0021163 -0.0009434  0.0000318  0.0005606  0.0032475

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 2.107e-02  5.349e-04  39.386  < 2e-16 ***
PRS         1.036e-04  3.598e-05   2.879  0.00848 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001297 on 23 degrees of freedom
Multiple R-squared:  0.2649, Adjusted R-squared:  0.2329
F-statistic: 8.287 on 1 and 23 DF,  p-value: 0.008481


Log Model Summary for K58

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q      Median         3Q         Max
-0.0023204 -0.0006940  0.0001042  0.0005382  0.0029744

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0198270  0.0007086  27.981  < 2e-16 ***
log(PRS)    0.0011154  0.0002881   3.872 0.000773 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001177 on 23 degrees of freedom
Multiple R-squared:  0.3946, Adjusted R-squared:  0.3683
F-statistic: 14.99 on 1 and 23 DF,  p-value: 0.0007726


Exponential Model Summary for K58

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median         3Q         Max
-0.099103 -0.041332  0.003657  0.025782  0.137453

Coefficients:
             Estimate Std. Error   t value Pr(>|t|)
(Intercept) -3.863053   0.024119 -160.170  < 2e-16 ***
PRS          0.004836   0.001622    2.981  0.00669 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0585 on 23 degrees of freedom
Multiple R-squared:  0.2786, Adjusted R-squared:  0.2473
F-statistic: 8.885 on 1 and 23 DF,  p-value: 0.006686


Power Model Summary for K58

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0199275  0.0006771  29.431  < 2e-16 ***
b 0.0503397  0.0135486   3.715  0.00114 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001182 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.197e-06
```

Prevalence analysis and model fitting for diagnosis: K59
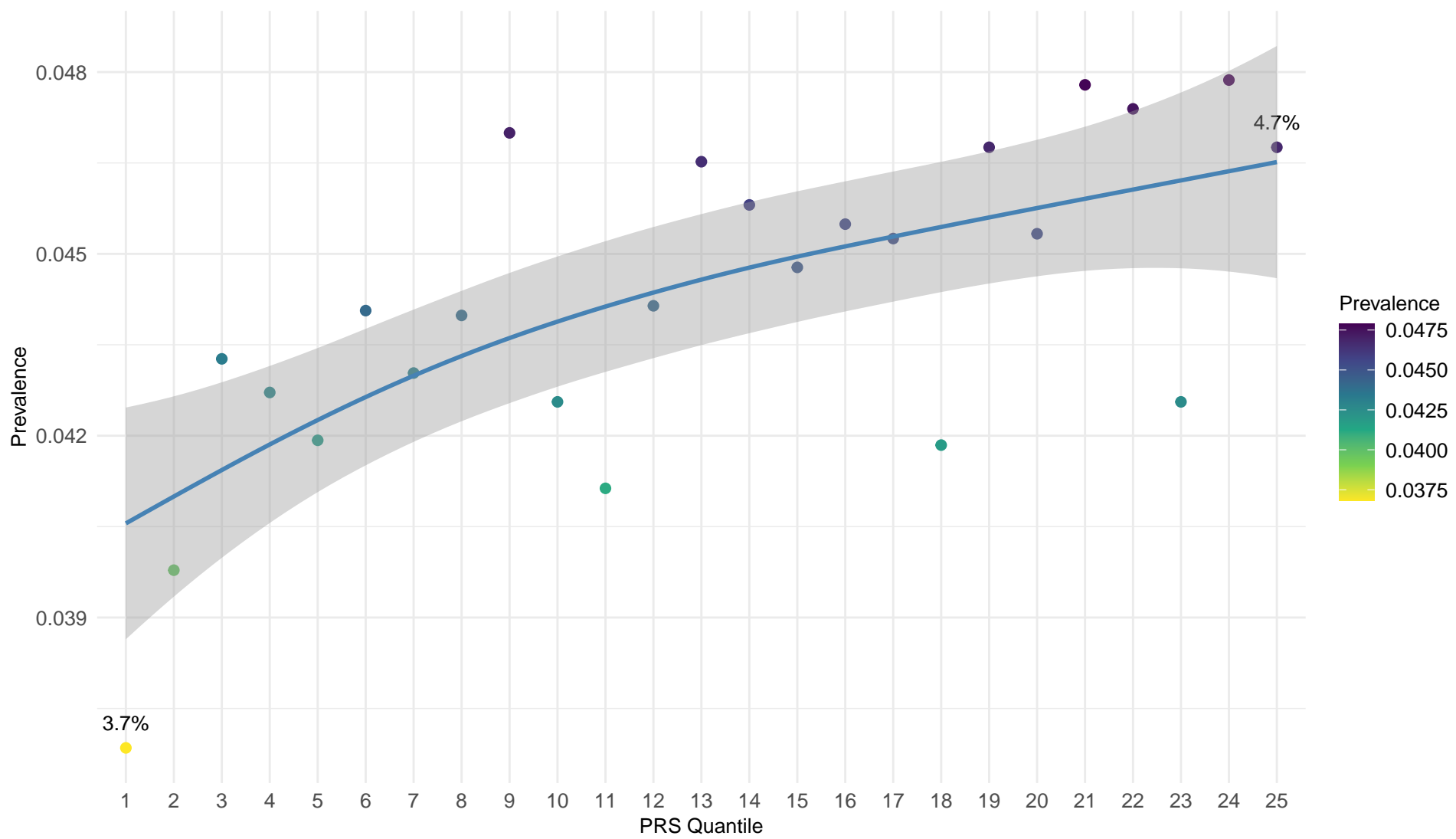

FIGURE 1:Prevalence of K59 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.04303
2	0.04663
3	0.05068
4	0.04972
5	0.0489
6	0.05132
7	0.0504
8	0.05155
9	0.05515
10	0.04981
11	0.04818
12	0.0518
13	0.05399
14	0.05372
15	0.05232
16	0.05346
17	0.05284
18	0.04918
19	0.05454
20	0.05288
21	0.05597
22	0.05548
23	0.05001
24	0.05582
25	0.05464

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−235.16904	9.460855e−05	0.5961390
2	Power	−234.83997	9.586209e−05	0.5907879
3	Linear	−228.33638	1.243443e−04	0.4692043
4	Exponential (lm)	−78.51021	1.259300e−04	0.4624352

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
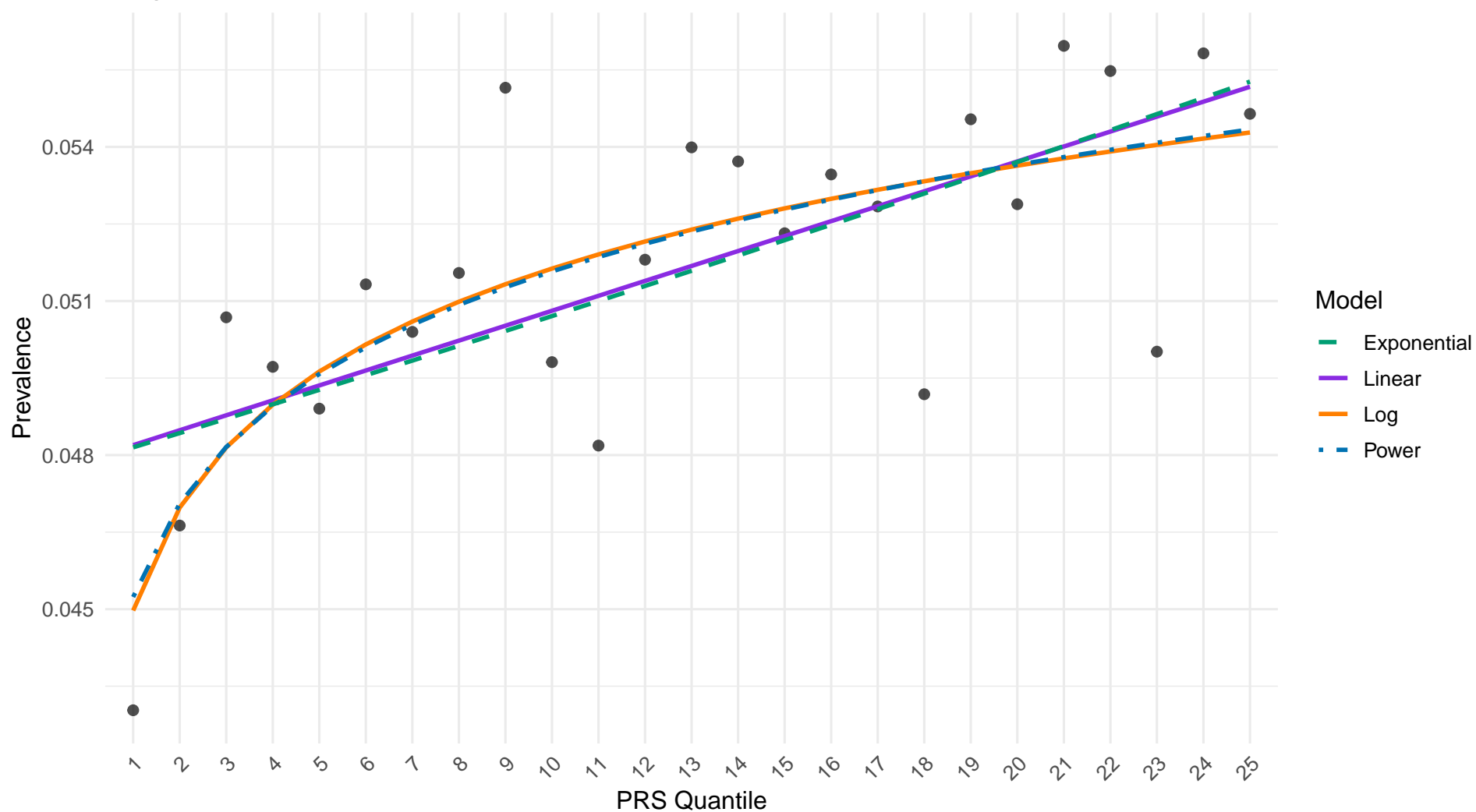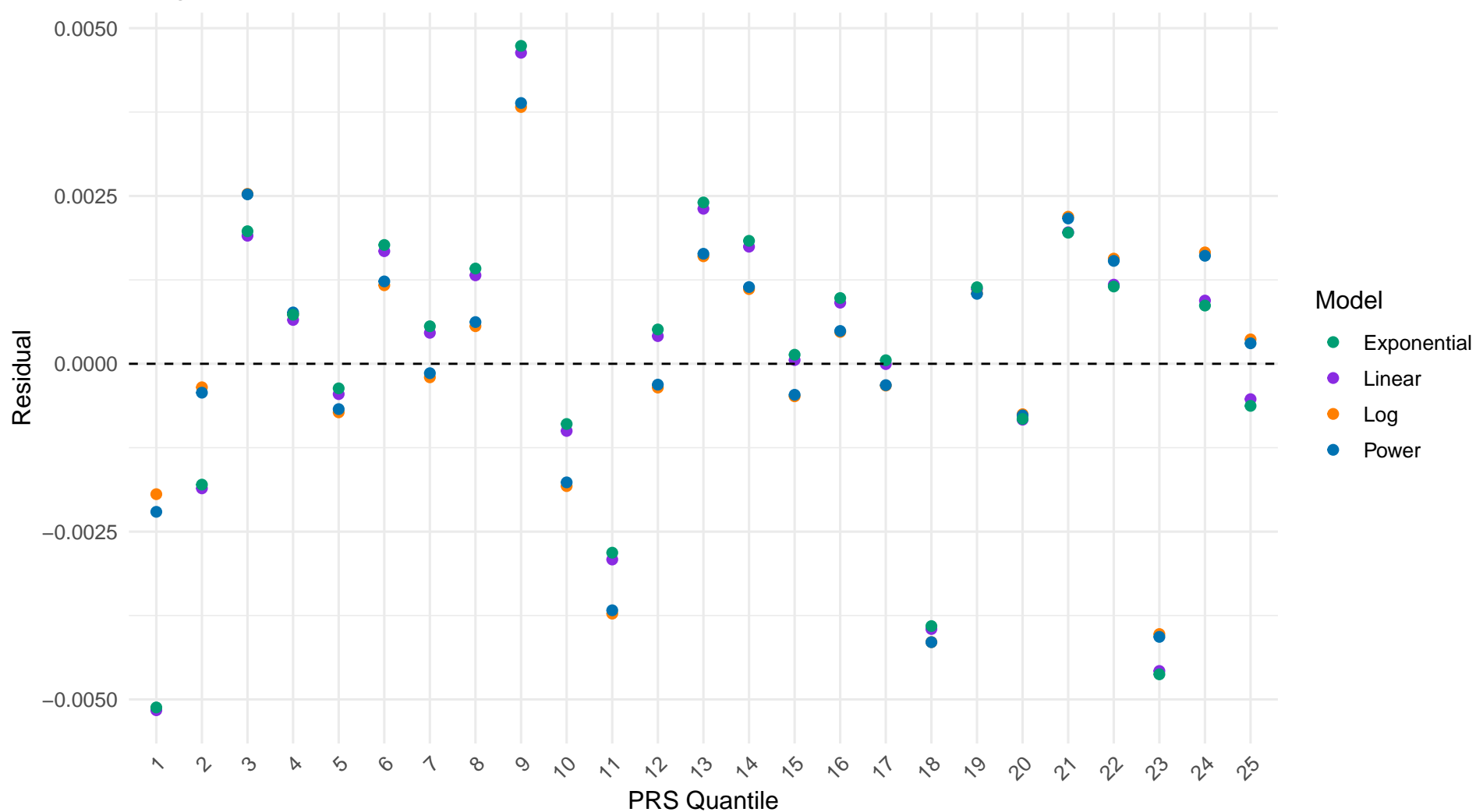Diagnosis: K59

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: K59

```
Chi2 Test for code: K59


 TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):
```

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

```
OR (Q1 vs Others): 1.009  [95% CI: 0.995 - 1.024]


Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data:  matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949
```

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
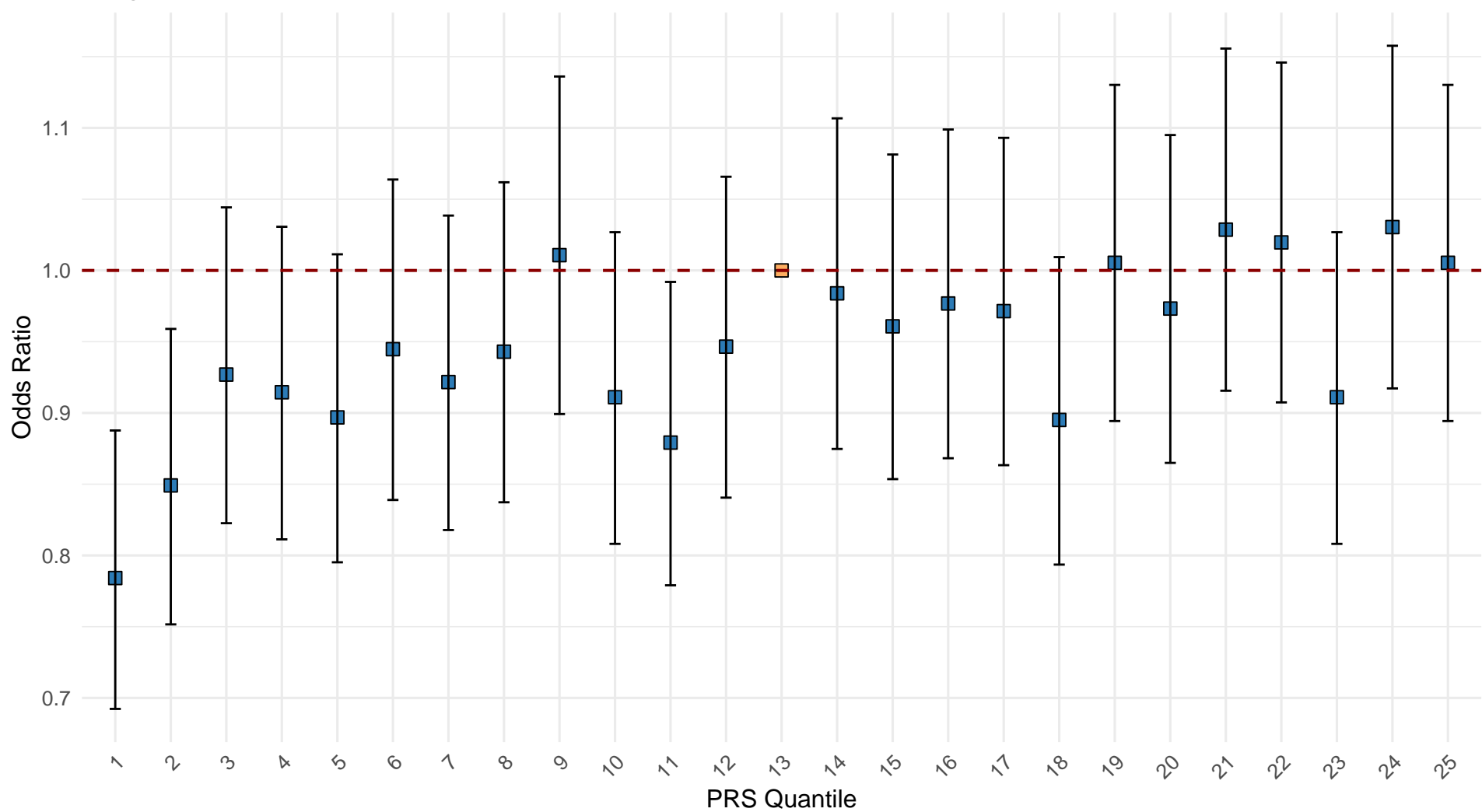Diagnosis: K59

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.78	0.69	0.89
2	0.85	0.75	0.96
3	0.93	0.82	1.04
4	0.91	0.81	1.03
5	0.9	0.8	1.01
6	0.94	0.84	1.06
7	0.92	0.82	1.04
8	0.94	0.84	1.06
9	1.01	0.9	1.14
10	0.91	0.81	1.03
11	0.88	0.78	0.99
12	0.95	0.84	1.07
13	1	1	1
14	0.98	0.87	1.11
15	0.96	0.85	1.08
16	0.98	0.87	1.1
17	0.97	0.86	1.09
18	0.9	0.79	1.01
19	1.01	0.89	1.13
20	0.97	0.86	1.1
21	1.03	0.92	1.16
22	1.02	0.91	1.15
23	0.91	0.81	1.03
24	1.03	0.92	1.16
25	1.01	0.89	1.13

```
Linear Model Summary for K59

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median        3Q        Max
-0.0051614 -0.0008331  0.0004614  0.0013179  0.0046333

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 4.790e-02  9.587e-04  49.967  < 2e-16 ***
PRS         2.908e-04  6.449e-05   4.509 0.000158 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002325 on 23 degrees of freedom
Multiple R-squared:  0.4692, Adjusted R-squared:  0.4461
F-statistic: 20.33 on 1 and 23 DF,  p-value: 0.0001583


Log Model Summary for K59

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q      Median        3Q        Max
-0.0041462 -0.0007229  0.0003639  0.0011701  0.0038256

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0449738  0.0012207  36.843  < 2e-16 ***
log(PRS)    0.0028914  0.0004962   5.827 6.16e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002028 on 23 degrees of freedom
Multiple R-squared:  0.5961, Adjusted R-squared:  0.5786
F-statistic: 33.95 on 1 and 23 DF,  p-value: 6.155e-06


Exponential Model Summary for K59

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q    Median       3Q       Max
-0.11240 -0.01541  0.01116  0.02792  0.08979

Coefficients:
              Estimate Std. Error   t value Pr(>|t|)
(Intercept) -3.039165   0.019189 -158.383  < 2e-16 ***
PRS          0.005747   0.001291    4.452 0.000182 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.04654 on 23 degrees of freedom
Multiple R-squared:  0.4629, Adjusted R-squared:  0.4395
F-statistic: 19.82 on 1 and 23 DF,  p-value: 0.0001824


Power Model Summary for K59

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.045237   0.001162  38.941  < 2e-16 ***
b 0.056958   0.010215   5.576 1.13e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002042 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.947e-06
```

Prevalence analysis and model fitting for diagnosis: K62
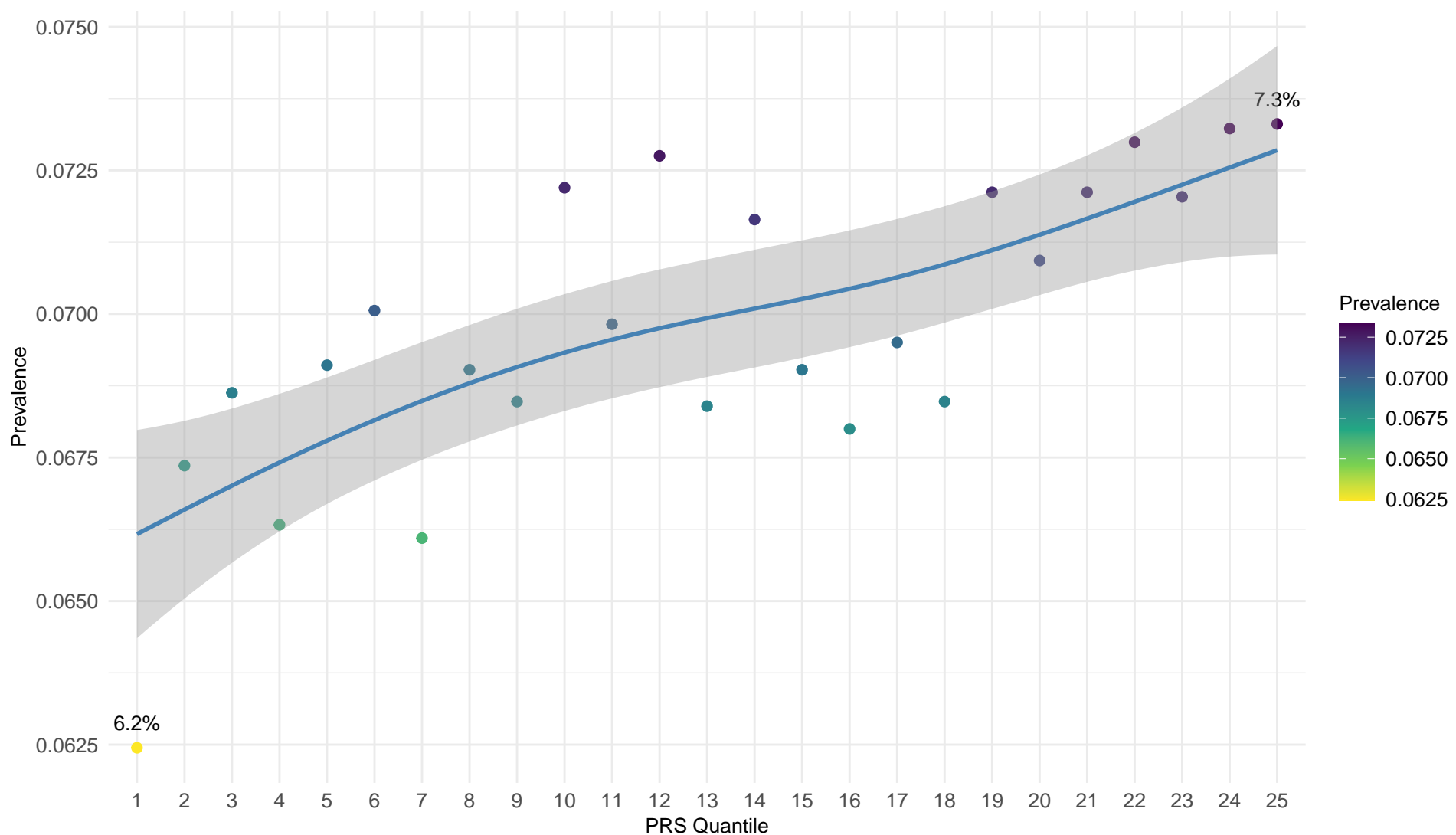

FIGURE 1:Prevalence of K62 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.07292
2	0.07895
3	0.08039
4	0.07721
5	0.08061
6	0.0816
7	0.07741
8	0.0809
9	0.08036
10	0.0845
11	0.08179
12	0.08538
13	0.07938
14	0.08401
15	0.08066
16	0.07992
17	0.08116
18	0.08048
19	0.08412
20	0.08275
21	0.08446
22	0.08544
23	0.08466
24	0.0854
25	0.08567

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−235.3225	9.402967e−05	0.5970071
2	Power	−235.2838	9.417537e−05	0.5963827
3	Linear	−231.8535	1.080259e−04	0.5370220
4	Exponential (lm)	−105.5094	1.084680e−04	0.5351272

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
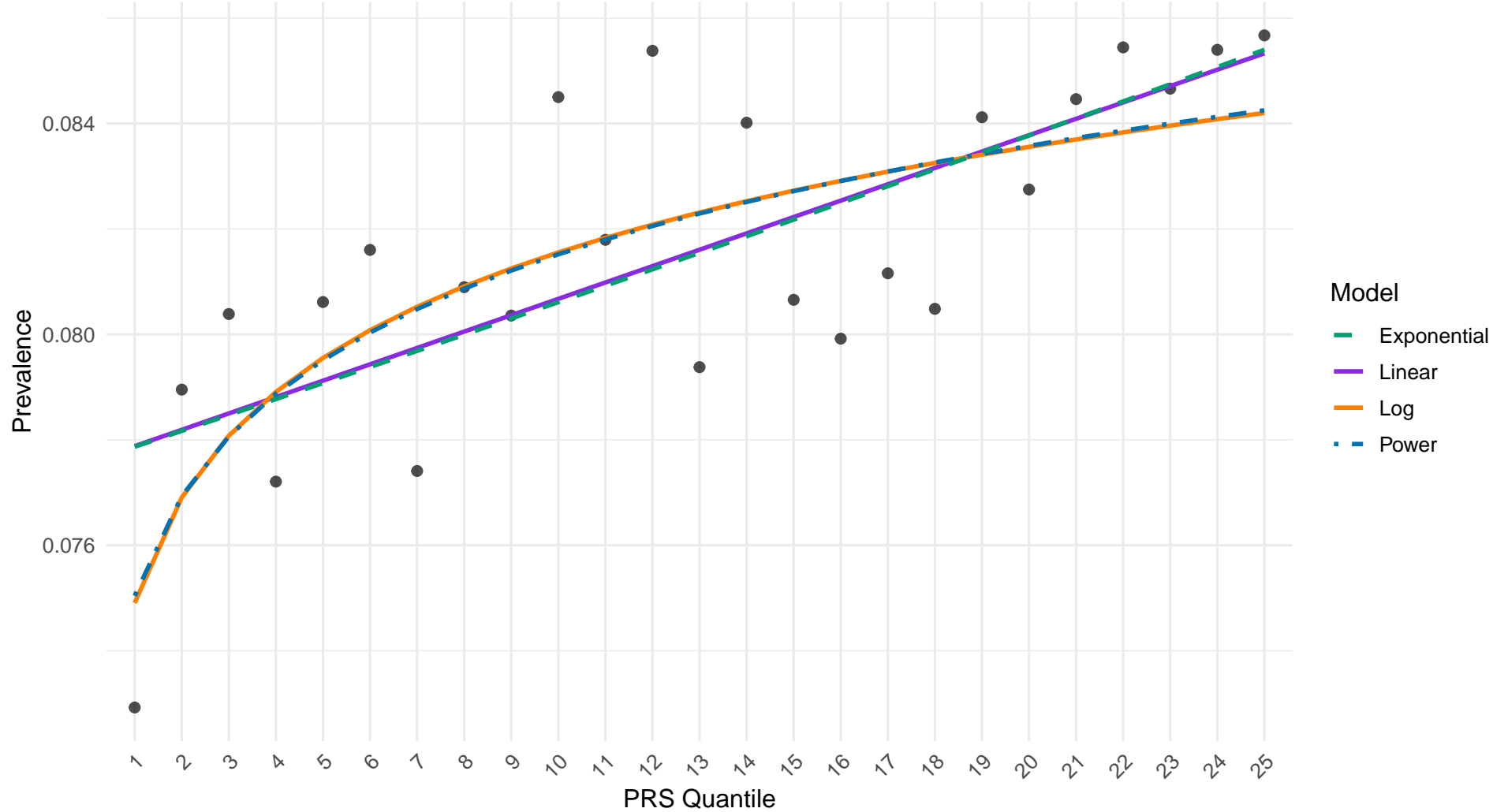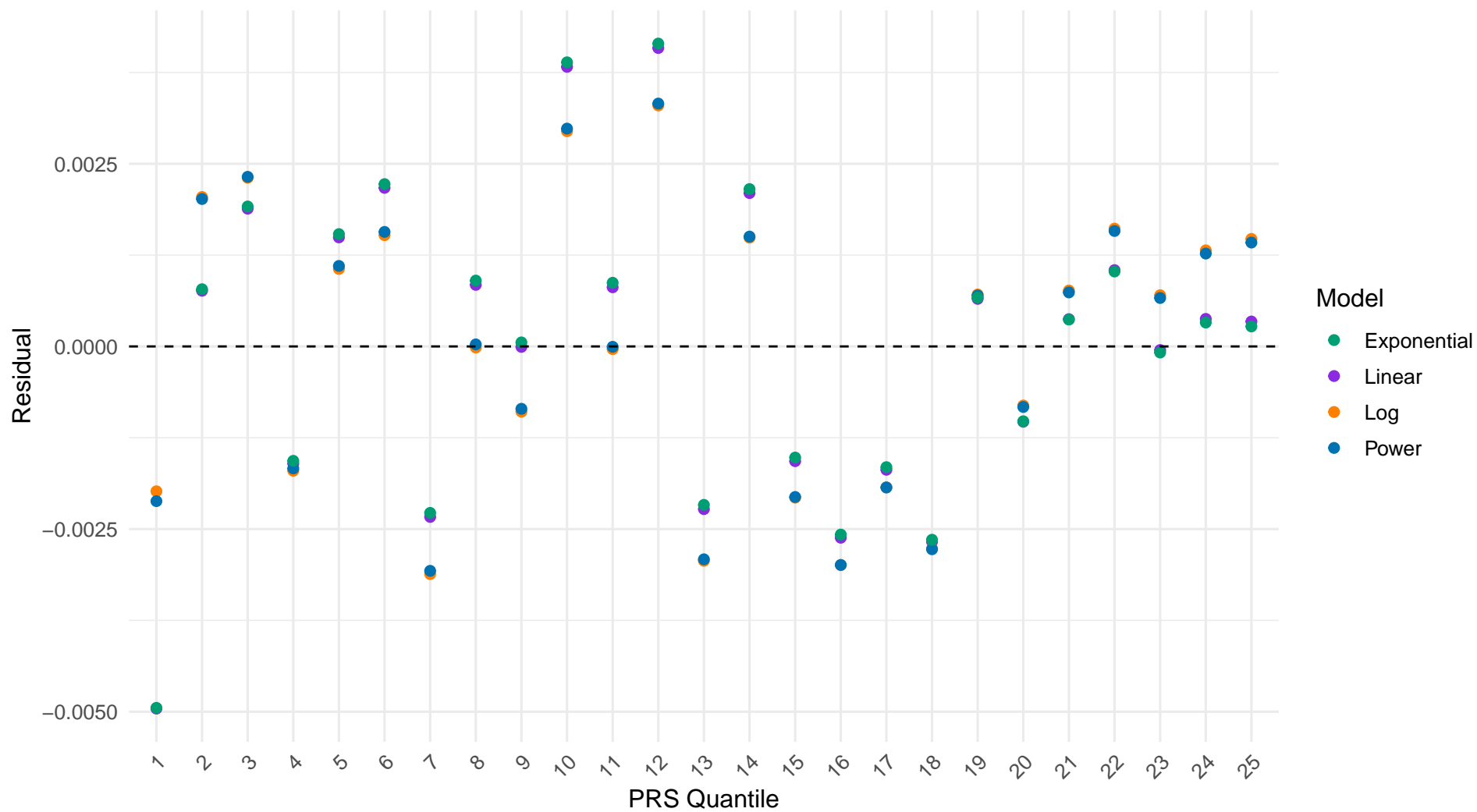Diagnosis: K62

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: K62

Chi2 Test for code: K62

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
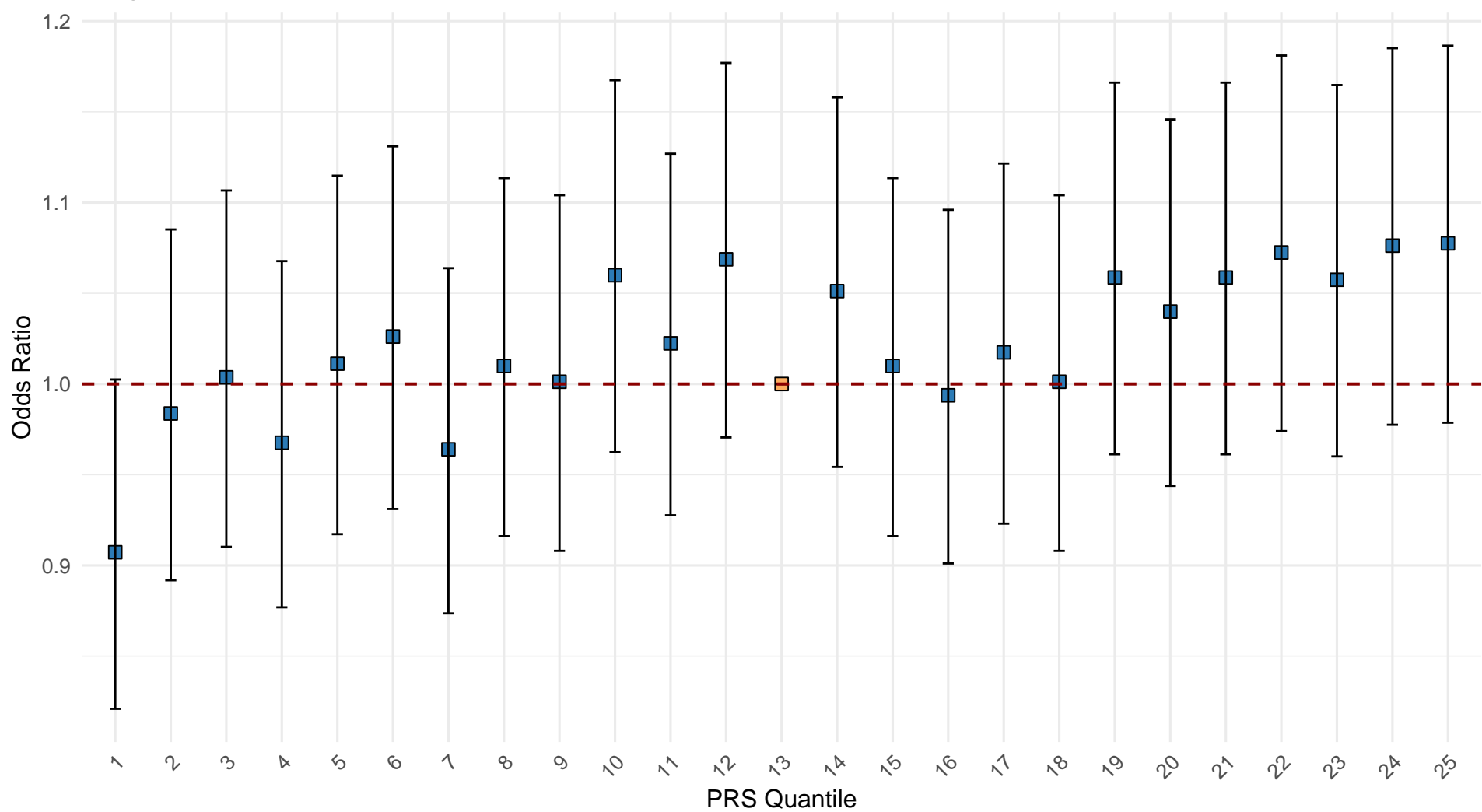Diagnosis: K62

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.91	0.82	1
2	0.98	0.89	1.09
3	1	0.91	1.11
4	0.97	0.88	1.07
5	1.01	0.92	1.11
6	1.03	0.93	1.13
7	0.96	0.87	1.06
8	1.01	0.92	1.11
9	1	0.91	1.1
10	1.06	0.96	1.17
11	1.02	0.93	1.13
12	1.07	0.97	1.18
13	1	1	1
14	1.05	0.95	1.16
15	1.01	0.92	1.11
16	0.99	0.9	1.1
17	1.02	0.92	1.12
18	1	0.91	1.1
19	1.06	0.96	1.17
20	1.04	0.94	1.15
21	1.06	0.96	1.17
22	1.07	0.97	1.18
23	1.06	0.96	1.16
24	1.08	0.98	1.19
25	1.08	0.98	1.19

```
Linear Model Summary for K62

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0049573 -0.0016042  0.0003736  0.0010445  0.0040847

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 7.757e-02  8.936e-04  86.809  < 2e-16 ***
PRS         3.105e-04  6.011e-05   5.165  3.1e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002167 on 23 degrees of freedom
Multiple R-squared:  0.537, Adjusted R-squared:  0.5169
F-statistic: 26.68 on 1 and 23 DF,  p-value: 3.1e-05


Log Model Summary for K62

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0031160 -0.0019283  0.0007007  0.0014887  0.0032984

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0749053  0.0012170  61.551   <2e-16 ***
log(PRS)    0.0028878  0.0004947   5.837    6e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002022 on 23 degrees of freedom
Multiple R-squared:  0.597, Adjusted R-squared:  0.5795
F-statistic: 34.07 on 1 and 23 DF,  p-value: 6.001e-06


Exponential Model Summary for K62

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.065633 -0.020078  0.003834  0.012070  0.049773

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -2.5565714  0.0111824 -228.625  < 2e-16 ***
PRS          0.0038457  0.0007522    5.113 3.53e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.02712 on 23 degrees of freedom
Multiple R-squared:  0.5319, Adjusted R-squared:  0.5116
F-statistic: 26.14 on 1 and 23 DF,  p-value: 3.53e-05


Power Model Summary for K62

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.075040   0.001176  63.804  < 2e-16 ***
b 0.035964   0.006283   5.724 7.89e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002024 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.923e-07
```

Prevalence analysis and model fitting for diagnosis: K63
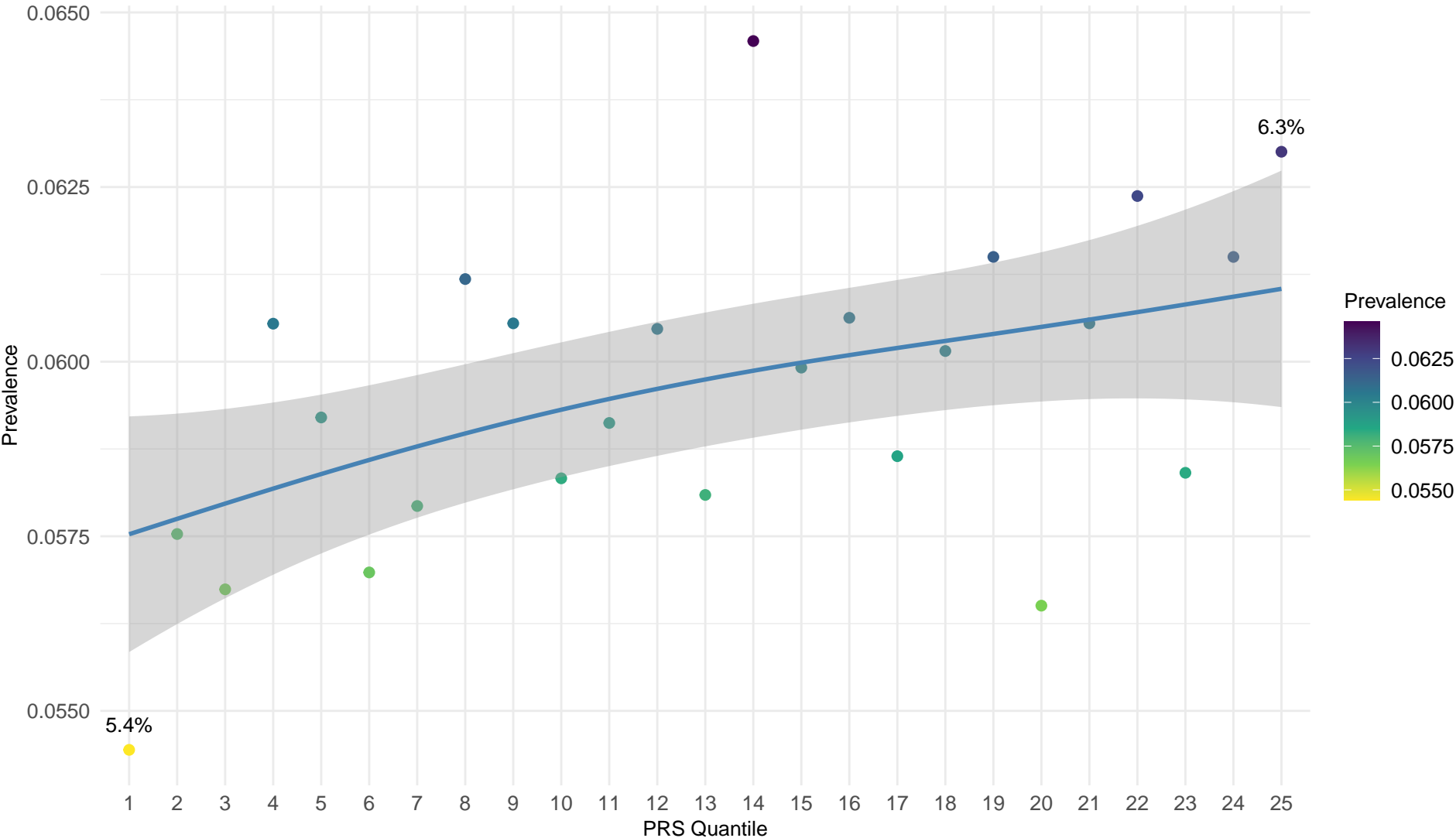
FIGURE 1:Prevalence of K63 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.06358
2	0.06743
3	0.06646
4	0.07047
5	0.06906
6	0.06637
7	0.06785
8	0.0717
9	0.07106
10	0.06827
11	0.06926
12	0.07096
13	0.06742
14	0.07574
15	0.07001
16	0.07126
17	0.06848
18	0.0707
19	0.07173
20	0.06592
21	0.07091
22	0.07301
23	0.06864
24	0.07172
25	0.07363

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−230.47092	0.0001141682	0.3532437
2	Power	−230.39680	0.0001145071	0.3513234
3	Linear	−227.32895	0.0001294573	0.2666316
4	Exponential (lm)	−94.08532	0.0001298218	0.2645669

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
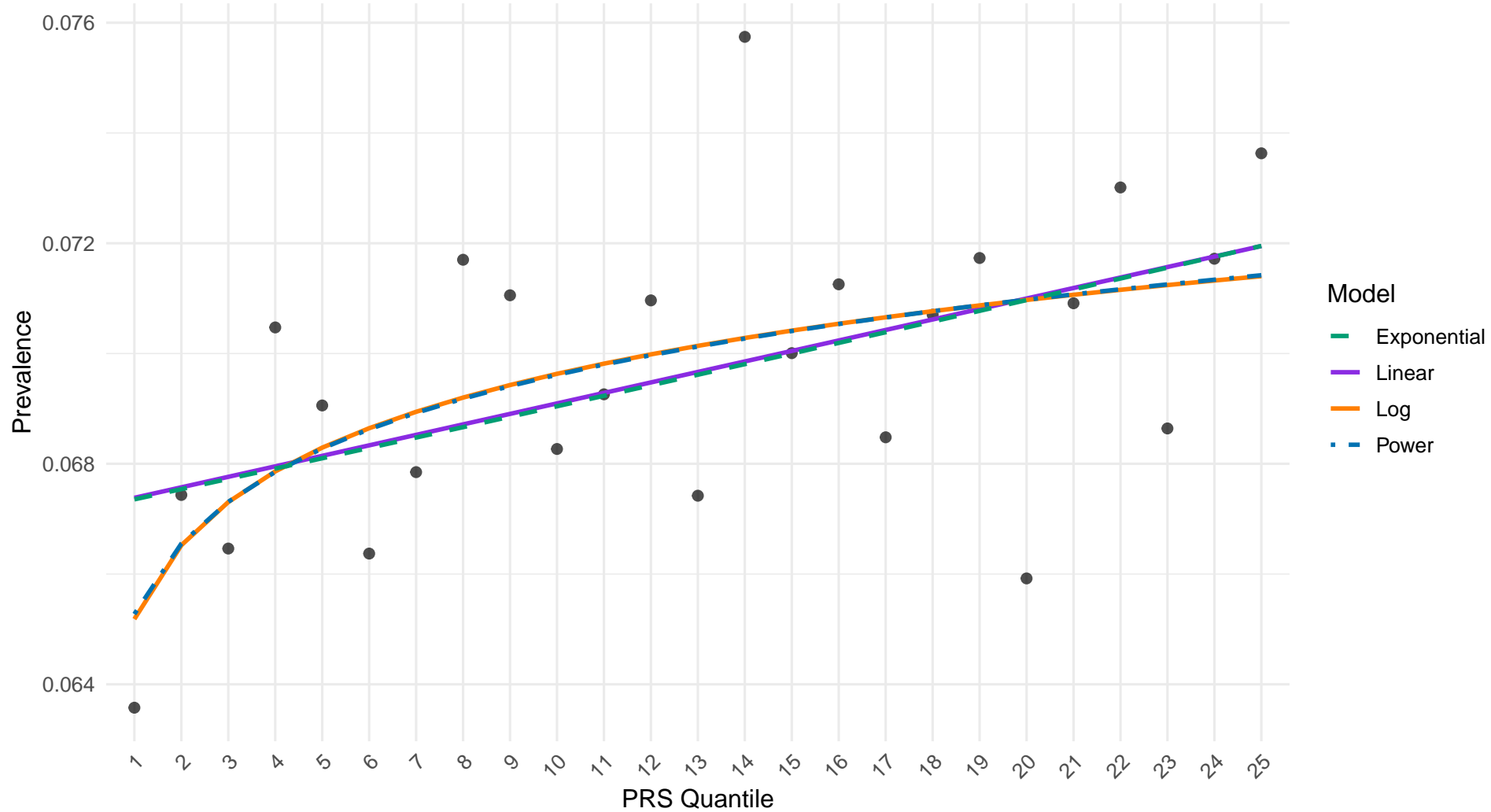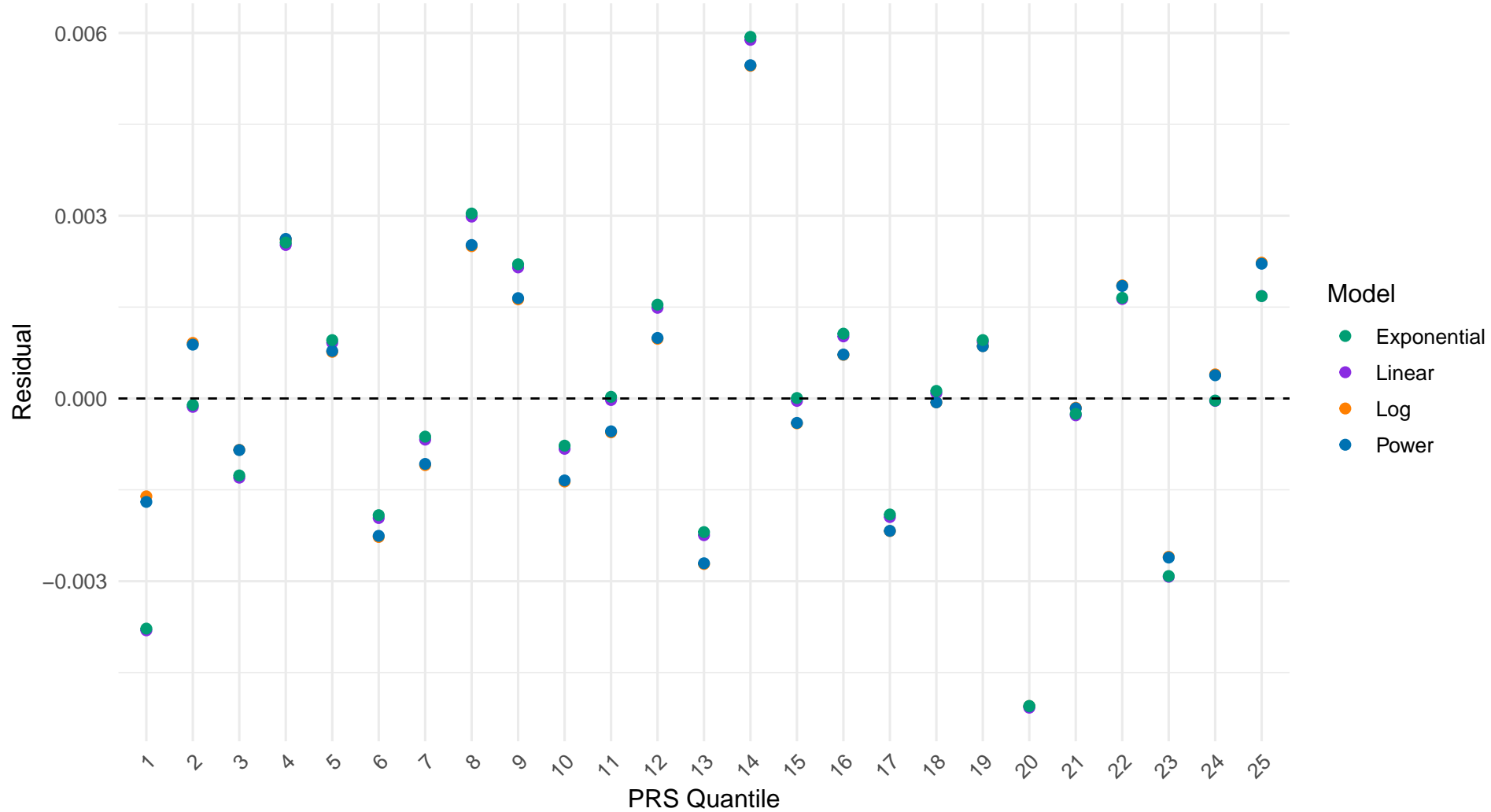Diagnosis: K63

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: K63

Chi2 Test for code: K63

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
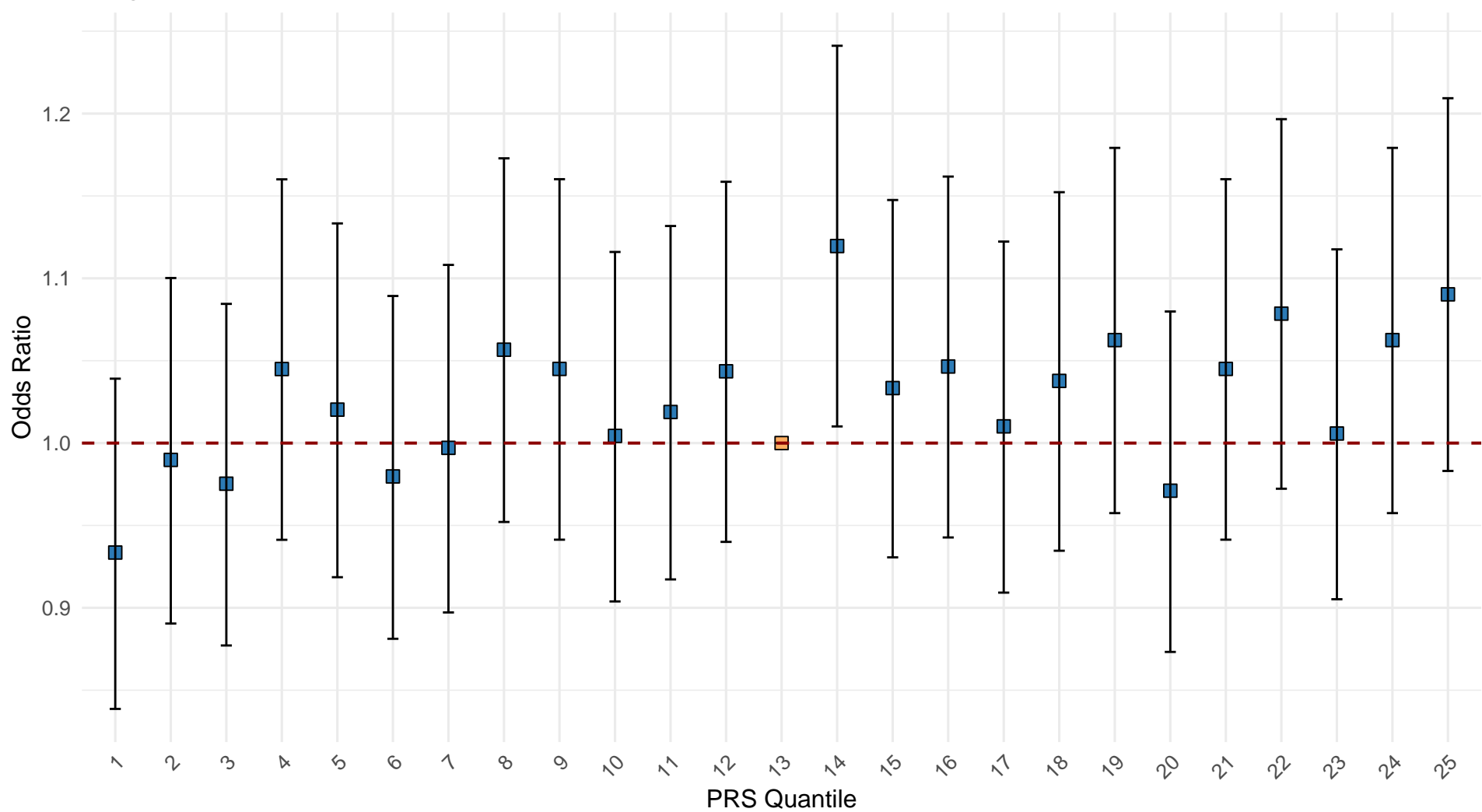Diagnosis: K63

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.93	0.84	1.04
2	0.99	0.89	1.1
3	0.98	0.88	1.08
4	1.04	0.94	1.16
5	1.02	0.92	1.13
6	0.98	0.88	1.09
7	1	0.9	1.11
8	1.06	0.95	1.17
9	1.05	0.94	1.16
10	1	0.9	1.12
11	1.02	0.92	1.13
12	1.04	0.94	1.16
13	1	1	1
14	1.12	1.01	1.24
15	1.03	0.93	1.15
16	1.05	0.94	1.16
17	1.01	0.91	1.12
18	1.04	0.93	1.15
19	1.06	0.96	1.18
20	0.97	0.87	1.08
21	1.05	0.94	1.16
22	1.08	0.97	1.2
23	1.01	0.91	1.12
24	1.06	0.96	1.18
25	1.09	0.98	1.21

```
Linear Model Summary for K63

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median        3Q        Max
-0.0050771 -0.0013008 -0.0000401  0.0014878  0.0058872

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0671925  0.0009782  68.691  < 2e-16 ***
PRS         0.0001903  0.0000658   2.892  0.00823 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002372 on 23 degrees of freedom
Multiple R-squared:  0.2666, Adjusted R-squared:  0.2347
F-statistic: 8.362 on 1 and 23 DF,  p-value: 0.008228


Log Model Summary for K63

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q      Median        3Q        Max
-0.0050505 -0.0013639 -0.0000645  0.0009791  0.0054613

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0651833  0.0013410  48.609  < 2e-16 ***
log(PRS)    0.0019321  0.0005451   3.544  0.00173 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002228 on 23 degrees of freedom
Multiple R-squared:  0.3532, Adjusted R-squared:  0.3251
F-statistic: 12.56 on 1 and 23 DF,  p-value: 0.00173


Exponential Model Summary for K63

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.073786 -0.018836  0.000102  0.021934  0.081618

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept) -2.7005354  0.0140528 -192.17  < 2e-16 ***
PRS          0.0027511  0.0009453    2.91  0.00788 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.03408 on 23 degrees of freedom
Multiple R-squared:  0.2691, Adjusted R-squared:  0.2374
F-statistic:  8.47 on 1 and 23 DF,  p-value: 0.007881


Power Model Summary for K63

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.065274   0.001307  49.934  < 2e-16 ***
b 0.027954   0.008052   3.472  0.00207 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002231 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 4.373e-07
```

Prevalence analysis and model fitting for diagnosis: K92
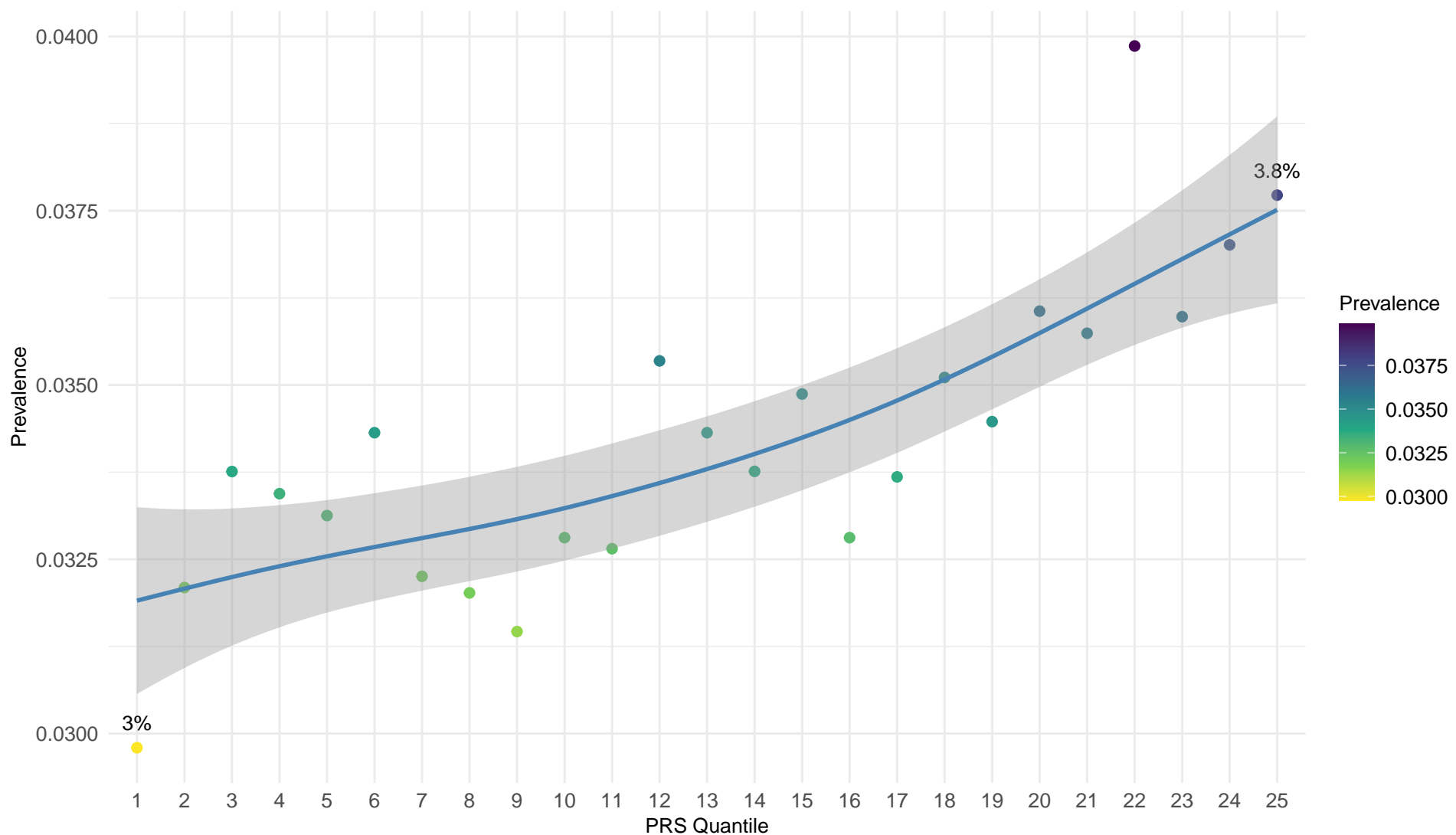

FIGURE 1:Prevalence of K92 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.0348
2	0.03762
3	0.03954
4	0.03893
5	0.03864
6	0.03997
7	0.03778
8	0.03752
9	0.03692
10	0.0384
11	0.03825
12	0.04148
13	0.03983
14	0.03959
15	0.04074
16	0.03856
17	0.03933
18	0.04127
19	0.04021
20	0.04207
21	0.04186
22	0.04666
23	0.04228
24	0.04316
25	0.04409

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−248.48201	5.554696e−05	0.6376321
2	Power	−242.02120	7.192768e−05	0.5307703
3	Log	−241.52478	7.337021e−05	0.5213598
4	Exponential (lm)	−88.47081	5.462435e−05	0.6436509

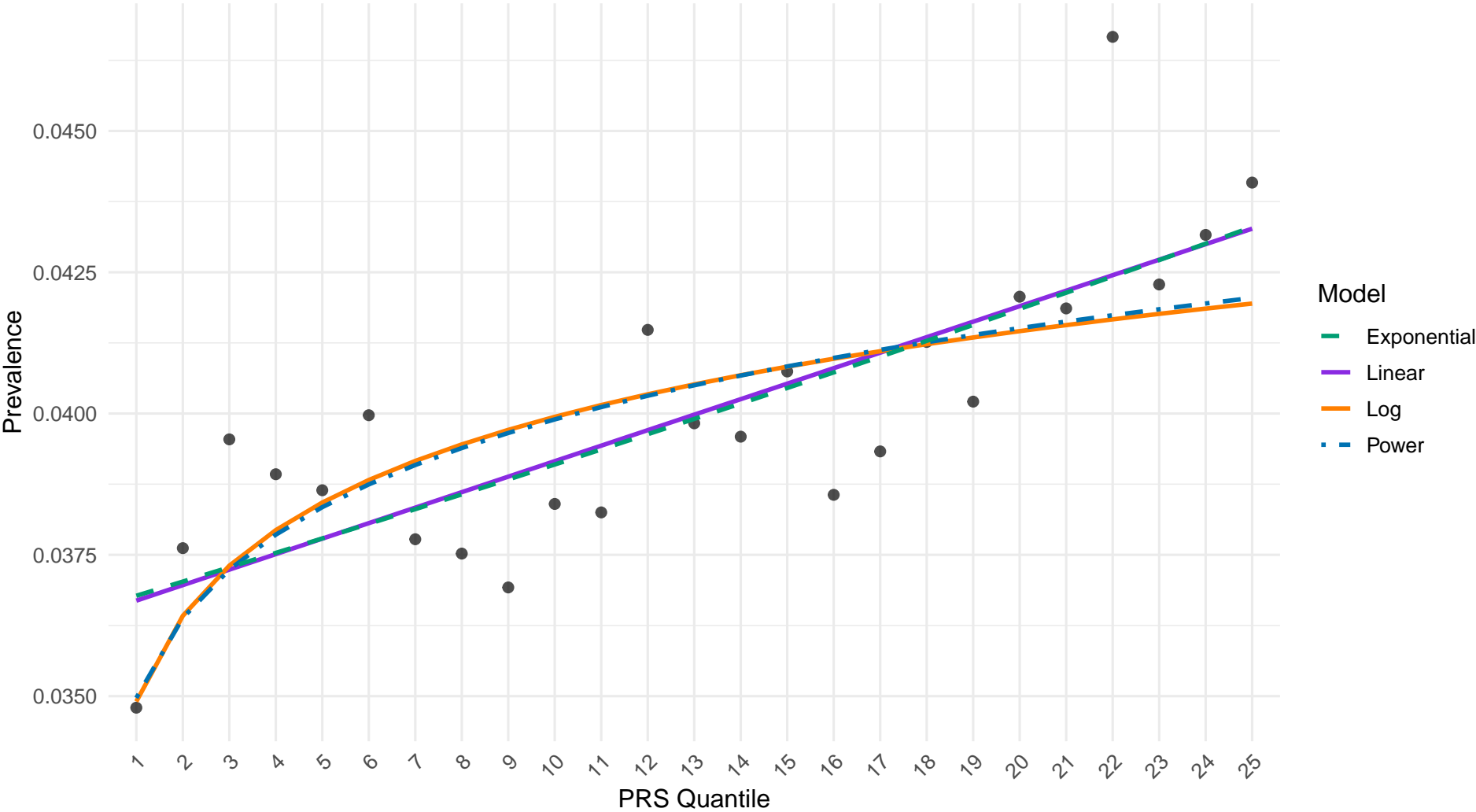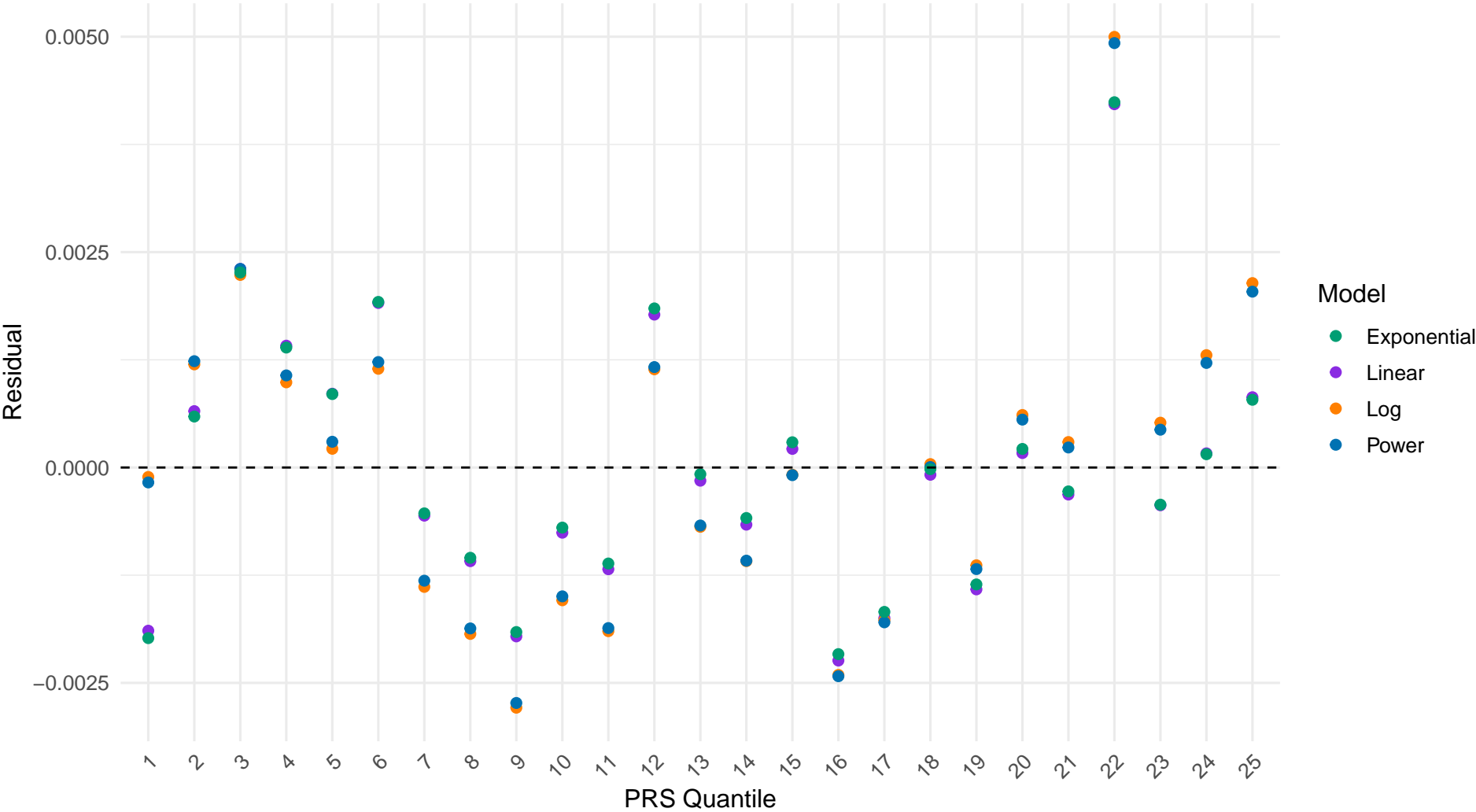FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
Diagnosis: K92

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: K92

Chi2 Test for code: K92

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
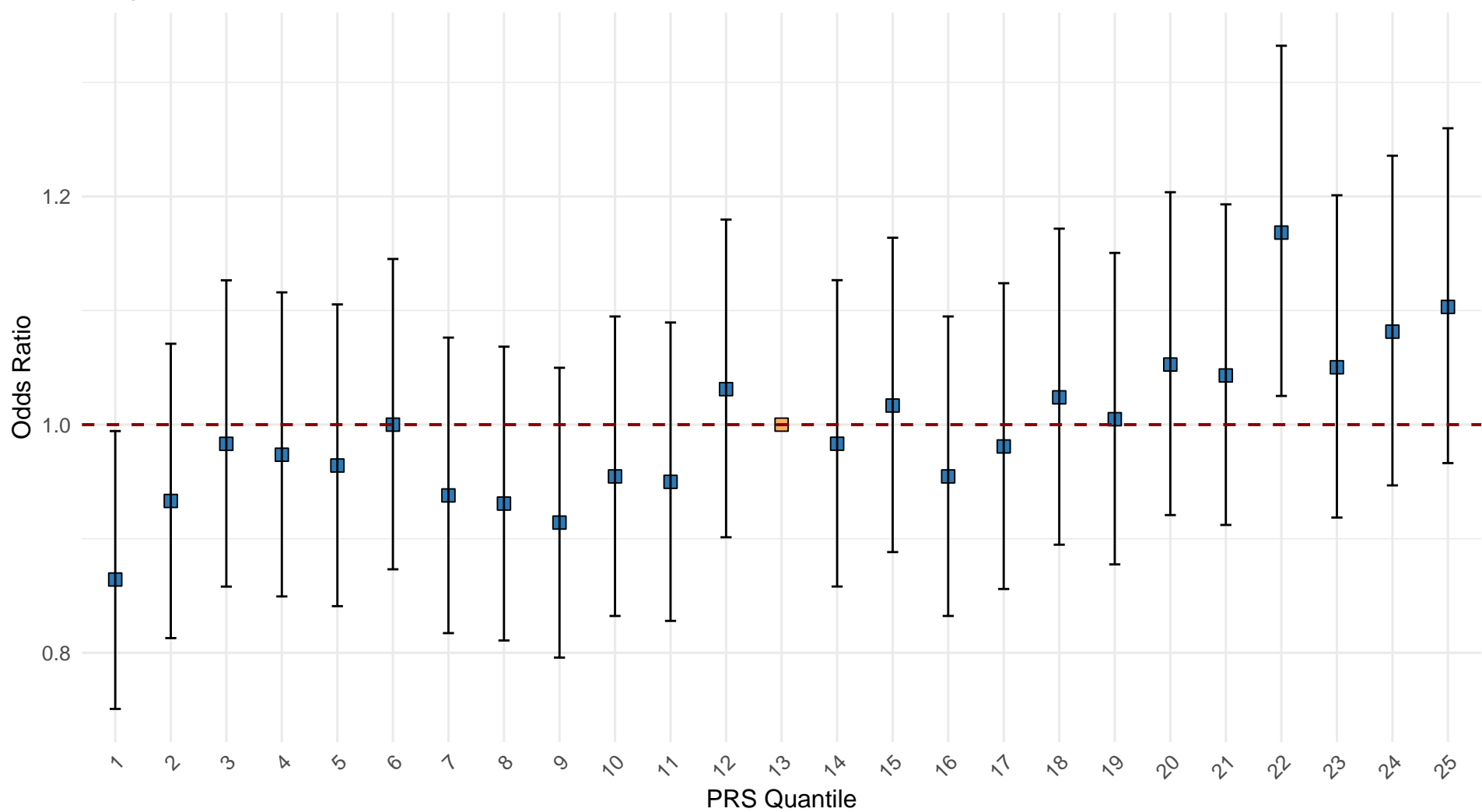Diagnosis: K92

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.86	0.75	0.99
2	0.93	0.81	1.07
3	0.98	0.86	1.13
4	0.97	0.85	1.12
5	0.96	0.84	1.11
6	1	0.87	1.15
7	0.94	0.82	1.08
8	0.93	0.81	1.07
9	0.91	0.8	1.05
10	0.95	0.83	1.09
11	0.95	0.83	1.09
12	1.03	0.9	1.18
13	1	1	1
14	0.98	0.86	1.13
15	1.02	0.89	1.16
16	0.95	0.83	1.09
17	0.98	0.86	1.12
18	1.02	0.89	1.17
19	1	0.88	1.15
20	1.05	0.92	1.2
21	1.04	0.91	1.19
22	1.17	1.03	1.33
23	1.05	0.92	1.2
24	1.08	0.95	1.24
25	1.1	0.97	1.26

```
Linear Model Summary for K92

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0022410 -0.0010872 -0.0001532  0.0008157  0.0042168

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0364156  0.0006408  56.833  < 2e-16 ***
PRS         0.0002742  0.0000431   6.362 1.72e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001554 on 23 degrees of freedom
Multiple R-squared:  0.6376, Adjusted R-squared:  0.6219
F-statistic: 40.47 on 1 and 23 DF,  p-value: 1.717e-06


Log Model Summary for K92

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0027880 -0.0013855  0.0000394  0.0011400  0.0049984

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.034905    0.001075  32.470  < 2e-16 ***
log(PRS)    0.002187    0.000437   5.005 4.6e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001786 on 23 degrees of freedom
Multiple R-squared:  0.5214, Adjusted R-squared:  0.5005
F-statistic: 25.05 on 1 and 23 DF,  p-value: 4.604e-05


Exponential Model Summary for K92

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.055351 -0.027545 -0.001952  0.017990  0.095246

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.309722    0.015723 -210.504  < 2e-16 ***
PRS          0.006805    0.001058    6.434 1.45e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.03813 on 23 degrees of freedom
Multiple R-squared:  0.6429, Adjusted R-squared:  0.6273
F-statistic:  41.4 on 1 and 23 DF,  p-value: 1.448e-06


Power Model Summary for K92

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.034969   0.001006  34.762  < 2e-16 ***
b 0.057253   0.011442   5.004 4.62e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001768 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.663e-07
```

Prevalence analysis and model fitting for diagnosis: M15
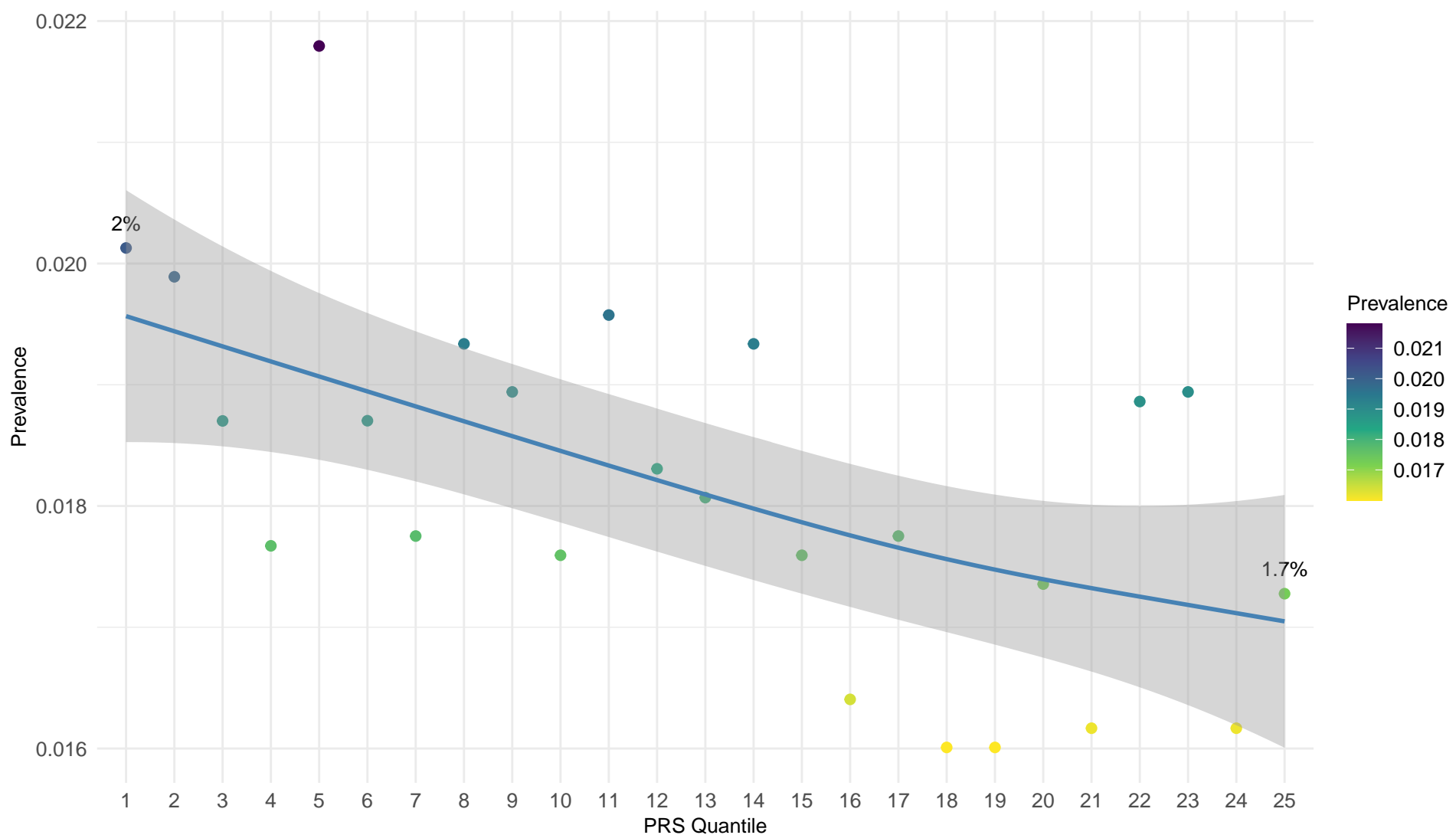

FIGURE 1:Prevalence of M15 across SCZ–PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.02351
2	0.02331
3	0.02191
4	0.02057
5	0.02542
6	0.02179
7	0.02079
8	0.02266
9	0.02223
10	0.02059
11	0.02293
12	0.02148
13	0.02097
14	0.02268
15	0.02056
16	0.01928
17	0.02073
18	0.01882
19	0.01867
20	0.02025
21	0.01893
22	0.02208
23	0.02226
24	0.01885
25	0.02019

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−254.42874	4.378799e−05	0.3622351
2	Log	−253.97330	4.459301e−05	0.3505101
3	Power	−253.79193	4.491771e−05	0.3457810
4	Exponential (lm)	−62.30064	4.361969e−05	0.3646865

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
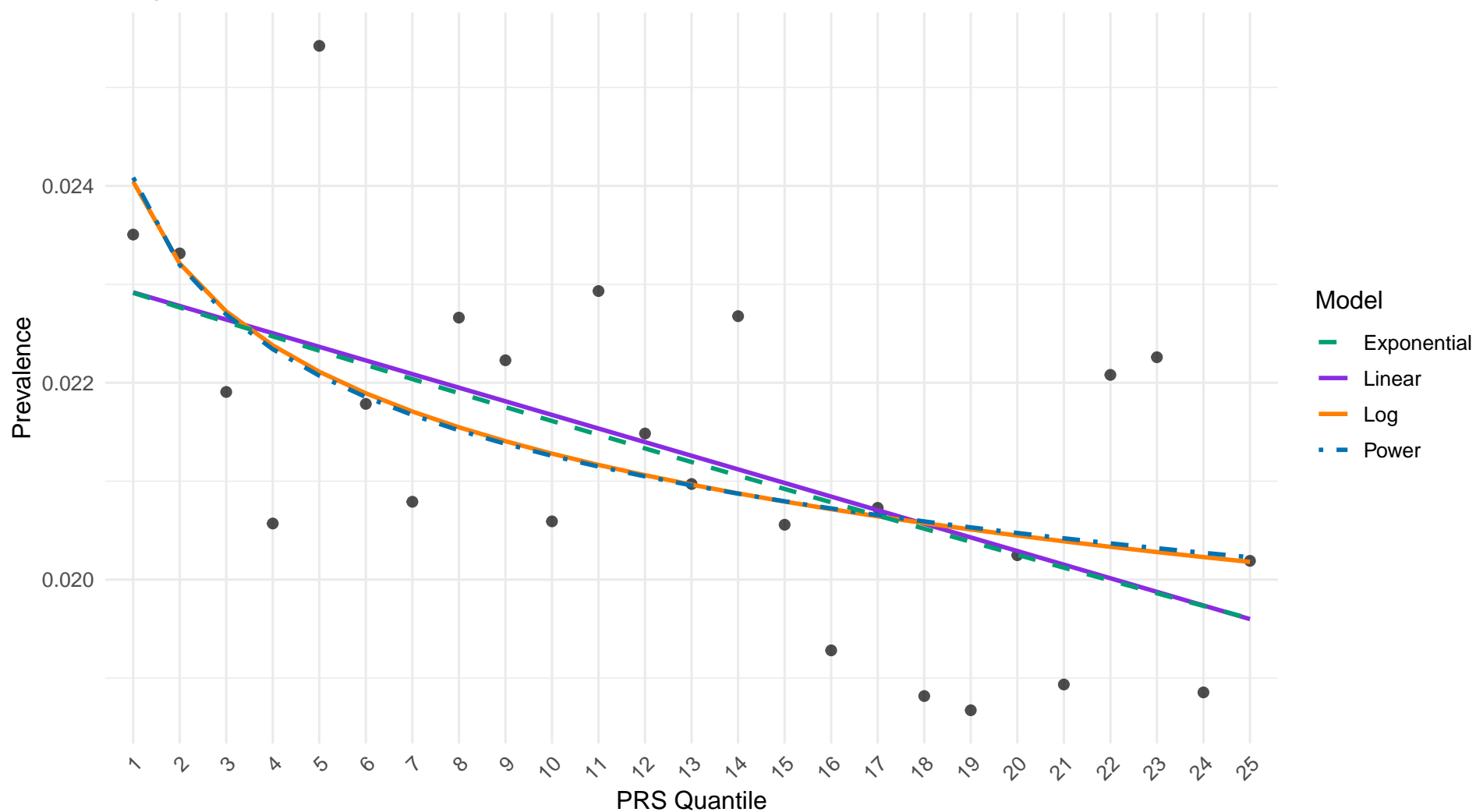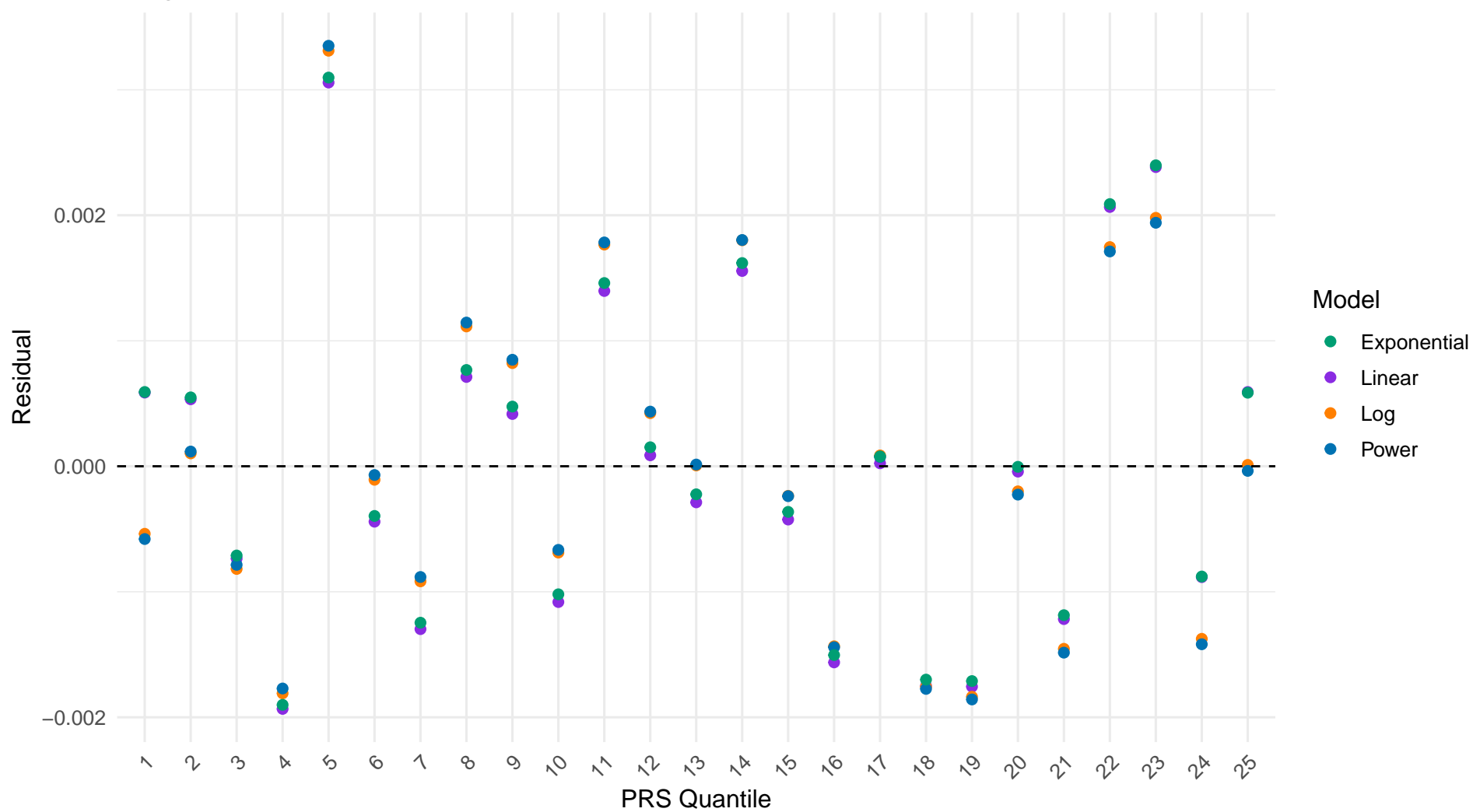Diagnosis: M15

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: M15

Chi2 Test for code: M15

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
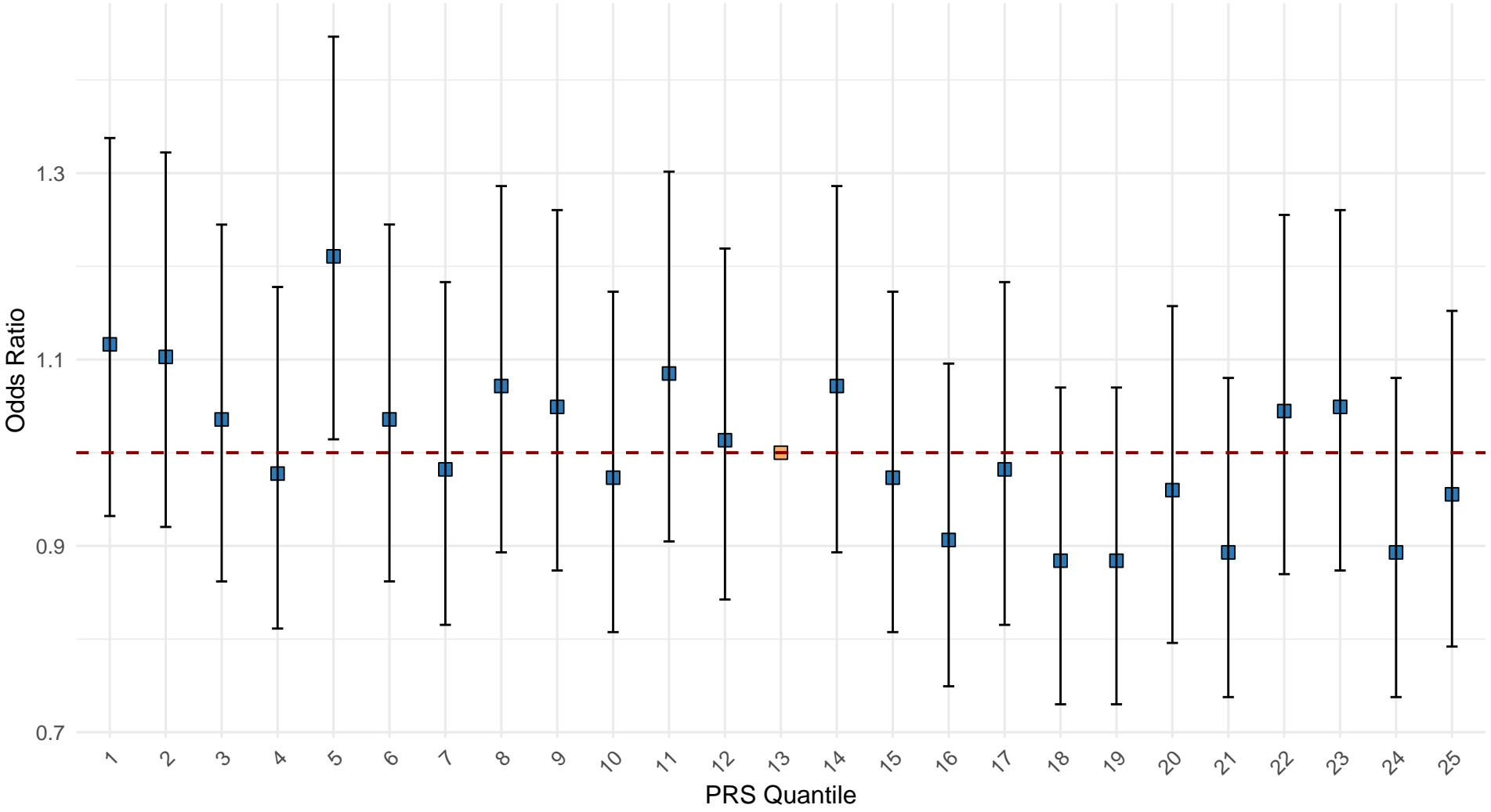Diagnosis: M15

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.12	0.93	1.34
2	1.1	0.92	1.32
3	1.04	0.86	1.24
4	0.98	0.81	1.18
5	1.21	1.01	1.45
6	1.04	0.86	1.24
7	0.98	0.82	1.18
8	1.07	0.89	1.29
9	1.05	0.87	1.26
10	0.97	0.81	1.17
11	1.08	0.9	1.3
12	1.01	0.84	1.22
13	1	1	1
14	1.07	0.89	1.29
15	0.97	0.81	1.17
16	0.91	0.75	1.1
17	0.98	0.82	1.18
18	0.88	0.73	1.07
19	0.88	0.73	1.07
20	0.96	0.8	1.16
21	0.89	0.74	1.08
22	1.04	0.87	1.26
23	1.05	0.87	1.26
24	0.89	0.74	1.08
25	0.96	0.79	1.15

```
Linear Model Summary for M15

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-1.933e-03 -1.082e-03 -4.262e-05  5.920e-04  3.058e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  2.306e-02  5.689e-04  40.528  < 2e-16 ***
PRS         -1.383e-04  3.827e-05  -3.614  0.00146 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.00138 on 23 degrees of freedom
Multiple R-squared:  0.3622,	Adjusted R-squared:  0.3345
F-statistic: 13.06 on 1 and 23 DF,  p-value: 0.001458


Log Model Summary for M15

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0018367 -0.0009170 -0.0001075  0.0008223  0.0033113

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0240434  0.0008381  28.689  < 2e-16 ***
log(PRS)    -0.0012003  0.0003407  -3.523  0.00182 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001392 on 23 degrees of freedom
Multiple R-squared:  0.3505,	Adjusted R-squared:  0.3223
F-statistic: 12.41 on 1 and 23 DF,  p-value: 0.001822


Exponential Model Summary for M15

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.088397 -0.048352 -0.000216  0.029457  0.129917

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -3.769529   0.026536 -142.05  < 2e-16 ***
PRS         -0.006498   0.001785   -3.64  0.00137 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.06436 on 23 degrees of freedom
Multiple R-squared:  0.3656,	Adjusted R-squared:  0.338
F-statistic: 13.25 on 1 and 23 DF,  p-value: 0.001368


Power Model Summary for M15

Formula: prevalence ~ a * PRS^b

Parameters:
    Estimate Std. Error t value Pr(>|t|)
a  0.0240852  0.0008835  27.260   <2e-16 ***
b -0.0542306  0.0152653  -3.553   0.0017 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001397 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.947e-06
```

Prevalence analysis and model fitting for diagnosis: M17
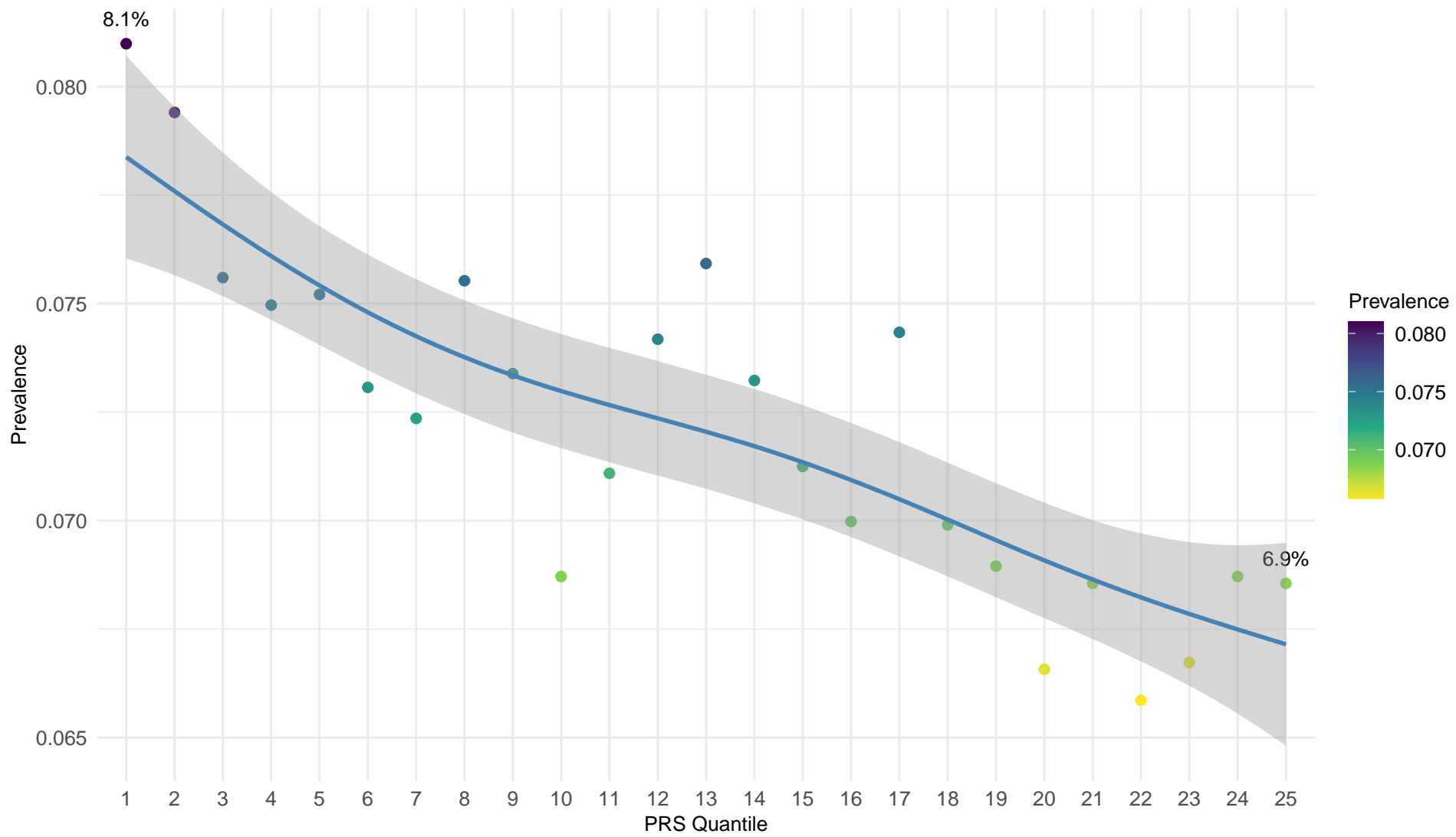

FIGURE 1:Prevalence of M17 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.09458
2	0.09307
3	0.08855
4	0.08726
5	0.08773
6	0.08511
7	0.08474
8	0.08851
9	0.08612
10	0.08042
11	0.08328
12	0.08705
13	0.08812
14	0.08587
15	0.08325
16	0.08225
17	0.0868
18	0.08216
19	0.08042
20	0.07766
21	0.08029
22	0.07709
23	0.07842
24	0.08013
25	0.08011

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−225.4899	0.0001393395	0.7193652
2	Power	−225.1240	0.0001413938	0.7152279
3	Linear	−223.6447	0.0001500128	0.6978689
4	Exponential (lm)	−100.5761	0.0001486939	0.7005252

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
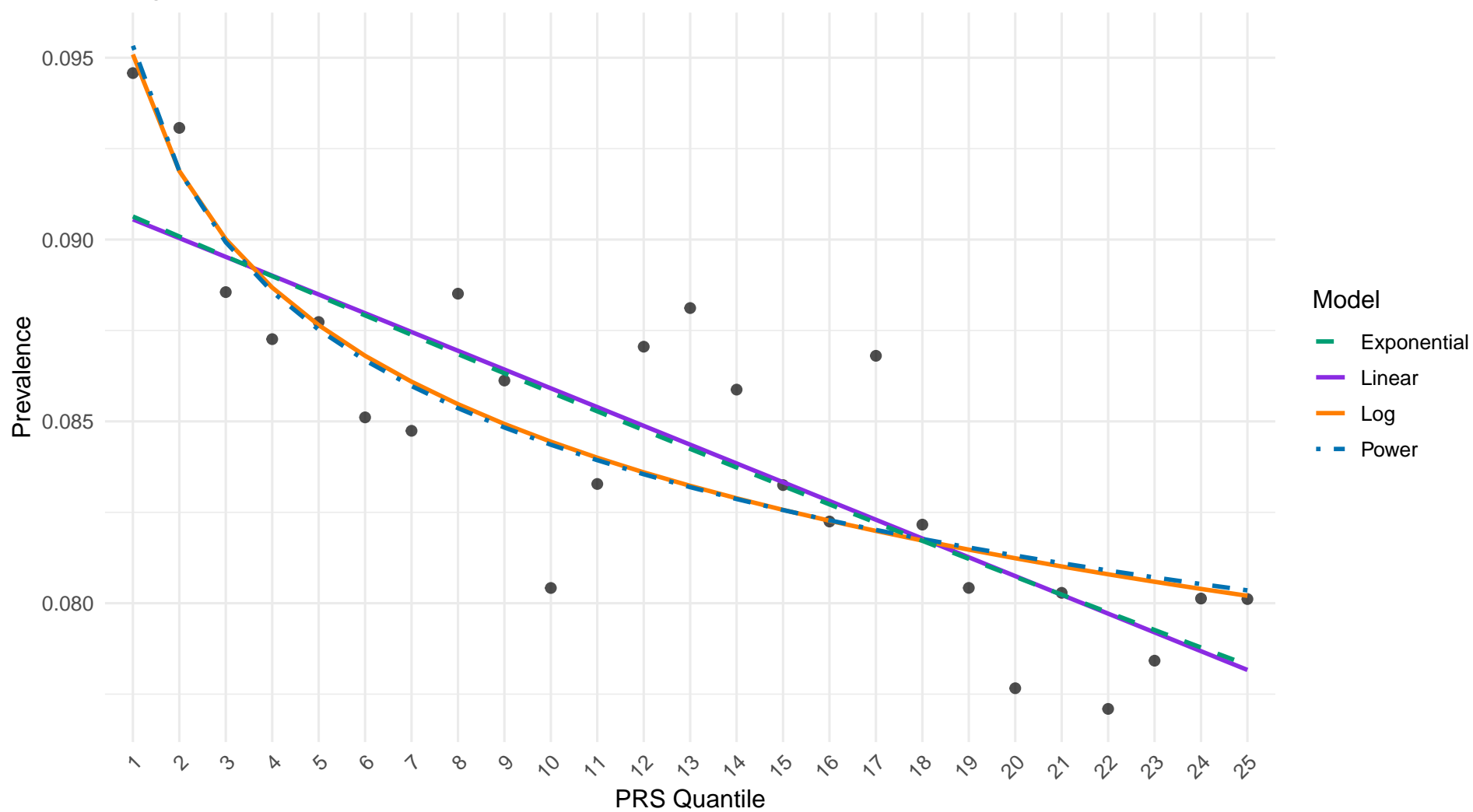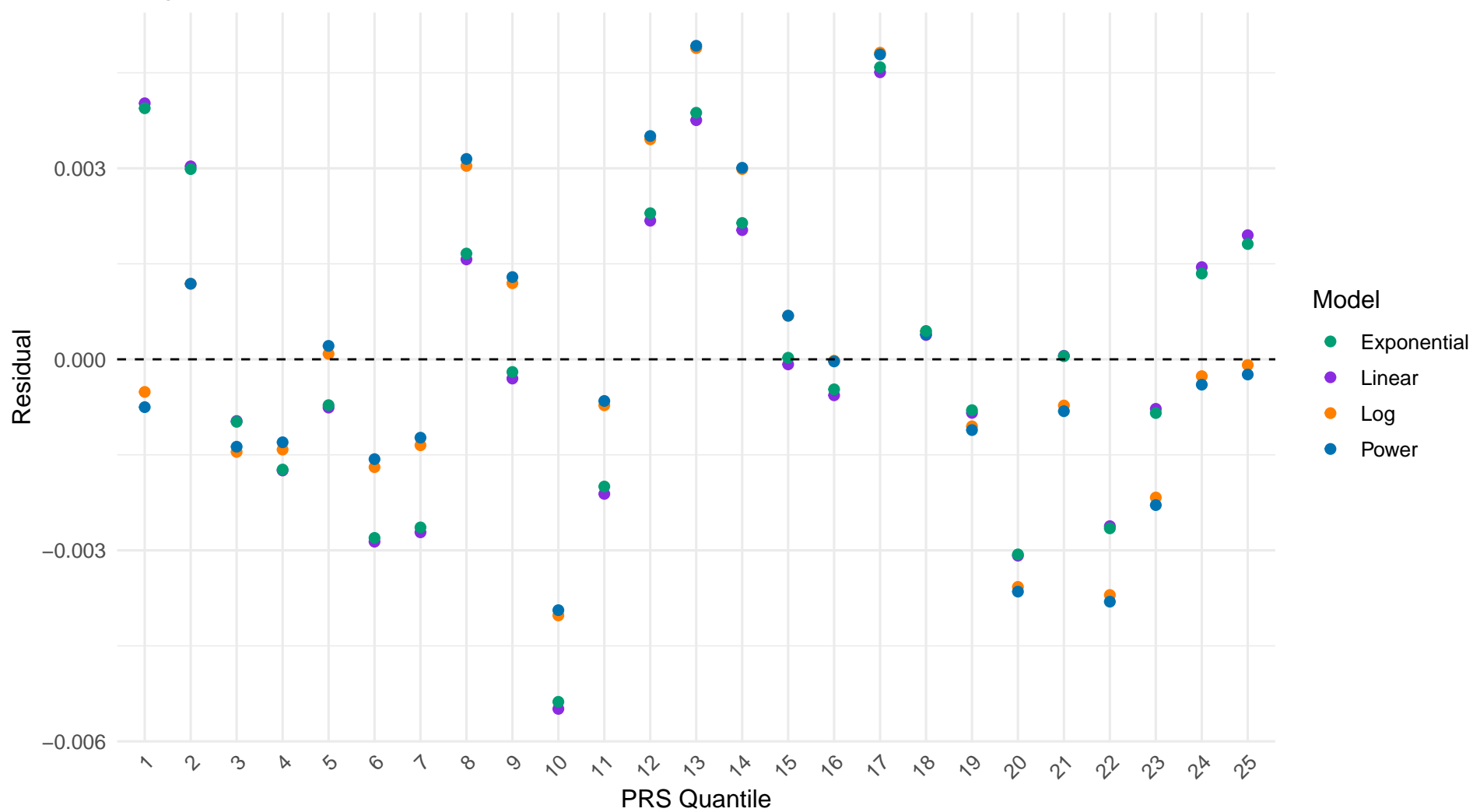Diagnosis: M17

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: M17

Chi2 Test for code: M17

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
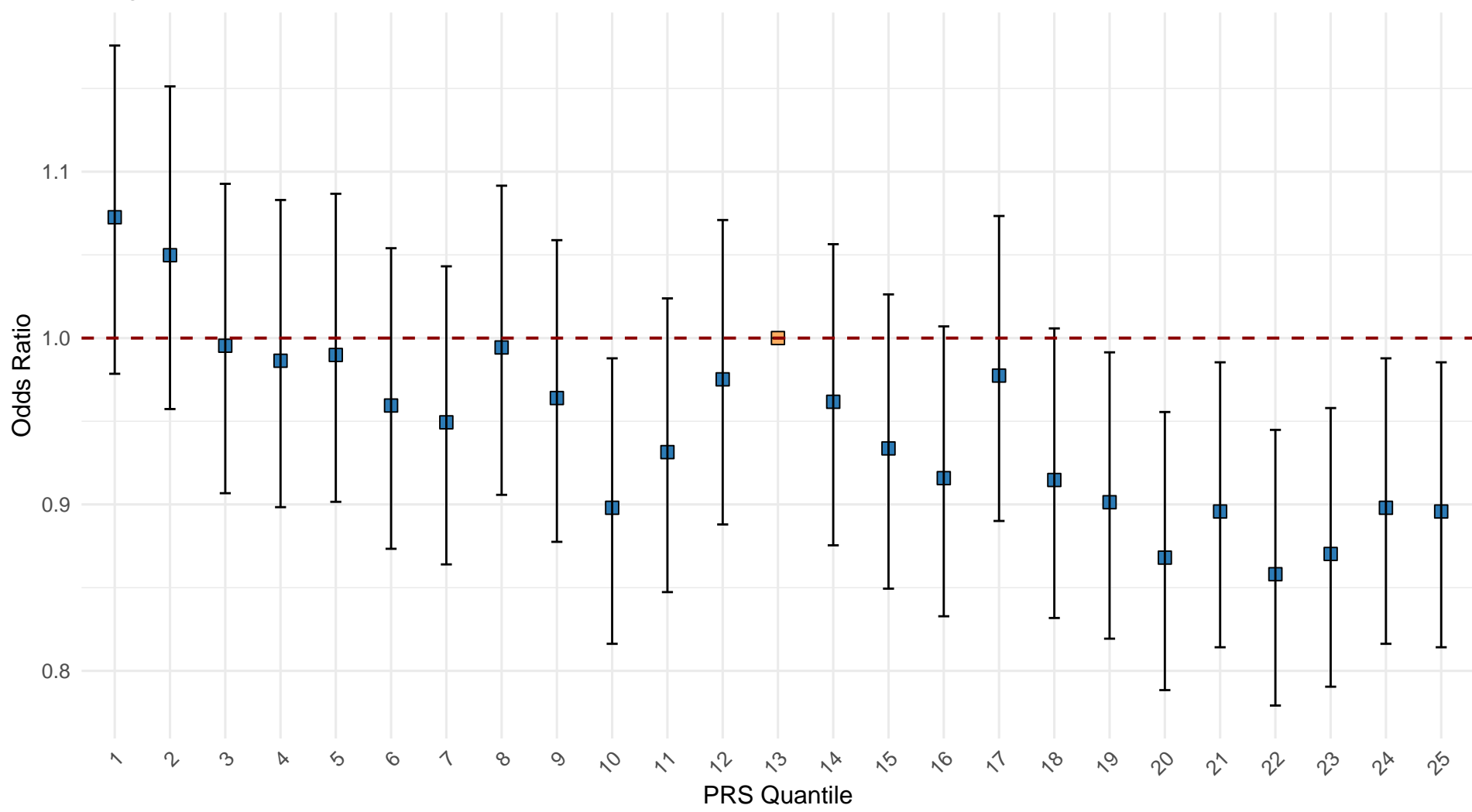Diagnosis: M17

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.07	0.98	1.18
2	1.05	0.96	1.15
3	1	0.91	1.09
4	0.99	0.9	1.08
5	0.99	0.9	1.09
6	0.96	0.87	1.05
7	0.95	0.86	1.04
8	0.99	0.91	1.09
9	0.96	0.88	1.06
10	0.9	0.82	0.99
11	0.93	0.85	1.02
12	0.98	0.89	1.07
13	1	1	1
14	0.96	0.88	1.06
15	0.93	0.85	1.03
16	0.92	0.83	1.01
17	0.98	0.89	1.07
18	0.91	0.83	1.01
19	0.9	0.82	0.99
20	0.87	0.79	0.96
21	0.9	0.81	0.99
22	0.86	0.78	0.94
23	0.87	0.79	0.96
24	0.9	0.82	0.99
25	0.9	0.81	0.99

```
Linear Model Summary for M17

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0054901 -0.0017457 -0.0003021  0.0019496  0.0045082

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  9.107e-02  1.053e-03  86.489  < 2e-16 ***
PRS         -5.163e-04  7.083e-05  -7.289 2.04e-07 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002554 on 23 degrees of freedom
Multiple R-squared:  0.6979, Adjusted R-squared:  0.6847
F-statistic: 53.13 on 1 and 23 DF,  p-value: 2.039e-07


Log Model Summary for M17

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0040225 -0.0014174 -0.0002641  0.0011868  0.0048877

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0950891  0.0014814  64.187  < 2e-16 ***
log(PRS)    -0.0046241  0.0006022  -7.678 8.61e-08 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002461 on 23 degrees of freedom
Multiple R-squared:  0.7194, Adjusted R-squared:  0.7072
F-statistic: 58.96 on 1 and 23 DF,  p-value: 8.609e-08


Exponential Model Summary for M17

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.064742 -0.019646 -0.002306  0.022860  0.054304

Coefficients:
              Estimate Std. Error   t value Pr(>|t|)
(Intercept) -2.3948303  0.0123420 -194.039  < 2e-16 ***
PRS         -0.0060930  0.0008302   -7.339 1.82e-07 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.02993 on 23 degrees of freedom
Multiple R-squared:  0.7008, Adjusted R-squared:  0.6877
F-statistic: 53.86 on 1 and 23 DF,  p-value: 1.822e-07


Power Model Summary for M17

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.095328   0.001566   60.87  < 2e-16 ***
b -0.053091   0.006833   -7.77 7.04e-08 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002479 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.354e-06
```

Prevalence analysis and model fitting for diagnosis: M18
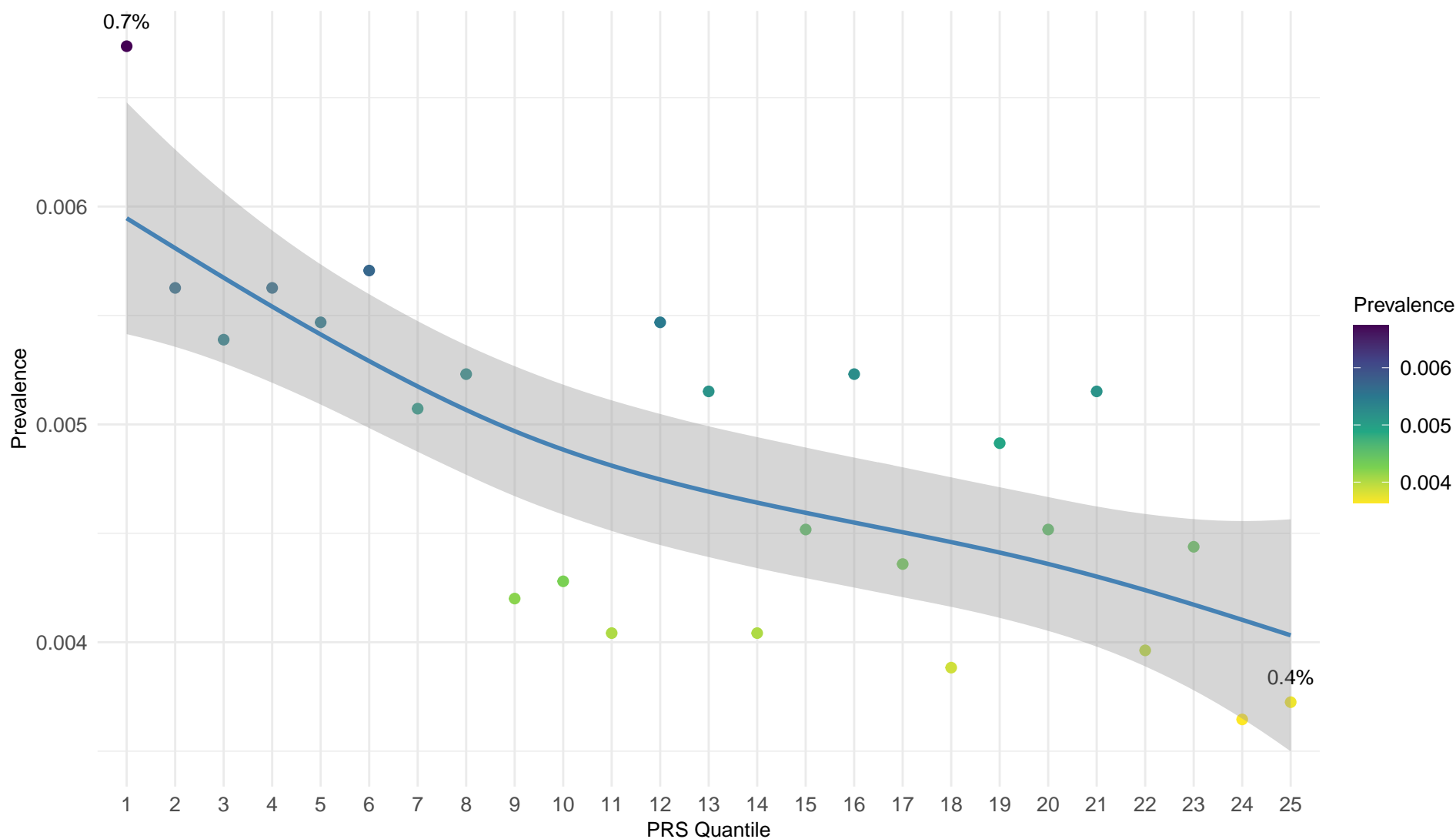
FIGURE 1:Prevalence of M18 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00787
2	0.00659
3	0.00631
4	0.00655
5	0.00638
6	0.00665
7	0.00594
8	0.00613
9	0.00493
10	0.00501
11	0.00473
12	0.00642
13	0.00598
14	0.00474
15	0.00528
16	0.00615
17	0.00509
18	0.00456
19	0.00573
20	0.00527
21	0.00603
22	0.00464
23	0.00522
24	0.00425
25	0.00435

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−298.12267	7.626299e−06	0.6027807
2	Power	−298.09468	7.634842e−06	0.6023357
3	Linear	−293.47795	9.183344e−06	0.5216812
4	Exponential (lm)	−34.53488	8.976464e−06	0.5324567

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
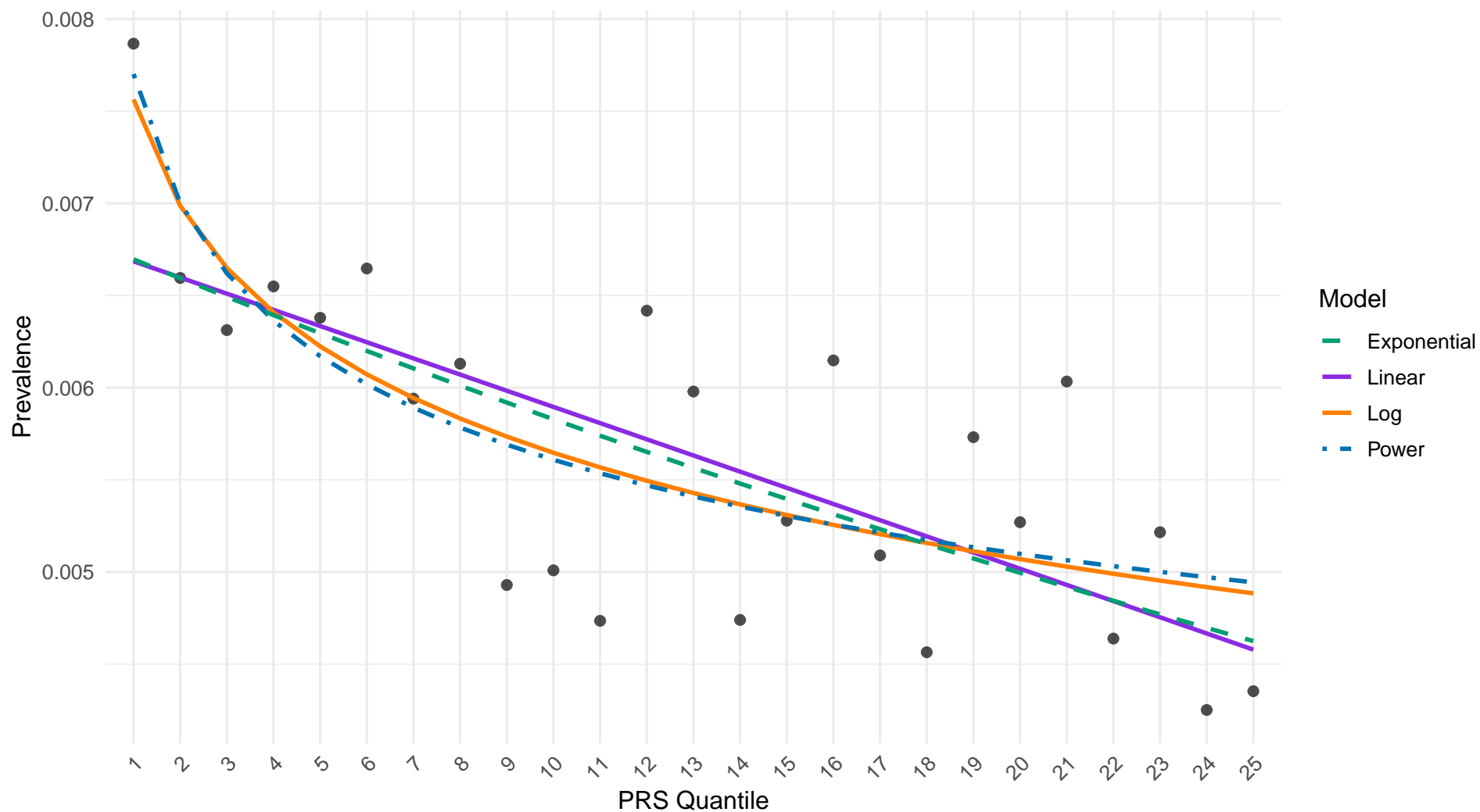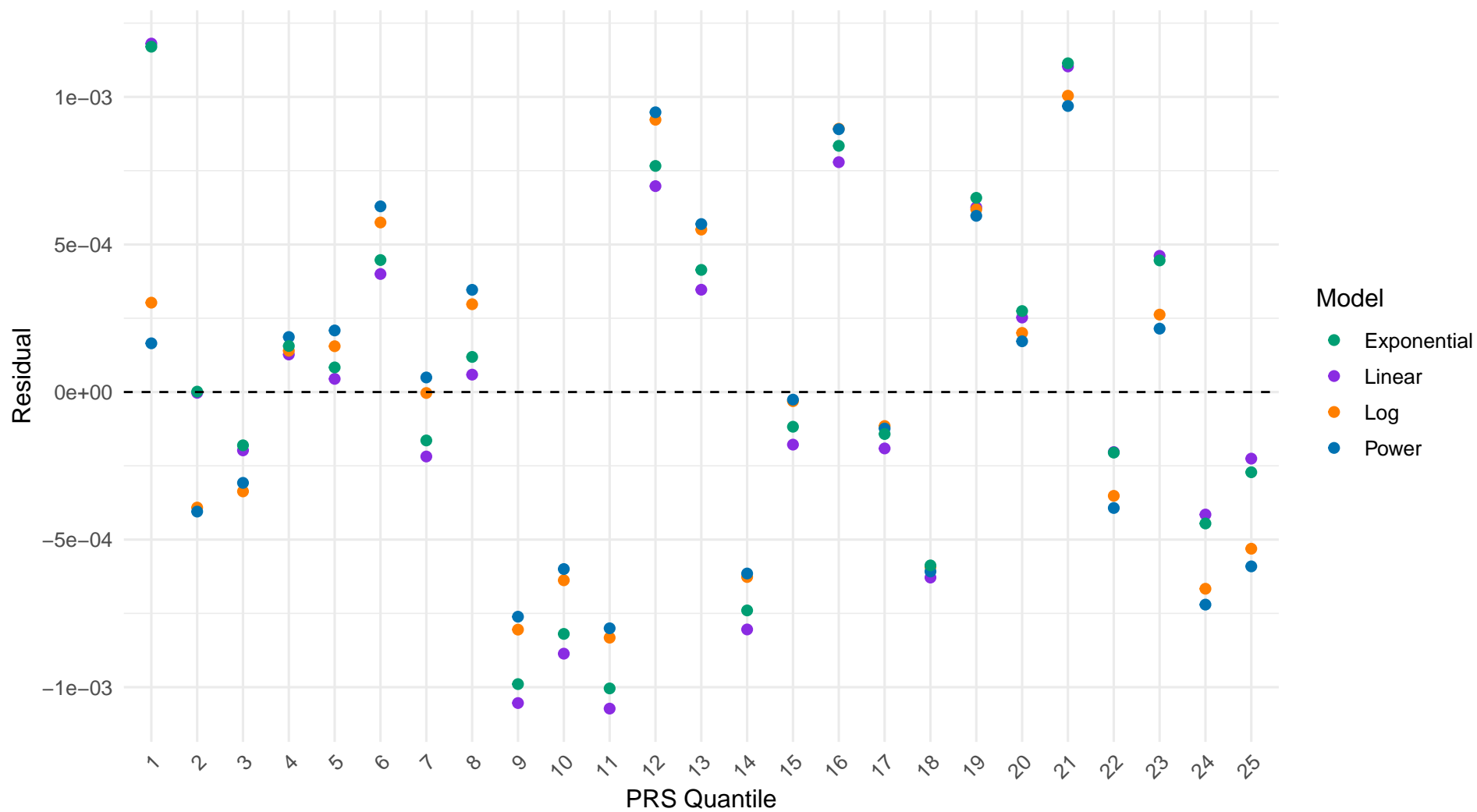Diagnosis: M18

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: M18

Chi2 Test for code: M18

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
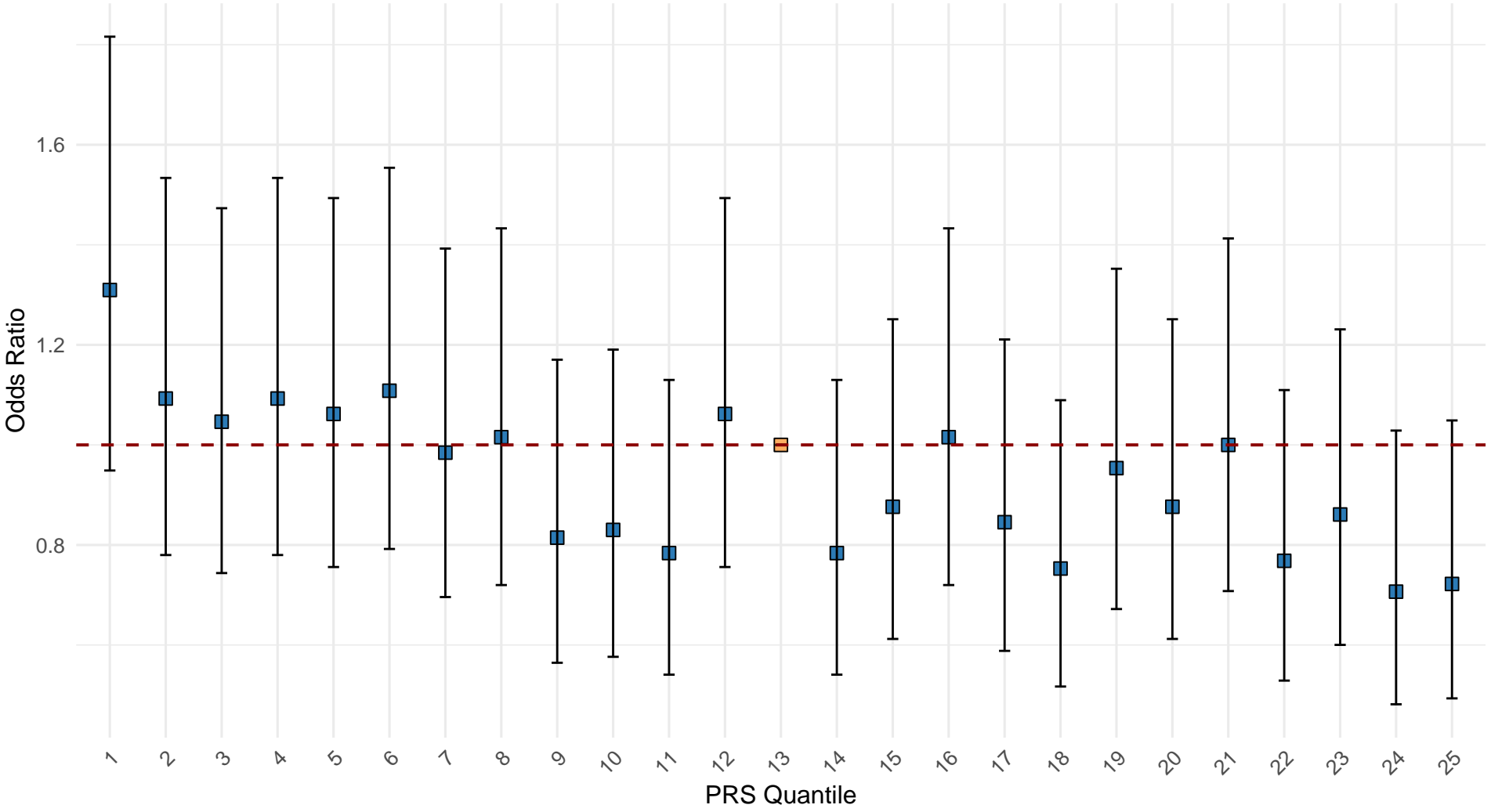Diagnosis: M18

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.31	0.95	1.82
2	1.09	0.78	1.53
3	1.05	0.74	1.47
4	1.09	0.78	1.53
5	1.06	0.76	1.49
6	1.11	0.79	1.55
7	0.98	0.7	1.39
8	1.02	0.72	1.43
9	0.81	0.56	1.17
10	0.83	0.58	1.19
11	0.78	0.54	1.13
12	1.06	0.76	1.49
13	1	1	1
14	0.78	0.54	1.13
15	0.88	0.61	1.25
16	1.02	0.72	1.43
17	0.85	0.59	1.21
18	0.75	0.52	1.09
19	0.95	0.67	1.35
20	0.88	0.61	1.25
21	1	0.71	1.41
22	0.77	0.53	1.11
23	0.86	0.6	1.23
24	0.71	0.48	1.03
25	0.72	0.49	1.05

```
Linear Model Summary for M18

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-1.073e-03 -2.256e-04 -2.670e-06  4.000e-04  1.181e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  6.773e-03  2.605e-04  25.997  < 2e-16 ***
PRS         -8.778e-05  1.753e-05  -5.009 4.57e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0006319 on 23 degrees of freedom
Multiple R-squared:  0.5217,  Adjusted R-squared:  0.5009
F-statistic: 25.09 on 1 and 23 DF,  p-value: 4.567e-05


Log Model Summary for M18

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-8.323e-04 -5.309e-04 -3.240e-06  3.029e-04  1.004e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0075632  0.0003466  21.822  < 2e-16 ***
log(PRS)    -0.0008324  0.0001409  -5.908 5.06e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0005758 on 23 degrees of freedom
Multiple R-squared:  0.6028,  Adjusted R-squared:  0.5855
F-statistic:  34.9 on 1 and 23 DF,  p-value: 5.062e-06


Exponential Model Summary for M18

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.192341 -0.060567  0.000209  0.071725  0.204130

Coefficients:
             Estimate Std. Error  t value Pr(>|t|)
(Intercept) -4.99084    0.04624 -107.935  < 2e-16 ***
PRS         -0.01542    0.00311   -4.957 5.19e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.1121 on 23 degrees of freedom
Multiple R-squared:  0.5165,  Adjusted R-squared:  0.4955
F-statistic: 24.57 on 1 and 23 DF,  p-value: 5.187e-05


Power Model Summary for M18

Formula: prevalence ~ a * PRS^b

Parameters:
    Estimate Std. Error t value Pr(>|t|)
a  0.0077009  0.0003899  19.751 6.35e-16 ***
b -0.1376925  0.0219722  -6.267 2.15e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0005762 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.703e-06
```

Prevalence analysis and model fitting for diagnosis: M19
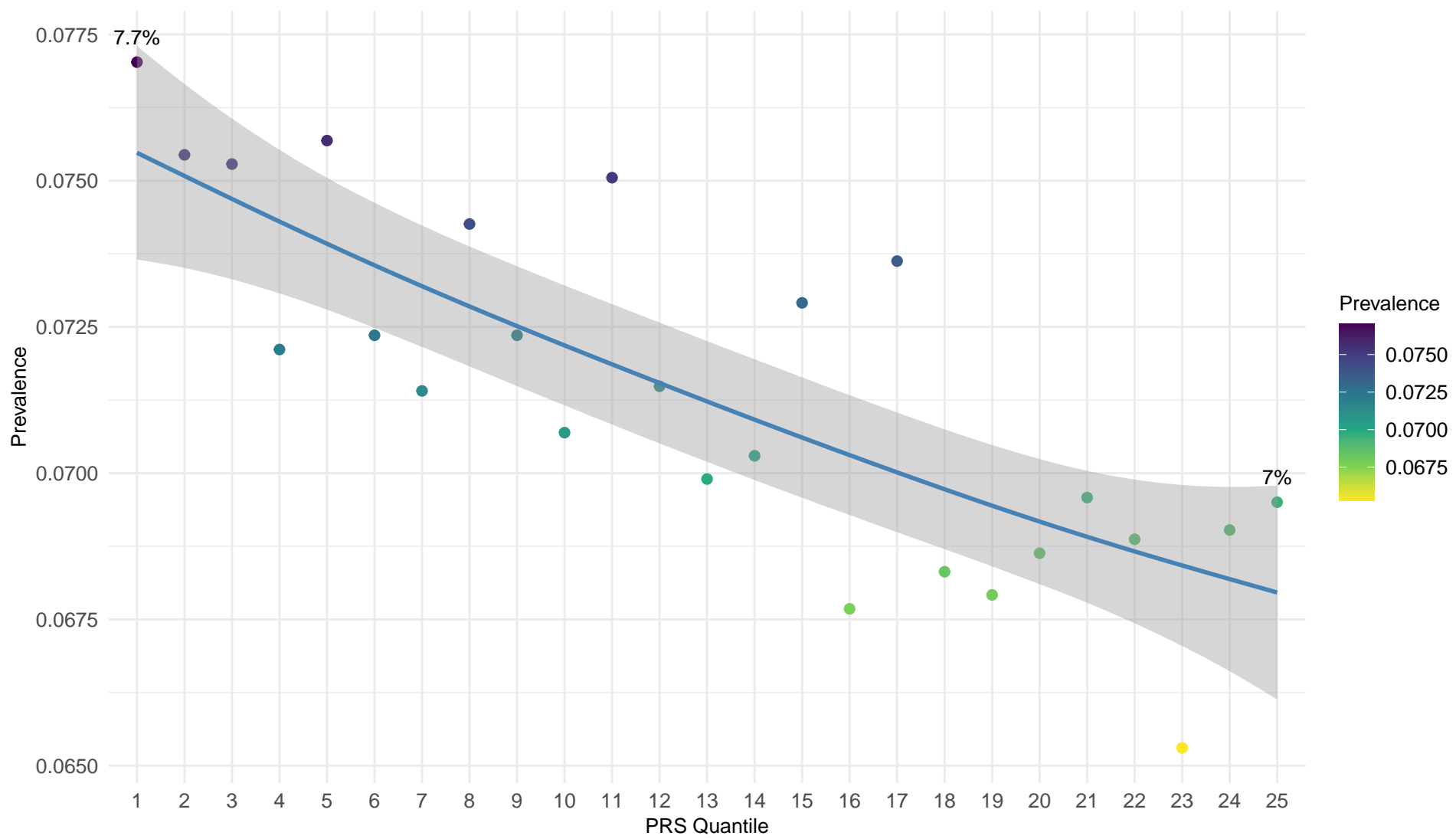
FIGURE 1:Prevalence of M19 across SCZ–PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.08995
2	0.08843
3	0.08818
4	0.08394
5	0.08829
6	0.08428
7	0.08363
8	0.08703
9	0.08491
10	0.08274
11	0.08792
12	0.08389
13	0.08113
14	0.08243
15	0.08519
16	0.07955
17	0.08597
18	0.0803
19	0.07922
20	0.08007
21	0.08149
22	0.08062
23	0.07674
24	0.0805
25	0.08123

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−232.8851	0.0001036589	0.6427228
2	Log	−231.5882	0.0001091784	0.6236988
3	Power	−231.2568	0.0001106349	0.6186787
4	Exponential (lm)	−108.8032	0.0001030755	0.6447336

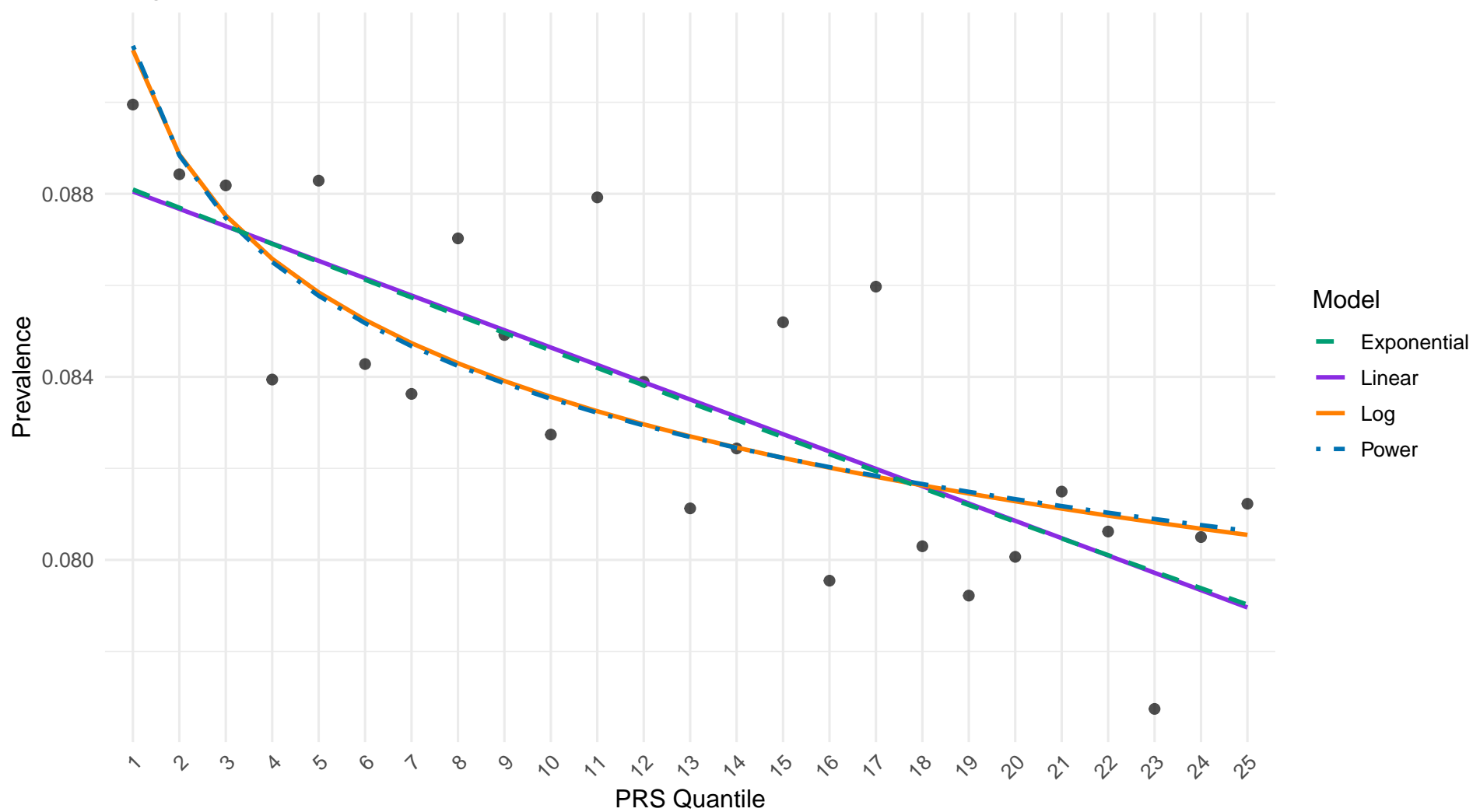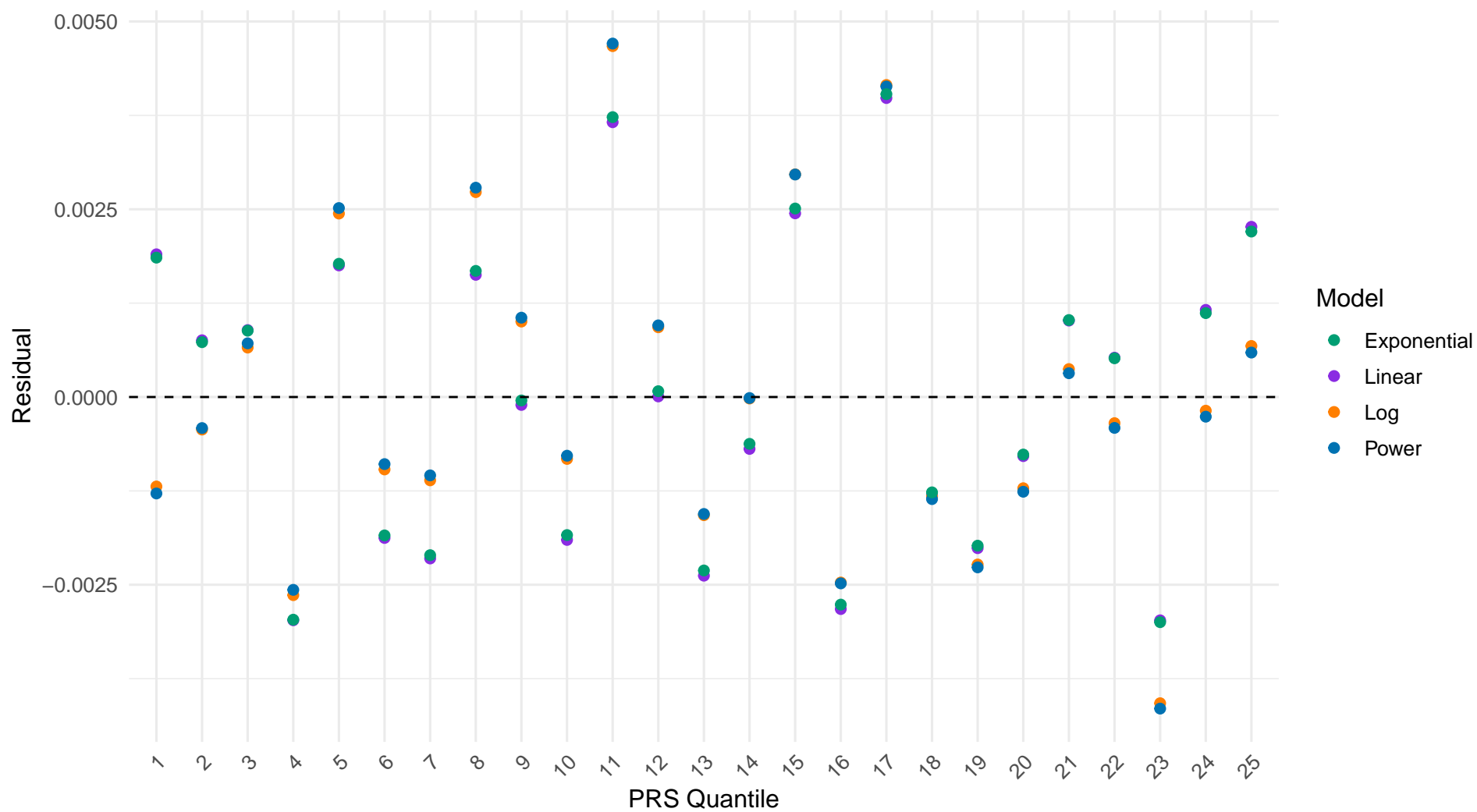FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
Diagnosis: M19

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: M19

Chi2 Test for code: M19

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
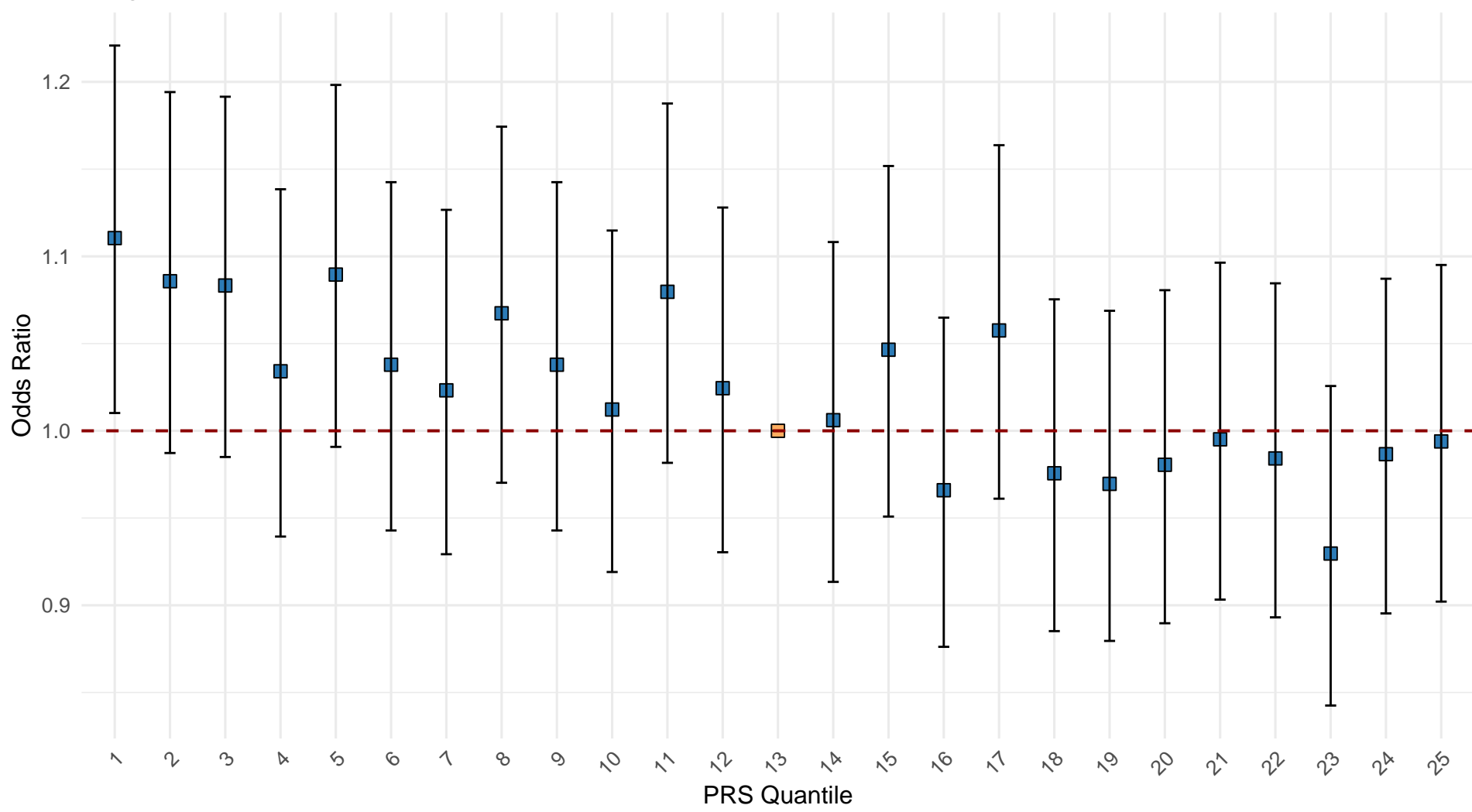Diagnosis: M19

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.11	1.01	1.22
2	1.09	0.99	1.19
3	1.08	0.98	1.19
4	1.03	0.94	1.14
5	1.09	0.99	1.2
6	1.04	0.94	1.14
7	1.02	0.93	1.13
8	1.07	0.97	1.17
9	1.04	0.94	1.14
10	1.01	0.92	1.11
11	1.08	0.98	1.19
12	1.02	0.93	1.13
13	1	1	1
14	1.01	0.91	1.11
15	1.05	0.95	1.15
16	0.97	0.88	1.06
17	1.06	0.96	1.16
18	0.98	0.89	1.08
19	0.97	0.88	1.07
20	0.98	0.89	1.08
21	1	0.9	1.1
22	0.98	0.89	1.08
23	0.93	0.84	1.03
24	0.99	0.9	1.09
25	0.99	0.9	1.1

```
Linear Model Summary for M19

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.0029735 -0.0019029  0.0000078  0.0016266  0.0039809

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  8.843e-02  8.753e-04 101.025  < 2e-16 ***
PRS         -3.787e-04  5.888e-05  -6.432 1.45e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002123 on 23 degrees of freedom
Multiple R-squared:  0.6427, Adjusted R-squared:  0.6272
F-statistic: 41.38 on 1 and 23 DF,  p-value: 1.454e-06


Log Model Summary for M19

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.0040773 -0.0012147 -0.0003478  0.0009288  0.0046723

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0911413  0.0013113  69.503  < 2e-16 ***
log(PRS)    -0.0032914  0.0005331  -6.174 2.68e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002179 on 23 degrees of freedom
Multiple R-squared:  0.6237, Adjusted R-squared:  0.6073
F-statistic: 38.12 on 1 and 23 DF,  p-value: 2.677e-06


Exponential Model Summary for M19

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.038322 -0.021976  0.000921  0.019485  0.048044

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -2.4248211  0.0104695 -231.608  < 2e-16 ***
PRS         -0.0045277  0.0007043   -6.429 1.47e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.02539 on 23 degrees of freedom
Multiple R-squared:  0.6425, Adjusted R-squared:  0.6269
F-statistic: 41.33 on 1 and 23 DF,  p-value: 1.466e-06


Power Model Summary for M19

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.091234   0.001367  66.721  < 2e-16 ***
b -0.038369   0.006193  -6.196 2.54e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002193 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.579e-06
```

Prevalence analysis and model fitting for diagnosis: M23
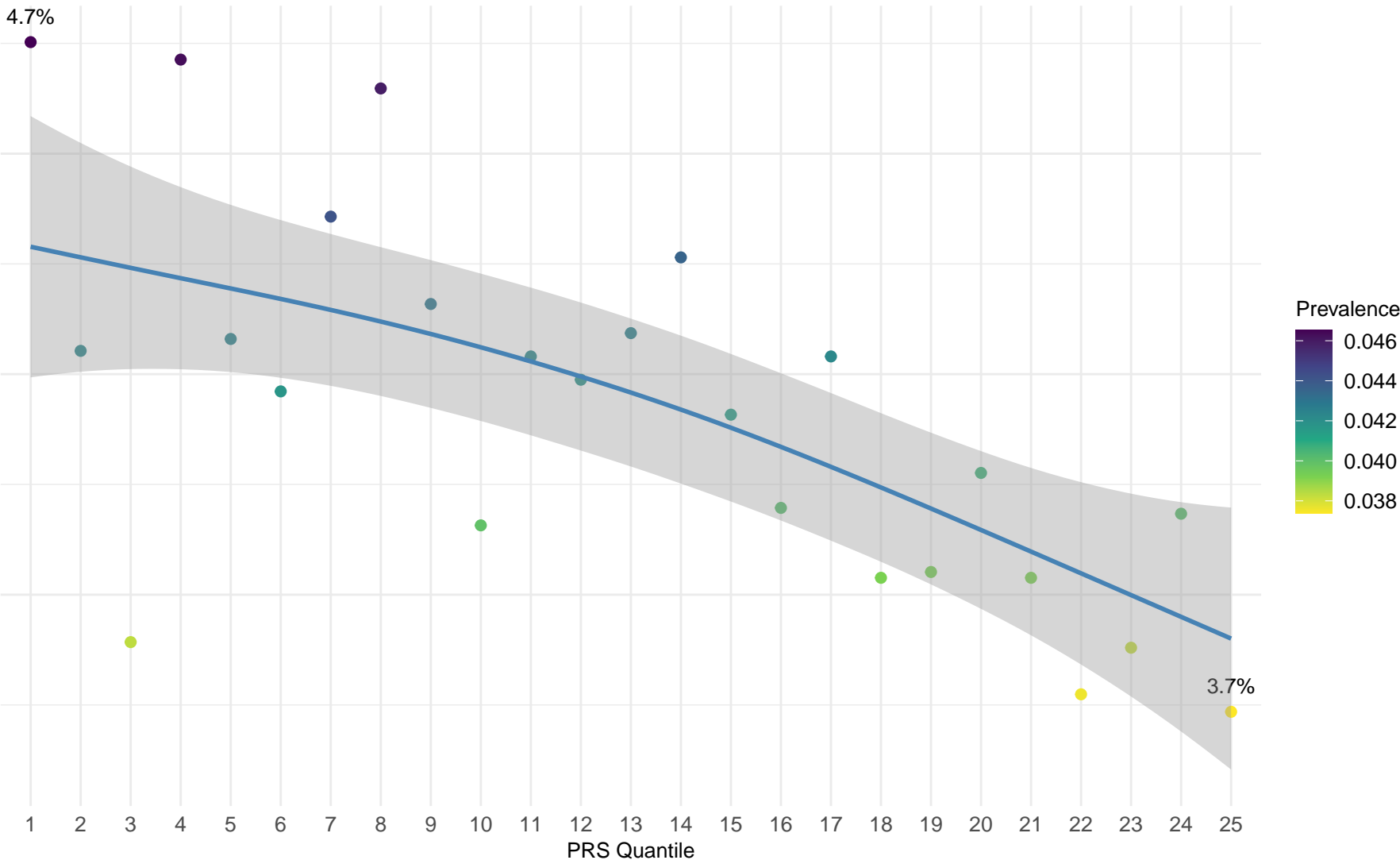
FIGURE 1:Prevalence of M23 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.05432
2	0.0496
3	0.04493
4	0.05387
5	0.04955
6	0.04865
7	0.0517
8	0.05378
9	0.05041
10	0.04675
11	0.04948
12	0.0492
13	0.04939
14	0.05112
15	0.04843
16	0.04722
17	0.04932
18	0.04611
19	0.04585
20	0.04743
21	0.04594
22	0.04407
23	0.04498
24	0.04677
25	0.04372

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−230.81105	0.0001126254	0.4695649
2	Log	−226.36381	0.0001345528	0.3662928
3	Power	−226.13049	0.0001358145	0.3603507
4	Exponential (lm)	−79.91538	0.0001136384	0.4647939

FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
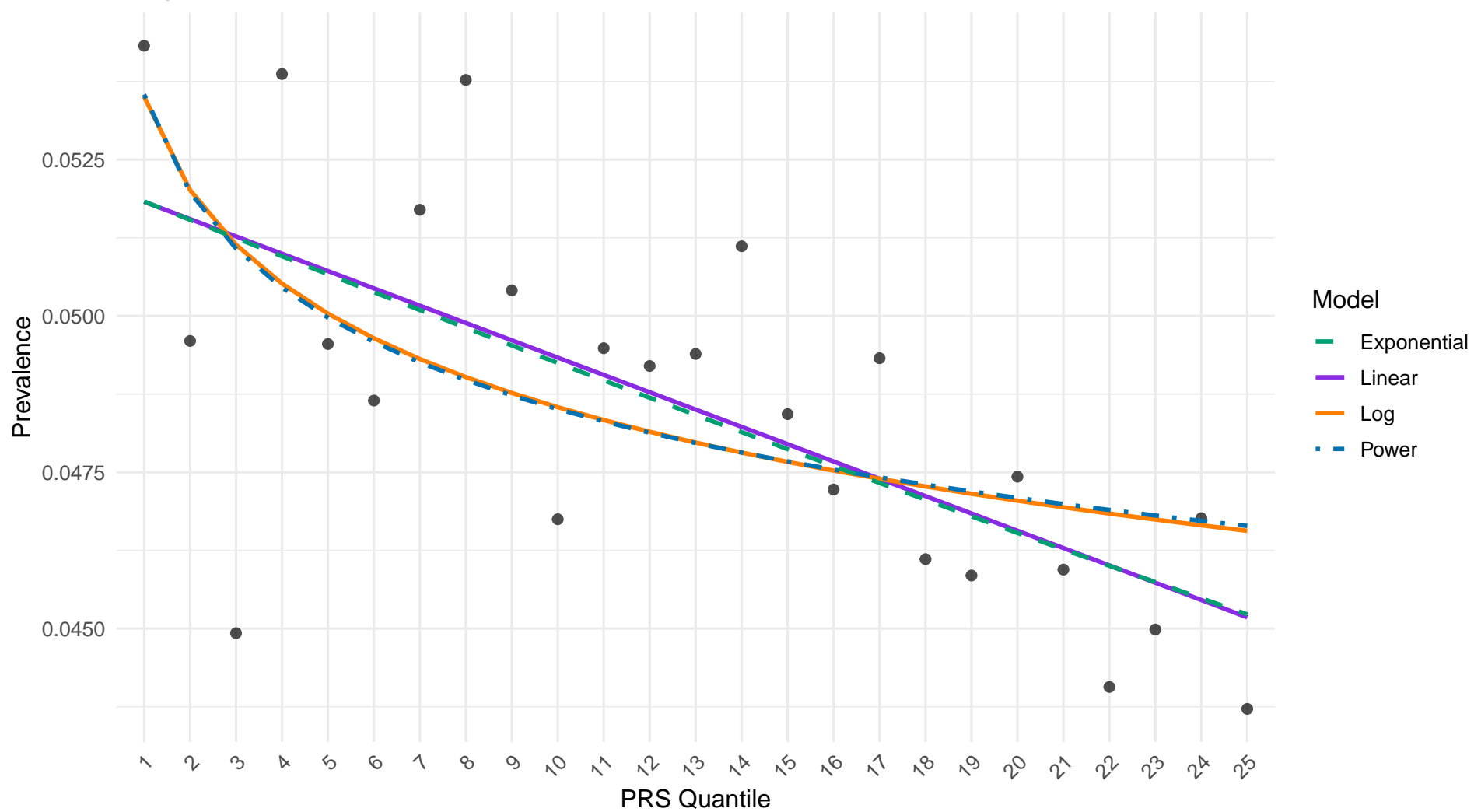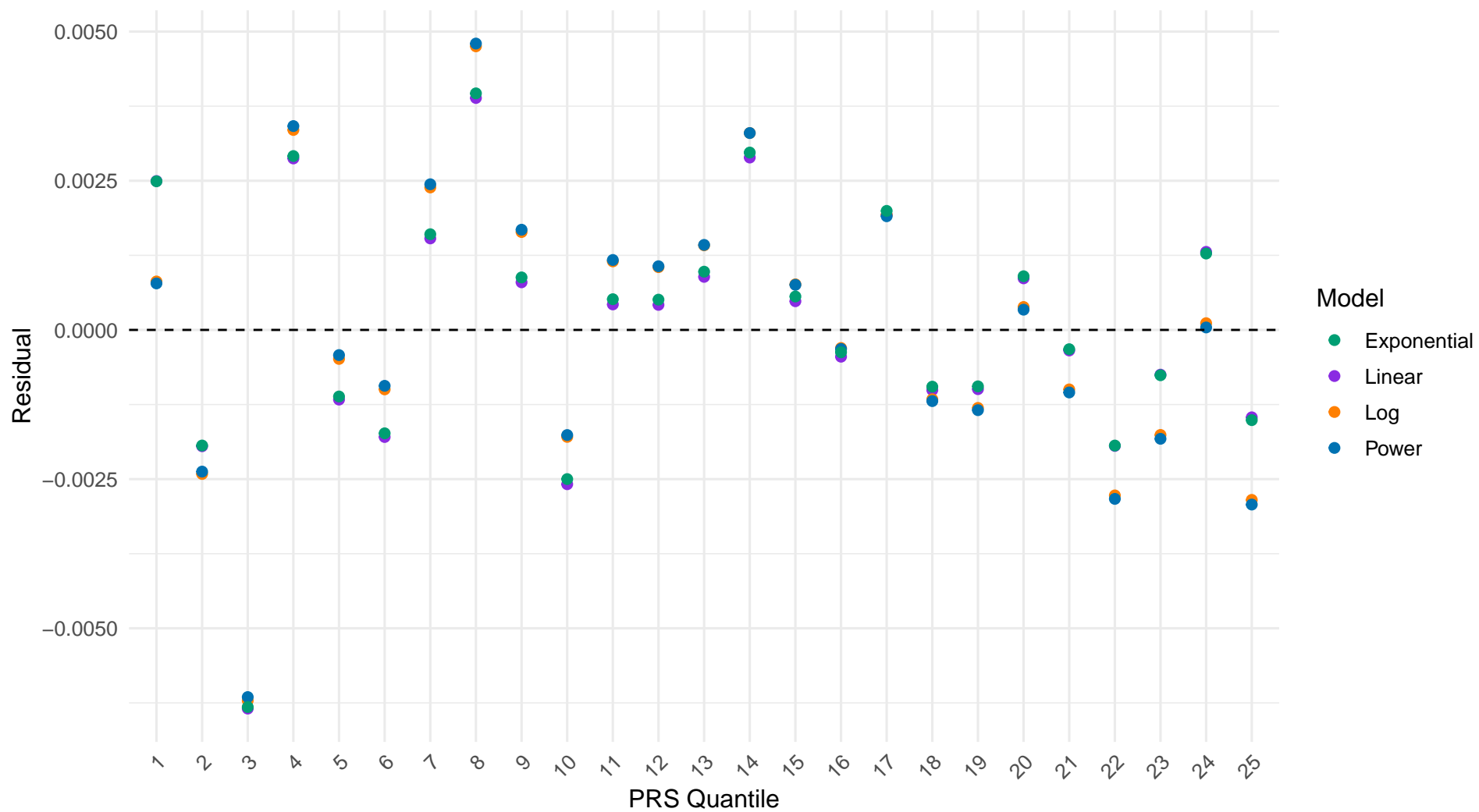Diagnosis: M23

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: M23

Chi2 Test for code: M23

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
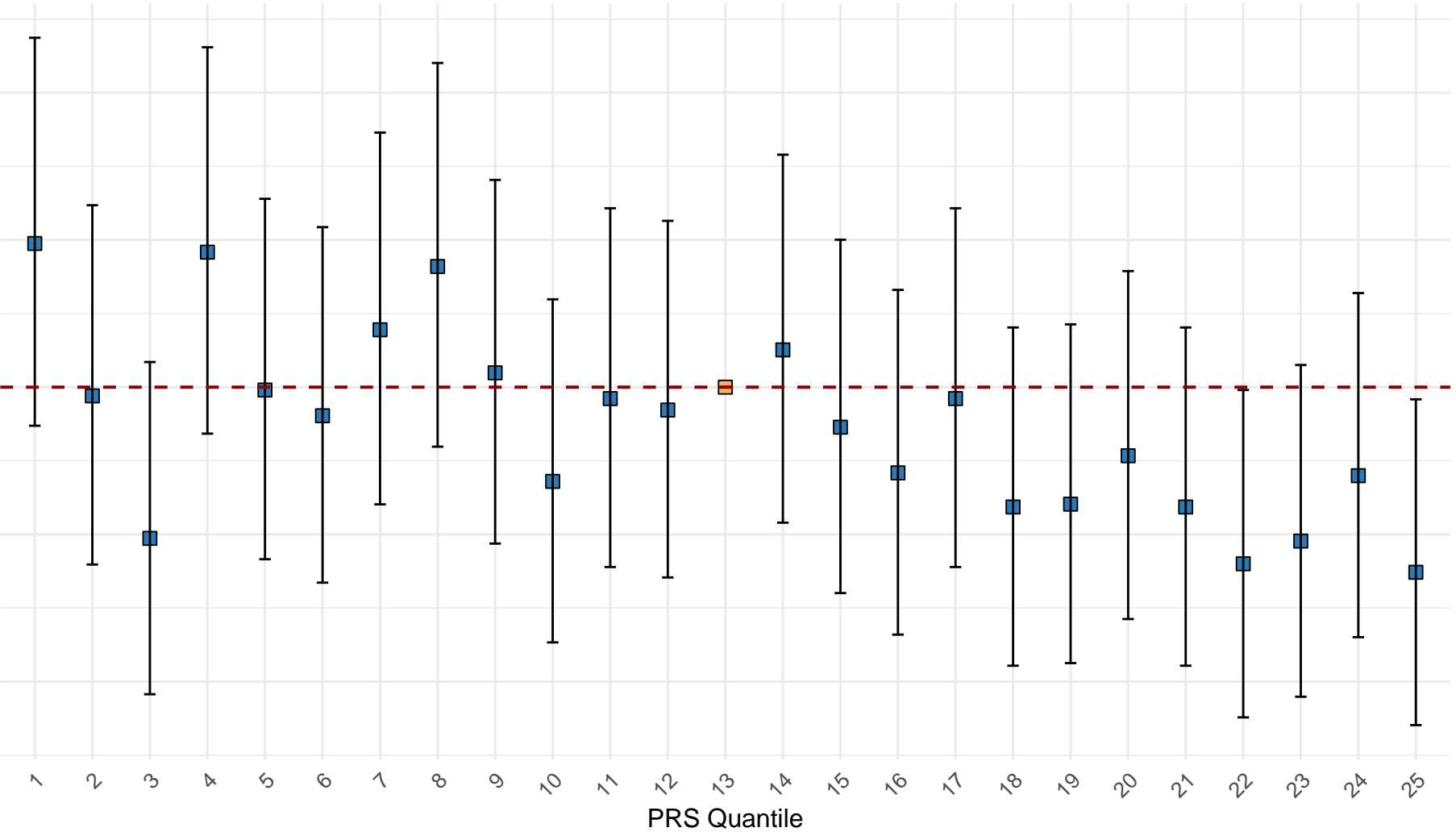Diagnosis: M23

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.1	0.97	1.24
2	0.99	0.88	1.12
3	0.9	0.79	1.02
4	1.09	0.97	1.23
5	1	0.88	1.13
6	0.98	0.87	1.11
7	1.04	0.92	1.17
8	1.08	0.96	1.22
9	1.01	0.89	1.14
10	0.94	0.83	1.06
11	0.99	0.88	1.12
12	0.98	0.87	1.11
13	1	1	1
14	1.03	0.91	1.16
15	0.97	0.86	1.1
16	0.94	0.83	1.07
17	0.99	0.88	1.12
18	0.92	0.81	1.04
19	0.92	0.81	1.04
20	0.95	0.84	1.08
21	0.92	0.81	1.04
22	0.88	0.78	1
23	0.9	0.79	1.02
24	0.94	0.83	1.06
25	0.87	0.77	0.99

```
Linear Model Summary for M23

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median         3Q        Max
-0.0063458 -0.0011674  0.0004196  0.0013080  0.0038872

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  5.210e-02  9.124e-04  57.107  < 2e-16 ***
PRS         -2.769e-04  6.137e-05  -4.512 0.000157 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002213 on 23 degrees of freedom
Multiple R-squared:  0.4696, Adjusted R-squared:  0.4465
F-statistic: 20.36 on 1 and 23 DF,  p-value: 0.000157


Log Model Summary for M23

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q      Median         3Q        Max
-0.0062122 -0.0013070  0.0001128  0.0014176  0.0047525

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0535099  0.0014558  36.757  < 2e-16 ***
log(PRS)    -0.0021578  0.0005918  -3.646  0.00135 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002419 on 23 degrees of freedom
Multiple R-squared:  0.3663, Adjusted R-squared:  0.3387
F-statistic: 13.29 on 1 and 23 DF,  p-value: 0.001348


Exponential Model Summary for M23

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min        1Q    Median        3Q       Max
-0.13159  -0.02226   0.01037   0.02775   0.07658

Coefficients:
              Estimate Std. Error   t value Pr(>|t|)
(Intercept) -2.954086   0.018657  -158.337  < 2e-16 ***
PRS         -0.005678   0.001255    -4.525 0.000152 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.04525 on 23 degrees of freedom
Multiple R-squared:  0.4709, Adjusted R-squared:  0.4479
F-statistic: 20.47 on 1 and 23 DF,  p-value: 0.0001522


Power Model Summary for M23

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.053542   0.001521  35.200  < 2e-16 ***
b -0.042862   0.011761  -3.644  0.00135 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.00243 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 2.341e-07
```

Prevalence analysis and model fitting for diagnosis: M65
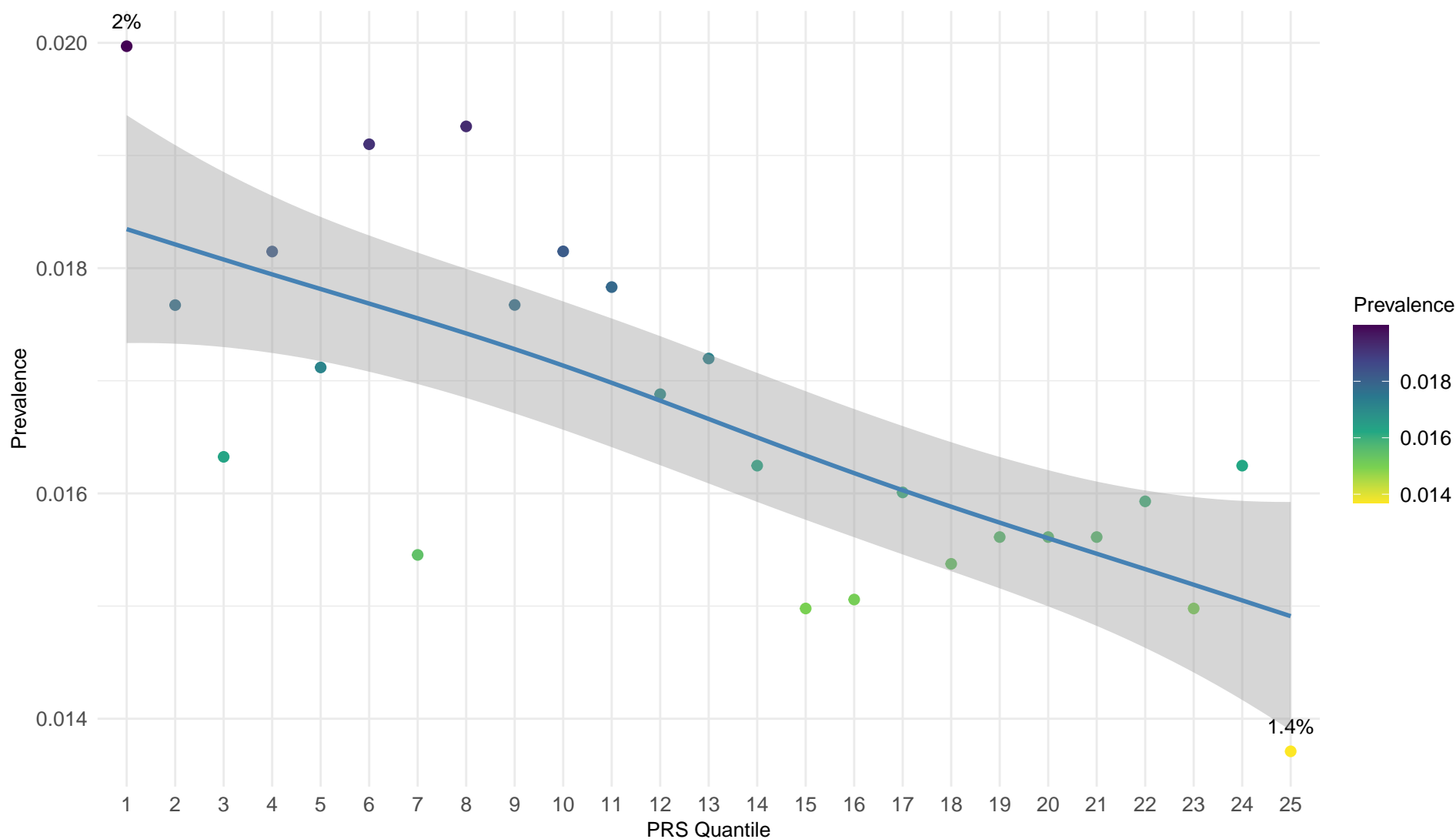
FIGURE 1:Prevalence of M65 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.02332
2	0.02071
3	0.01912
4	0.02112
5	0.01997
6	0.02225
7	0.0181
8	0.02257
9	0.02074
10	0.02124
11	0.02089
12	0.01981
13	0.01996
14	0.01905
15	0.0175
16	0.0177
17	0.01869
18	0.01807
19	0.01821
20	0.01821
21	0.01828
22	0.01865
23	0.0176
24	0.01895
25	0.01602

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−260.62168	3.418005e−05	0.5527829
2	Log	−257.55293	3.864402e−05	0.4943756
3	Power	−257.09178	3.936346e−05	0.4849623
4	Exponential (lm)	−64.42234	3.429299e−05	0.5513052

FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
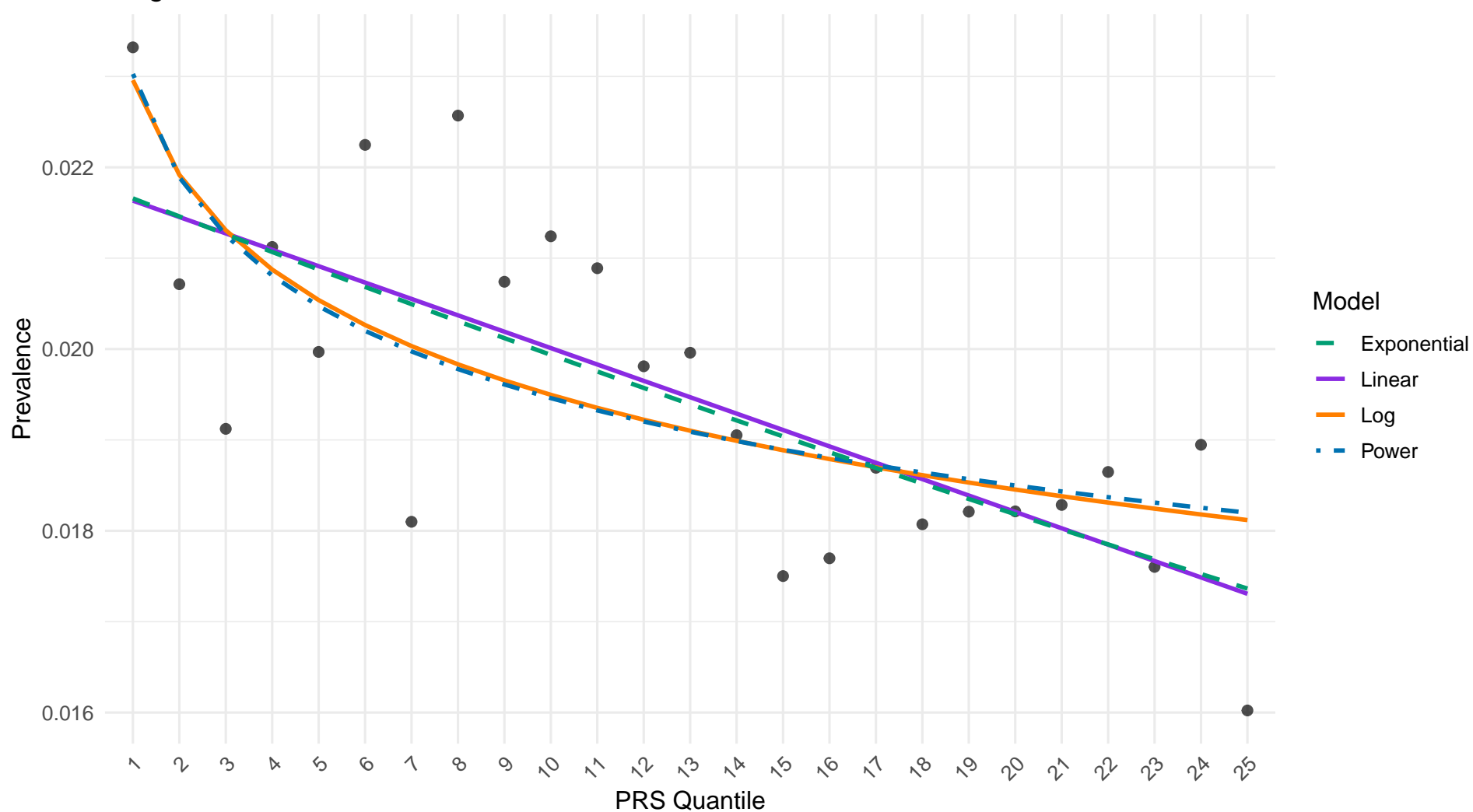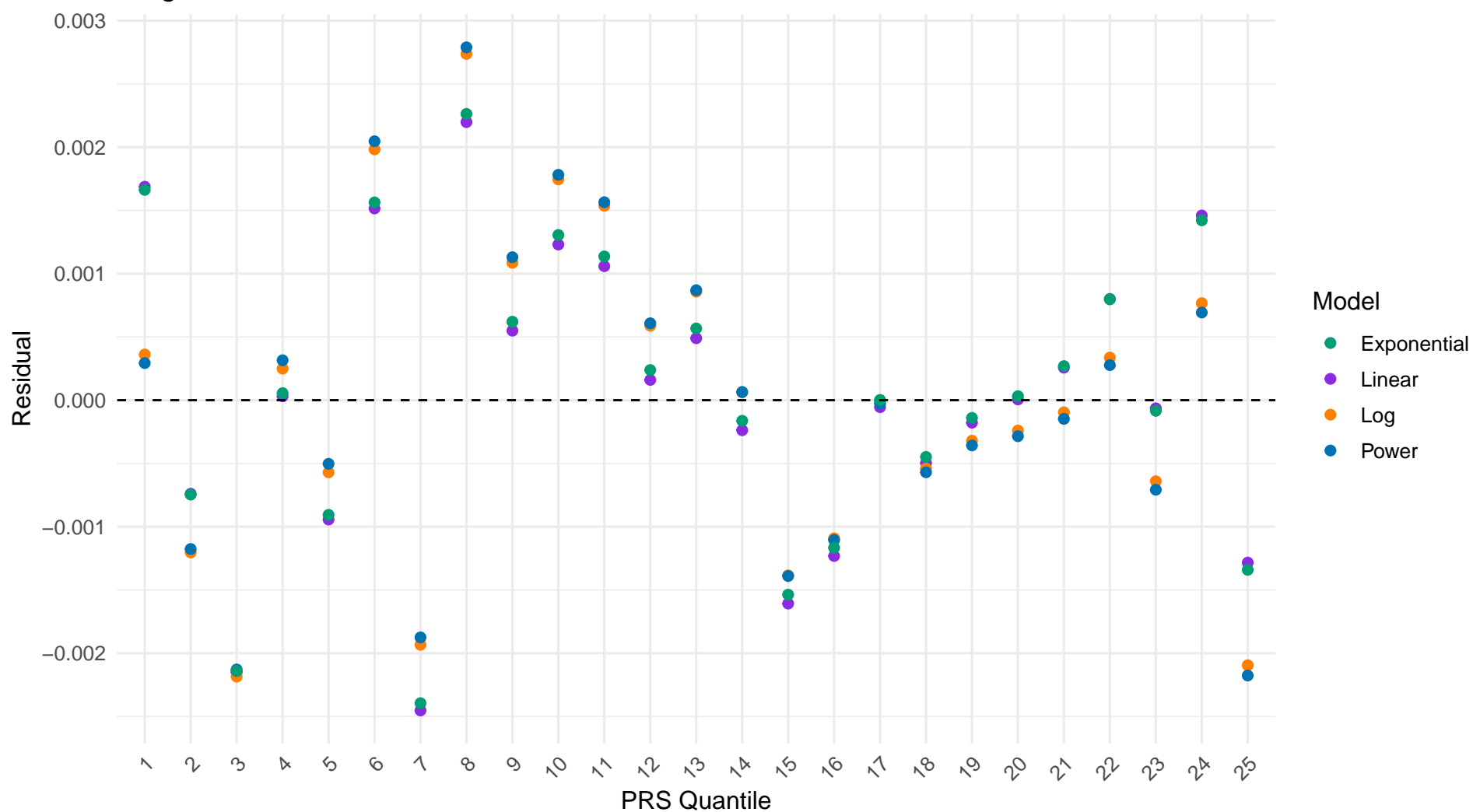Diagnosis: M65

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: M65

Chi2 Test for code: M65

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
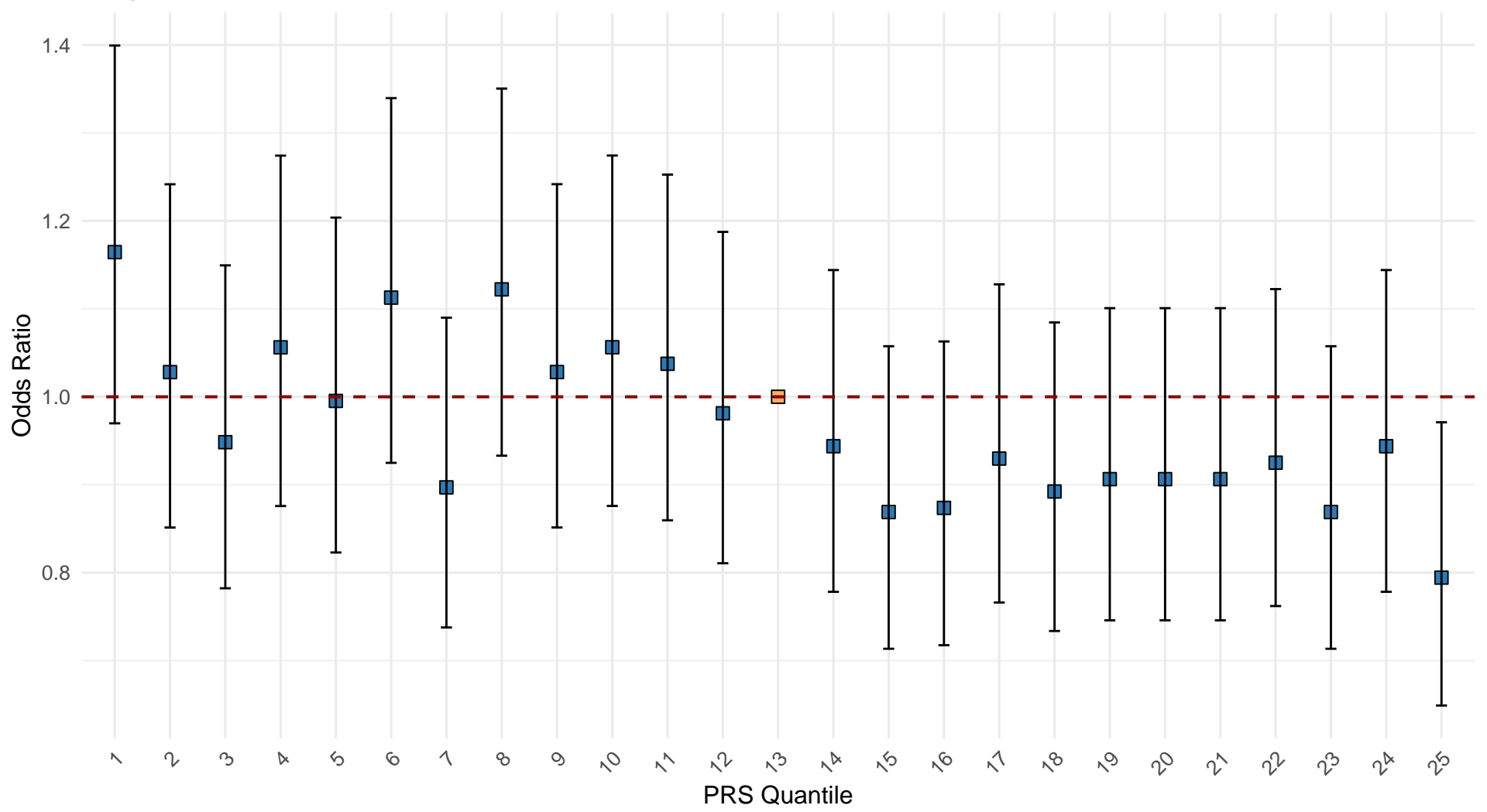Diagnosis: M65

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.16	0.97	1.4
2	1.03	0.85	1.24
3	0.95	0.78	1.15
4	1.06	0.88	1.27
5	1	0.82	1.2
6	1.11	0.92	1.34
7	0.9	0.74	1.09
8	1.12	0.93	1.35
9	1.03	0.85	1.24
10	1.06	0.88	1.27
11	1.04	0.86	1.25
12	0.98	0.81	1.19
13	1	1	1
14	0.94	0.78	1.14
15	0.87	0.71	1.06
16	0.87	0.72	1.06
17	0.93	0.77	1.13
18	0.89	0.73	1.08
19	0.91	0.75	1.1
20	0.91	0.75	1.1
21	0.91	0.75	1.1
22	0.93	0.76	1.12
23	0.87	0.71	1.06
24	0.94	0.78	1.14
25	0.79	0.65	0.97

```
Linear Model Summary for M65

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-2.452e-03 -7.396e-04  5.760e-06  7.999e-04  2.198e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  2.181e-02  5.026e-04  43.399  < 2e-16 ***
PRS         -1.803e-04  3.381e-05  -5.332 2.06e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001219 on 23 degrees of freedom
Multiple R-squared:  0.5528,    Adjusted R-squared:  0.5333
F-statistic: 28.43 on 1 and 23 DF,  p-value: 2.055e-05


Log Model Summary for M65

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-2.185e-03 -6.410e-04 -4.940e-06  7.668e-04  2.737e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0229594  0.0007802  29.429  < 2e-16 ***
log(PRS)    -0.0015040  0.0003171  -4.742 8.85e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001296 on 23 degrees of freedom
Multiple R-squared:  0.4944,    Adjusted R-squared:  0.4724
F-statistic: 22.49 on 1 and 23 DF,  p-value: 8.851e-05


Exponential Model Summary for M65

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.124275 -0.035397  0.001737  0.043680  0.105645

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.823164   0.025434 -150.318  < 2e-16 ***
PRS         -0.009208   0.001711   -5.382 1.82e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.06169 on 23 degrees of freedom
Multiple R-squared:  0.5574,    Adjusted R-squared:  0.5381
F-statistic: 28.96 on 1 and 23 DF,  p-value: 1.818e-05


Power Model Summary for M65

Formula: prevalence ~ a * PRS^b

Parameters:
    Estimate Std. Error t value Pr(>|t|)
a  0.0230274  0.0008406   27.39  < 2e-16 ***
b -0.0731009  0.0153253   -4.77 8.26e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001308 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 2.74e-07
```

Prevalence analysis and model fitting for diagnosis: M75
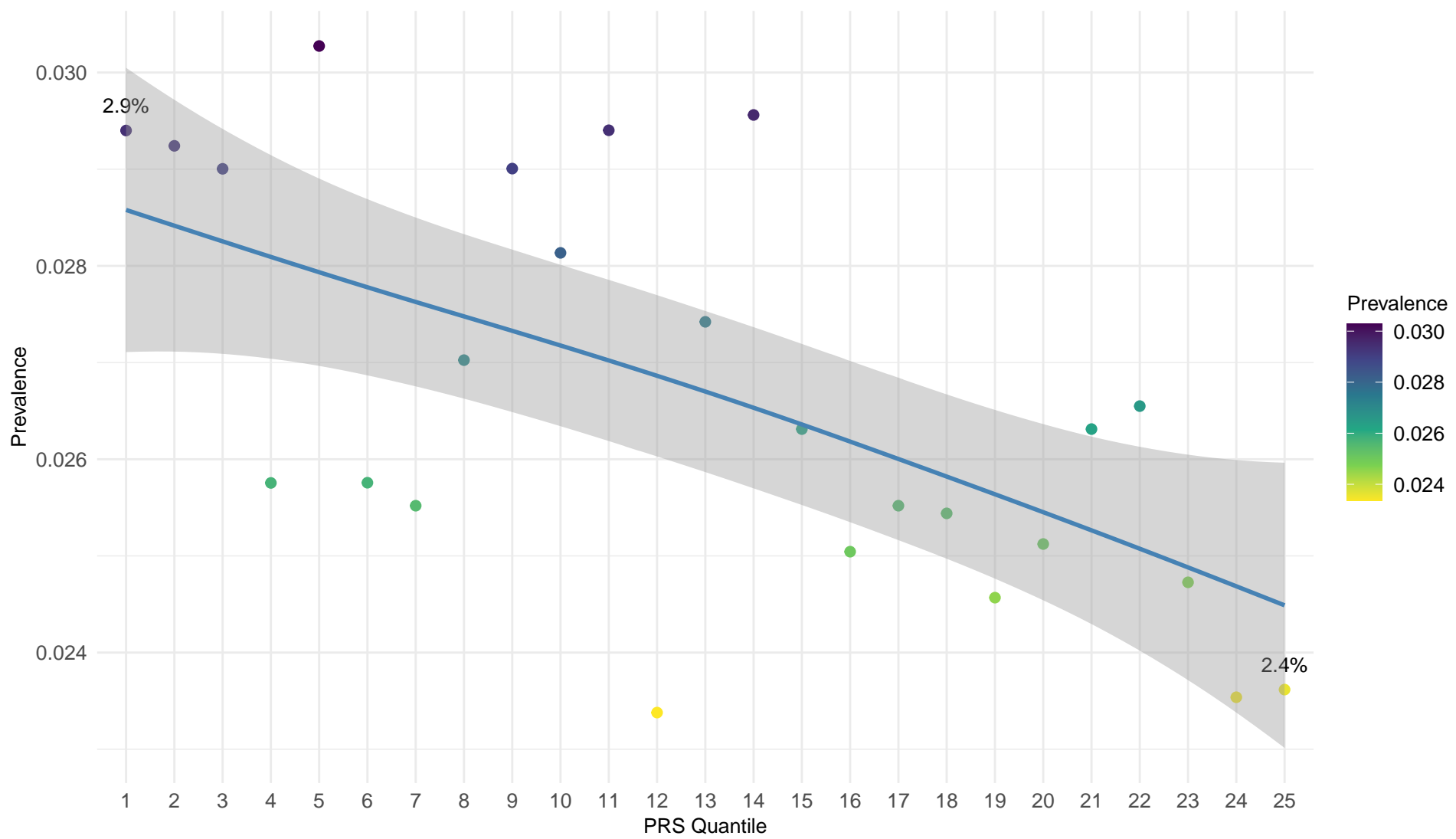

FIGURE 1:Prevalence of M75 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.03433
2	0.03427
3	0.03397
4	0.02998
5	0.03531
6	0.03
7	0.02989
8	0.03167
9	0.03404
10	0.03293
11	0.03444
12	0.02744
13	0.03182
14	0.03467
15	0.03074
16	0.02943
17	0.0298
18	0.0299
19	0.02866
20	0.02931
21	0.03081
22	0.03108
23	0.02906
24	0.02745
25	0.0276

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−237.72734	8.540594e−05	0.4135684
2	Log	−235.73337	9.249683e−05	0.3648795
3	Power	−235.50434	9.334812e−05	0.3590343
4	Exponential (lm)	−64.52799	8.574200e−05	0.4112609

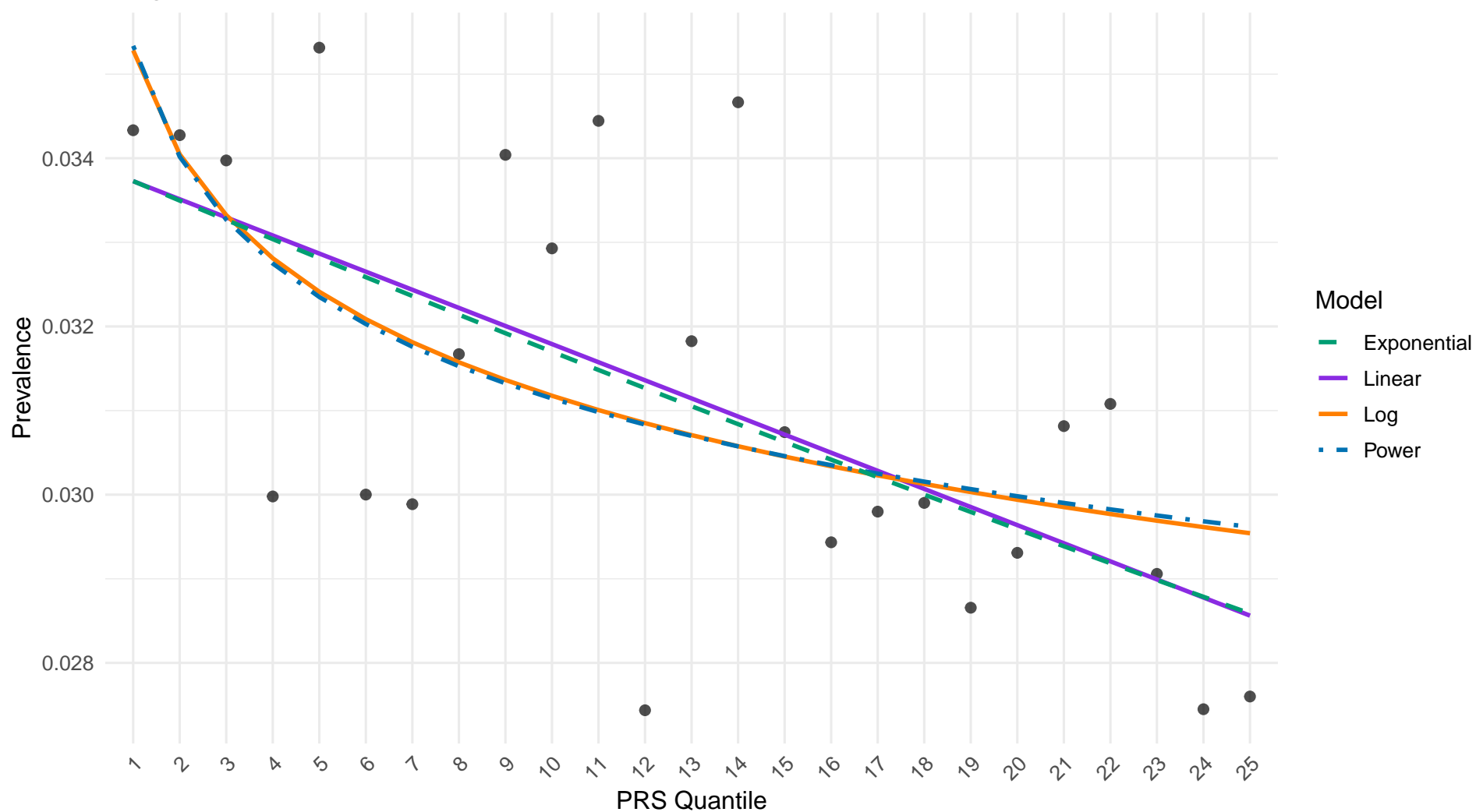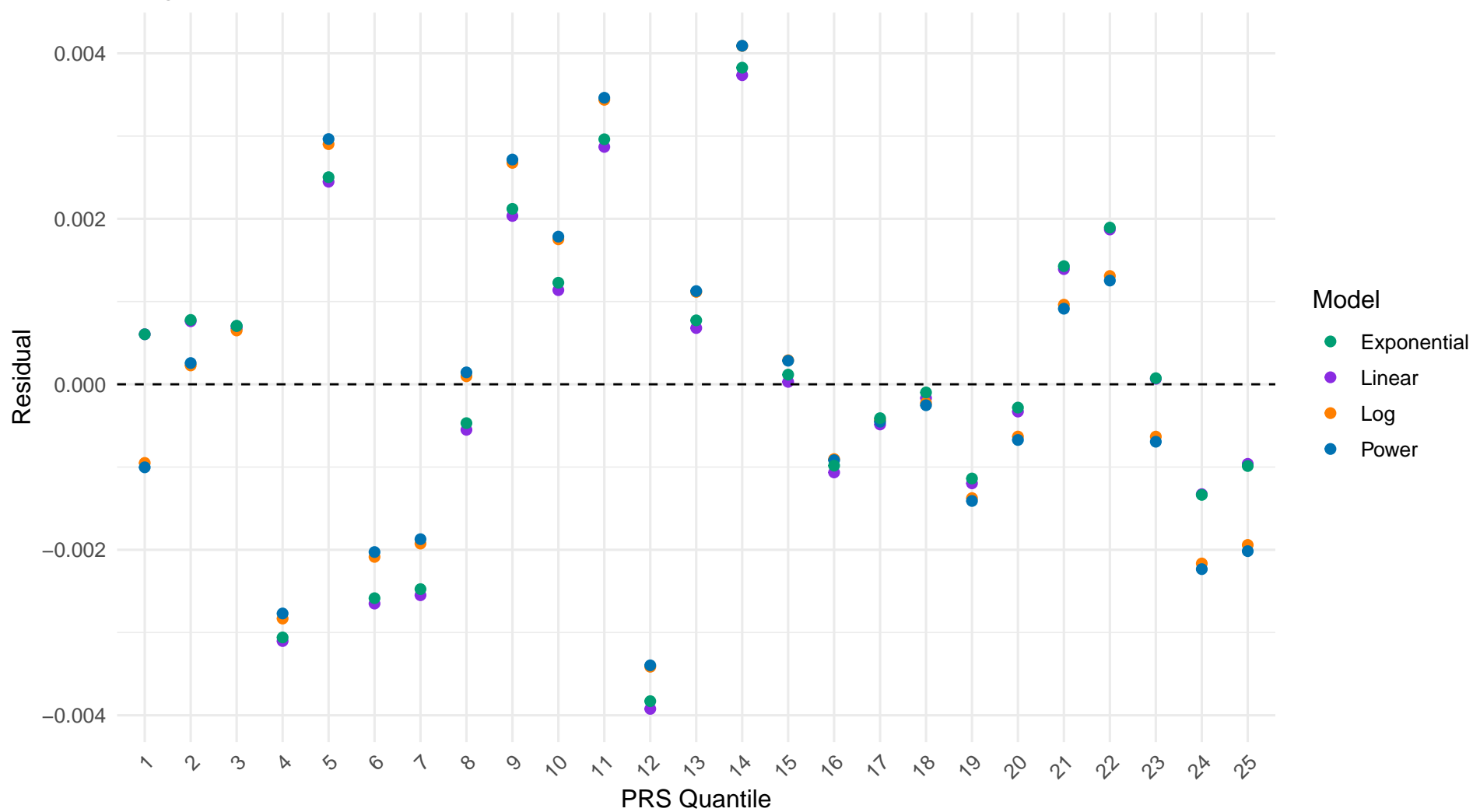FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
Diagnosis: M75

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: M75

Chi2 Test for code: M75

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
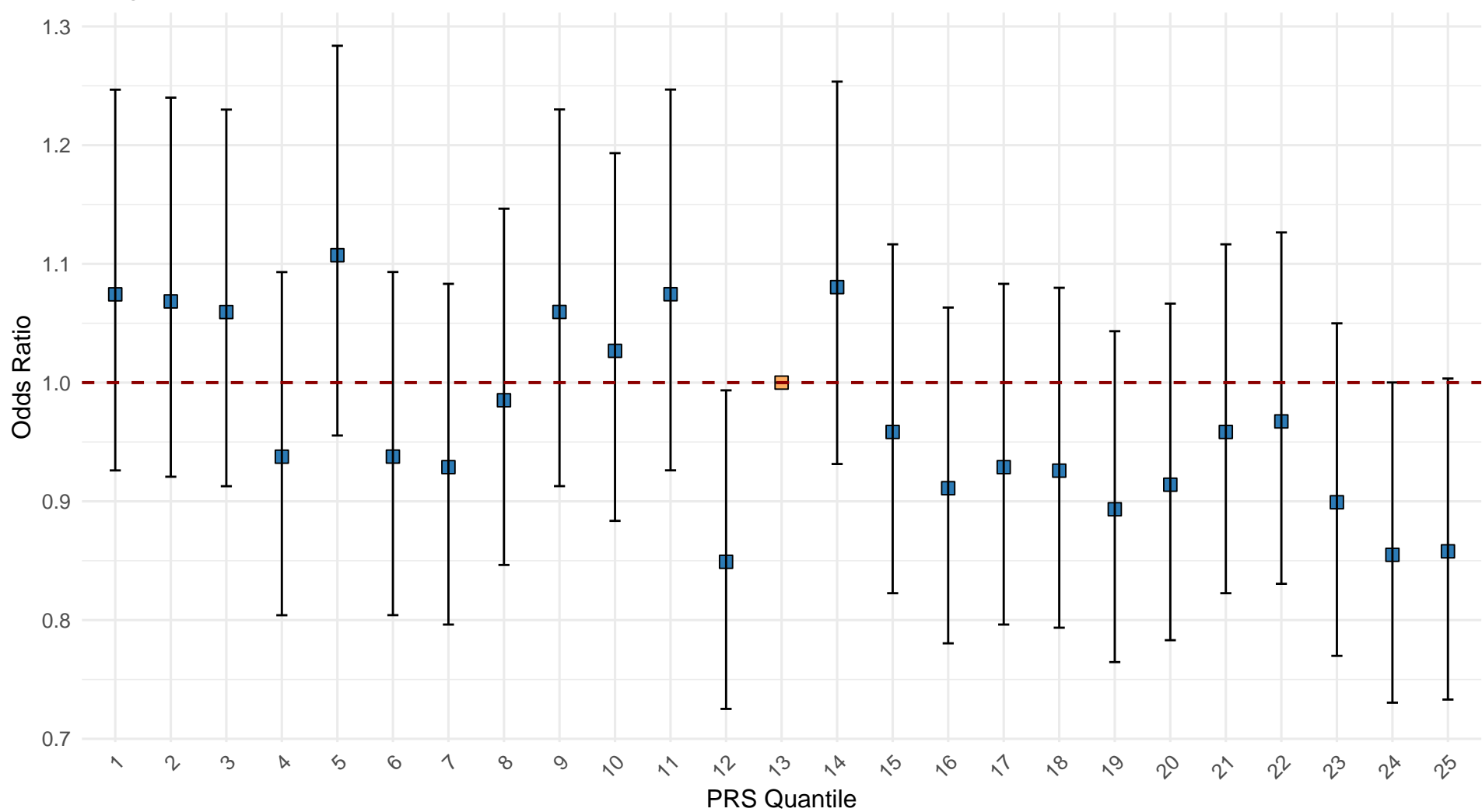Diagnosis: M75

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.07	0.93	1.25
2	1.07	0.92	1.24
3	1.06	0.91	1.23
4	0.94	0.8	1.09
5	1.11	0.96	1.28
6	0.94	0.8	1.09
7	0.93	0.8	1.08
8	0.99	0.85	1.15
9	1.06	0.91	1.23
10	1.03	0.88	1.19
11	1.07	0.93	1.25
12	0.85	0.73	0.99
13	1	1	1
14	1.08	0.93	1.25
15	0.96	0.82	1.12
16	0.91	0.78	1.06
17	0.93	0.8	1.08
18	0.93	0.79	1.08
19	0.89	0.76	1.04
20	0.91	0.78	1.07
21	0.96	0.82	1.12
22	0.97	0.83	1.13
23	0.9	0.77	1.05
24	0.85	0.73	1
25	0.86	0.73	1

```
Linear Model Summary for M75

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0039232 -0.0010653  0.0000294  0.0011379  0.0037360

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.394e-02  7.945e-04  42.721  < 2e-16 ***
PRS         -2.153e-04  5.345e-05  -4.027 0.000525 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001927 on 23 degrees of freedom
Multiple R-squared:  0.4136, Adjusted R-squared:  0.3881
F-statistic: 16.22 on 1 and 23 DF,  p-value: 0.0005255


Log Model Summary for M75

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0034141 -0.0013752 -0.0002254  0.0011168  0.0040896

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0352829  0.0012070  29.232  < 2e-16 ***
log(PRS)    -0.0017836  0.0004907  -3.635  0.00139 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002005 on 23 degrees of freedom
Multiple R-squared:  0.3649, Adjusted R-squared:  0.3373
F-statistic: 13.21 on 1 and 23 DF,  p-value: 0.001386


Exponential Model Summary for M75

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.130664 -0.035158  0.002545  0.038005  0.116974

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.382532   0.025380 -133.274  < 2e-16 ***
PRS         -0.006890   0.001707   -4.035 0.000515 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.06156 on 23 degrees of freedom
Multiple R-squared:  0.4145, Adjusted R-squared:  0.3891
F-statistic: 16.29 on 1 and 23 DF,  p-value: 0.0005151


Power Model Summary for M75

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.035336   0.001274  27.728  < 2e-16 ***
b -0.054853   0.015012  -3.654  0.00132 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002015 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 9.927e-06
```

Prevalence analysis and model fitting for diagnosis: M81
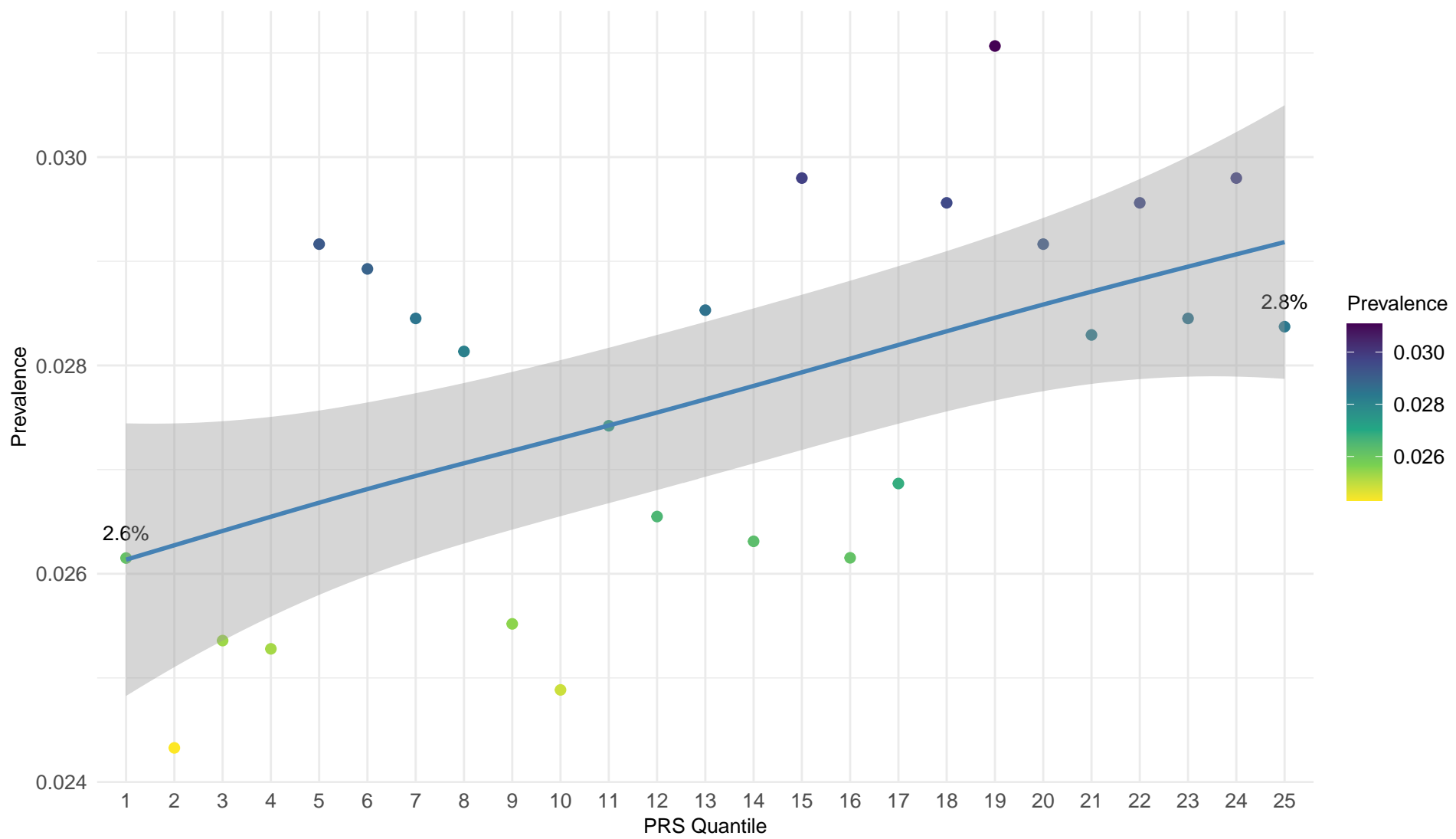

FIGURE 1:Prevalence of M81 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.03054
2	0.02852
3	0.0297
4	0.02943
5	0.03402
6	0.03369
7	0.03332
8	0.03297
9	0.02995
10	0.02913
11	0.03212
12	0.03116
13	0.03311
14	0.03086
15	0.03482
16	0.03074
17	0.03137
18	0.03475
19	0.03624
20	0.03402
21	0.03314
22	0.0346
23	0.03344
24	0.03475
25	0.03316

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−243.11110	6.885931e−05	0.3533183
2	Power	−242.60551	7.026607e−05	0.3401070
3	Log	−242.47275	7.064021e−05	0.3365933
4	Exponential (lm)	−71.24134	6.901783e−05	0.3518296

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
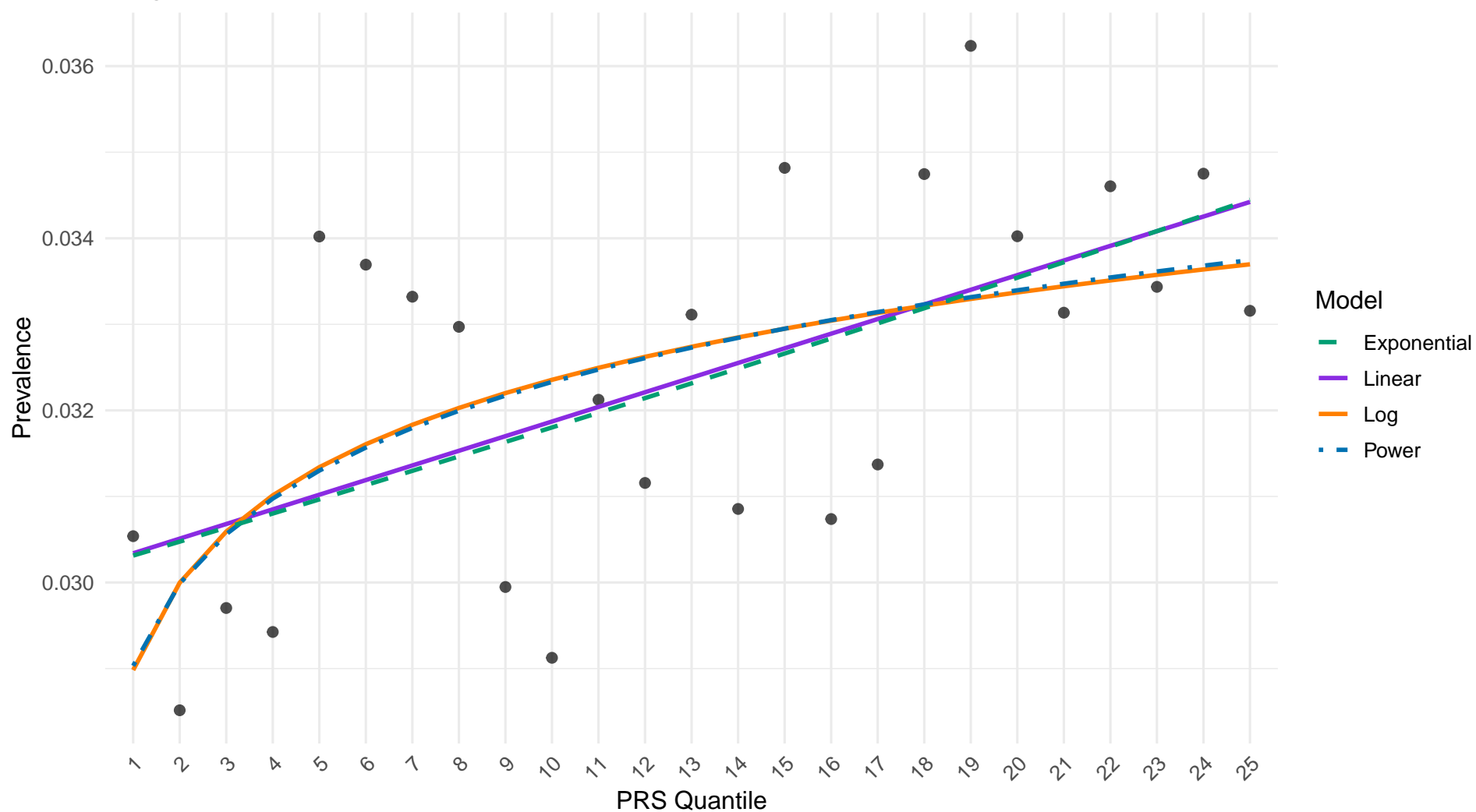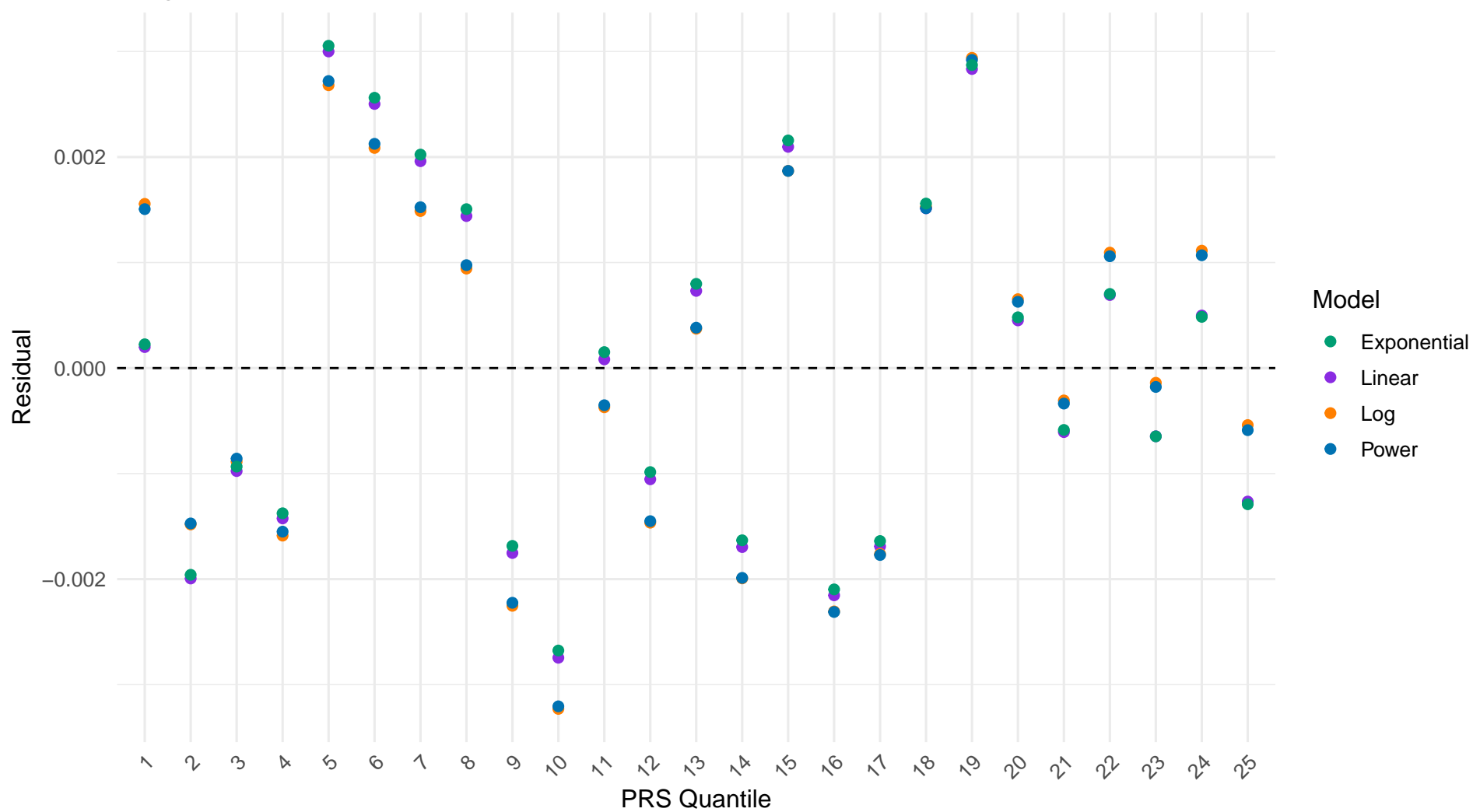Diagnosis: M81

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: M81

Chi2 Test for code: M81

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 − 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
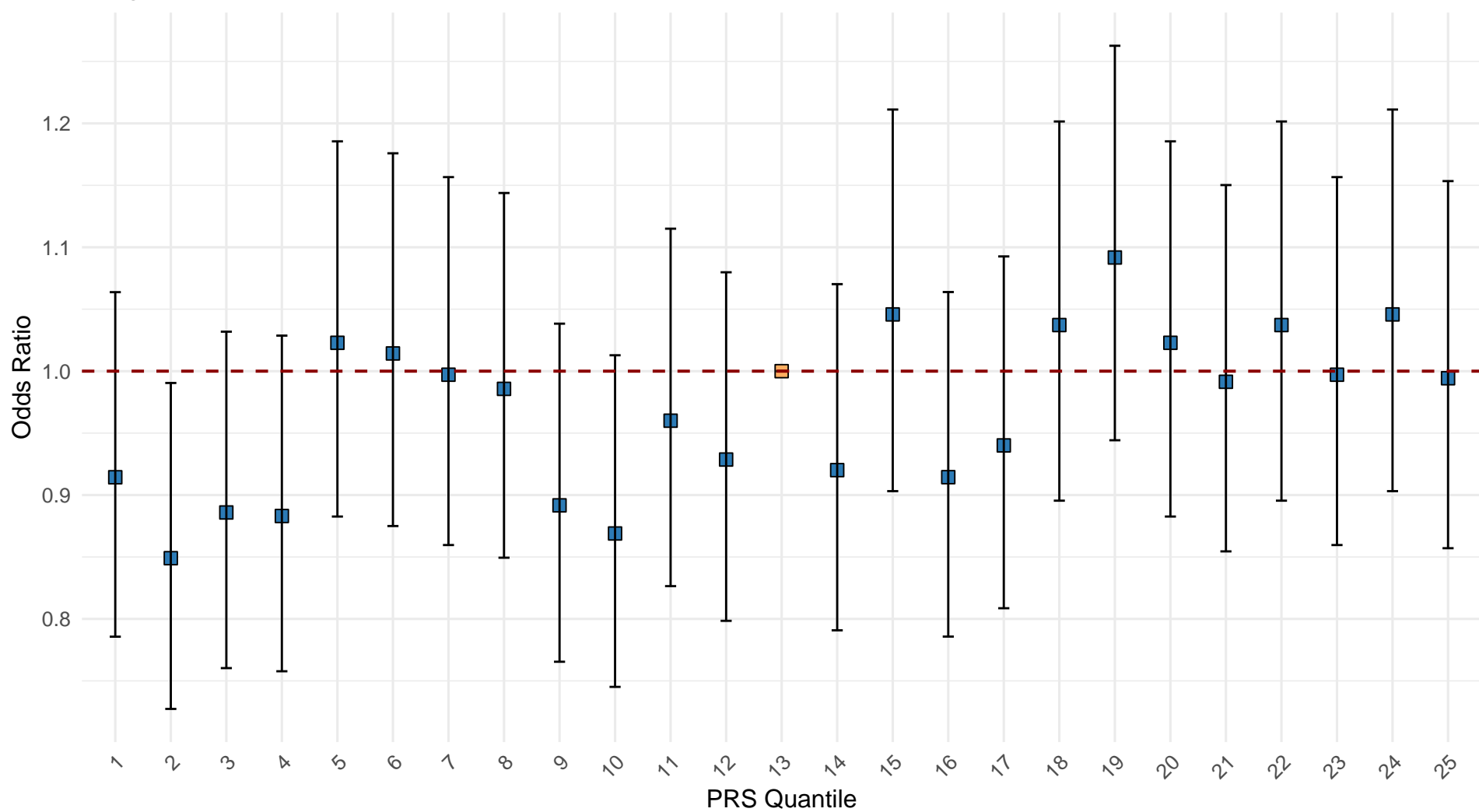Diagnosis: M81

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.91	0.79	1.06
2	0.85	0.73	0.99
3	0.89	0.76	1.03
4	0.88	0.76	1.03
5	1.02	0.88	1.19
6	1.01	0.87	1.18
7	1	0.86	1.16
8	0.99	0.85	1.14
9	0.89	0.77	1.04
10	0.87	0.75	1.01
11	0.96	0.83	1.11
12	0.93	0.8	1.08
13	1	1	1
14	0.92	0.79	1.07
15	1.05	0.9	1.21
16	0.91	0.79	1.06
17	0.94	0.81	1.09
18	1.04	0.9	1.2
19	1.09	0.94	1.26
20	1.02	0.88	1.19
21	0.99	0.85	1.15
22	1.04	0.9	1.2
23	1	0.86	1.16
24	1.05	0.9	1.21
25	0.99	0.86	1.15

```
Linear Model Summary for M81

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-2.745e-03 -1.425e-03  8.246e-05  1.441e-03  3.000e-03

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 3.017e-02  7.134e-04  42.289  < 2e-16 ***
PRS         1.701e-04  4.799e-05   3.545  0.00173 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.00173 on 23 degrees of freedom
Multiple R-squared:  0.3533, Adjusted R-squared:  0.3252
F-statistic: 12.57 on 1 and 23 DF,  p-value: 0.001728


Log Model Summary for M81

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0032300 -0.0014822 -0.0001396  0.0014881  0.0029404

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0289825  0.0010548  27.477  < 2e-16 ***
log(PRS)    0.0014648  0.0004288   3.416  0.00236 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001753 on 23 degrees of freedom
Multiple R-squared:  0.3366, Adjusted R-squared:  0.3077
F-statistic: 11.67 on 1 and 23 DF,  p-value: 0.002365


Exponential Model Summary for M81

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.087925 -0.045708  0.004721  0.045912  0.094072

Coefficients:
             Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.501503   0.022191 -157.787  < 2e-16 ***
PRS          0.005328   0.001493    3.569  0.00163 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.05382 on 23 degrees of freedom
Multiple R-squared:  0.3565, Adjusted R-squared:  0.3285
F-statistic: 12.74 on 1 and 23 DF,  p-value: 0.001628


Power Model Summary for M81

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.029032   0.001005  28.889  < 2e-16 ***
b 0.046740   0.013821   3.382  0.00257 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001748 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 3.788e-06
```

Prevalence analysis and model fitting for diagnosis: N17
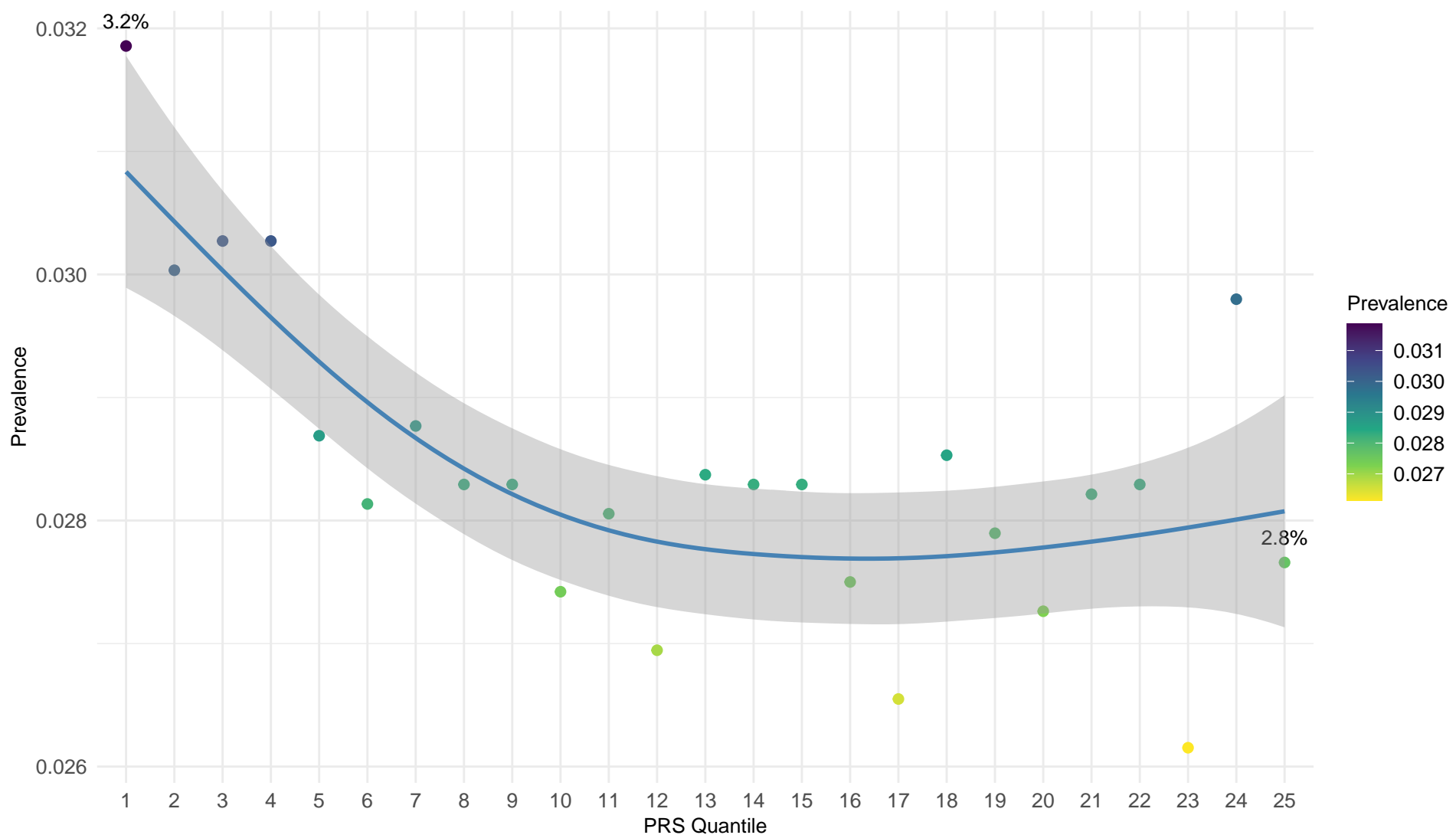
Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.0372
2	0.0352
3	0.03546
4	0.03524
5	0.03347
6	0.03277
7	0.03369
8	0.03316
9	0.0332
10	0.03209
11	0.03287
12	0.03162
13	0.03293
14	0.03318
15	0.03306
16	0.03232
17	0.031
18	0.03354
19	0.03254
20	0.0318
21	0.03304
22	0.03312
23	0.03073
24	0.03475
25	0.03232

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Power	−272.1673	2.153800e−05	0.5783159
2	Log	−271.7290	2.191890e−05	0.5708584
3	Linear	−261.1255	3.349814e−05	0.3441529
4	Exponential (lm)	−91.5541	3.317525e−05	0.3504747

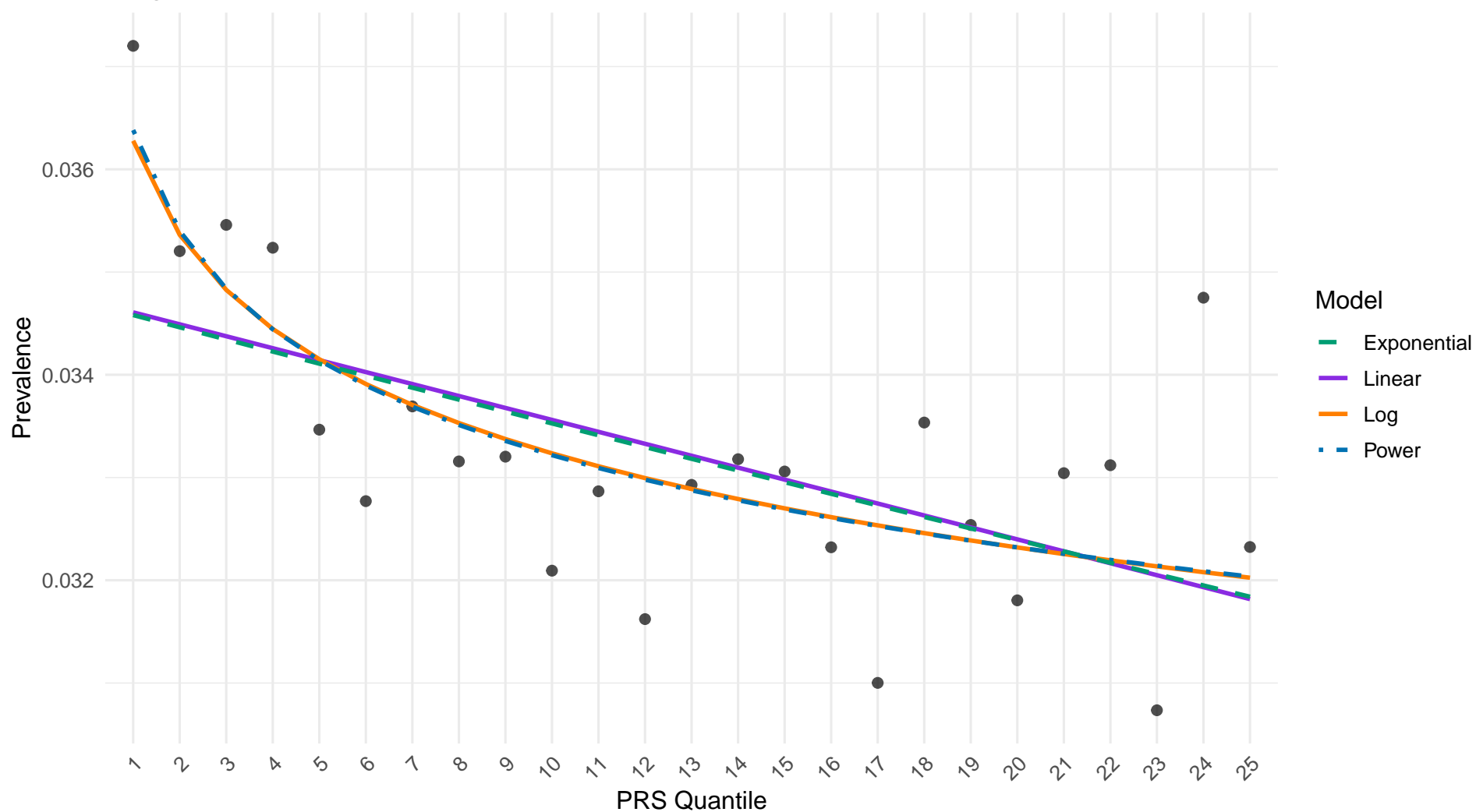FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
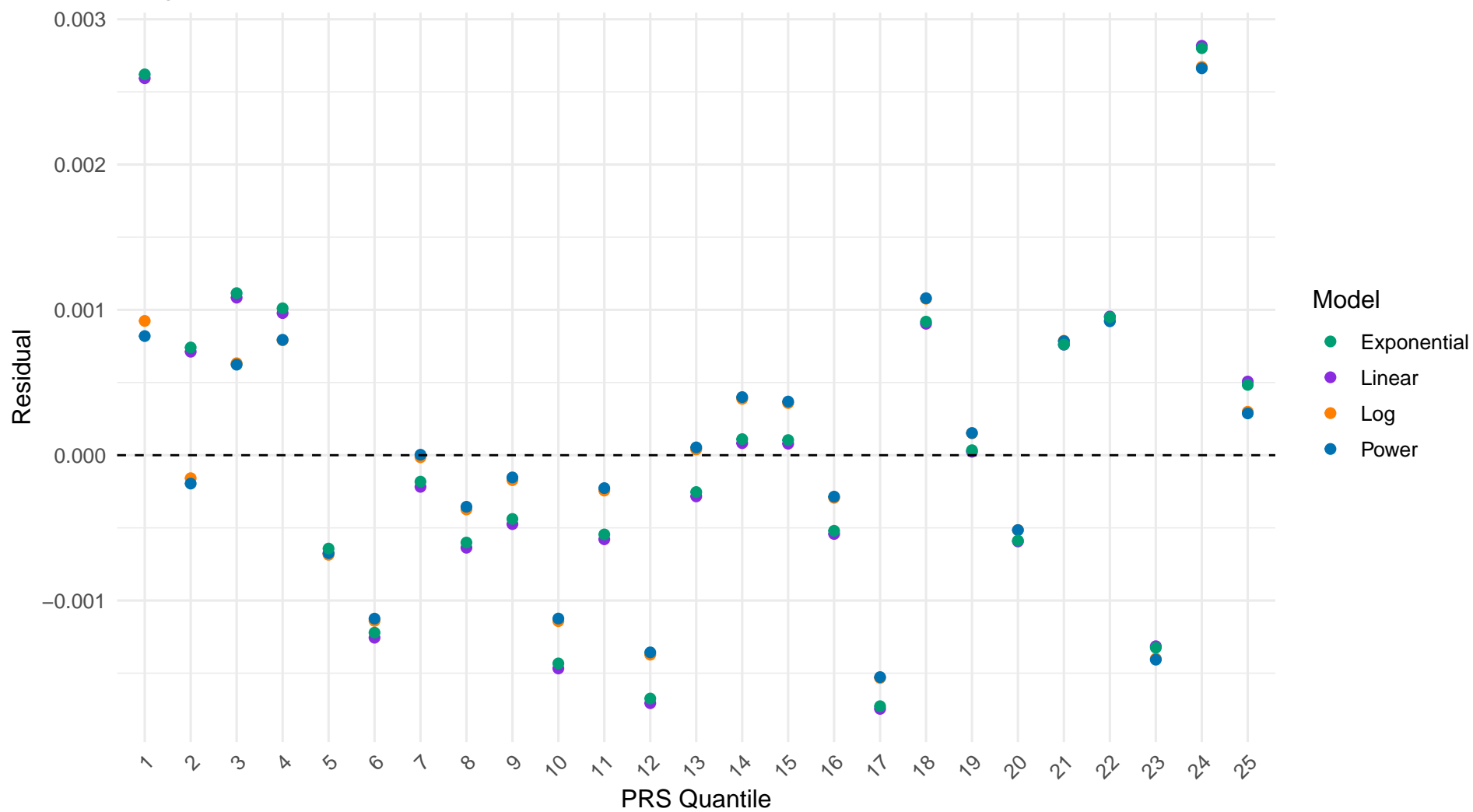Diagnosis: N17

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: N17

Chi2 Test for code: N17

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
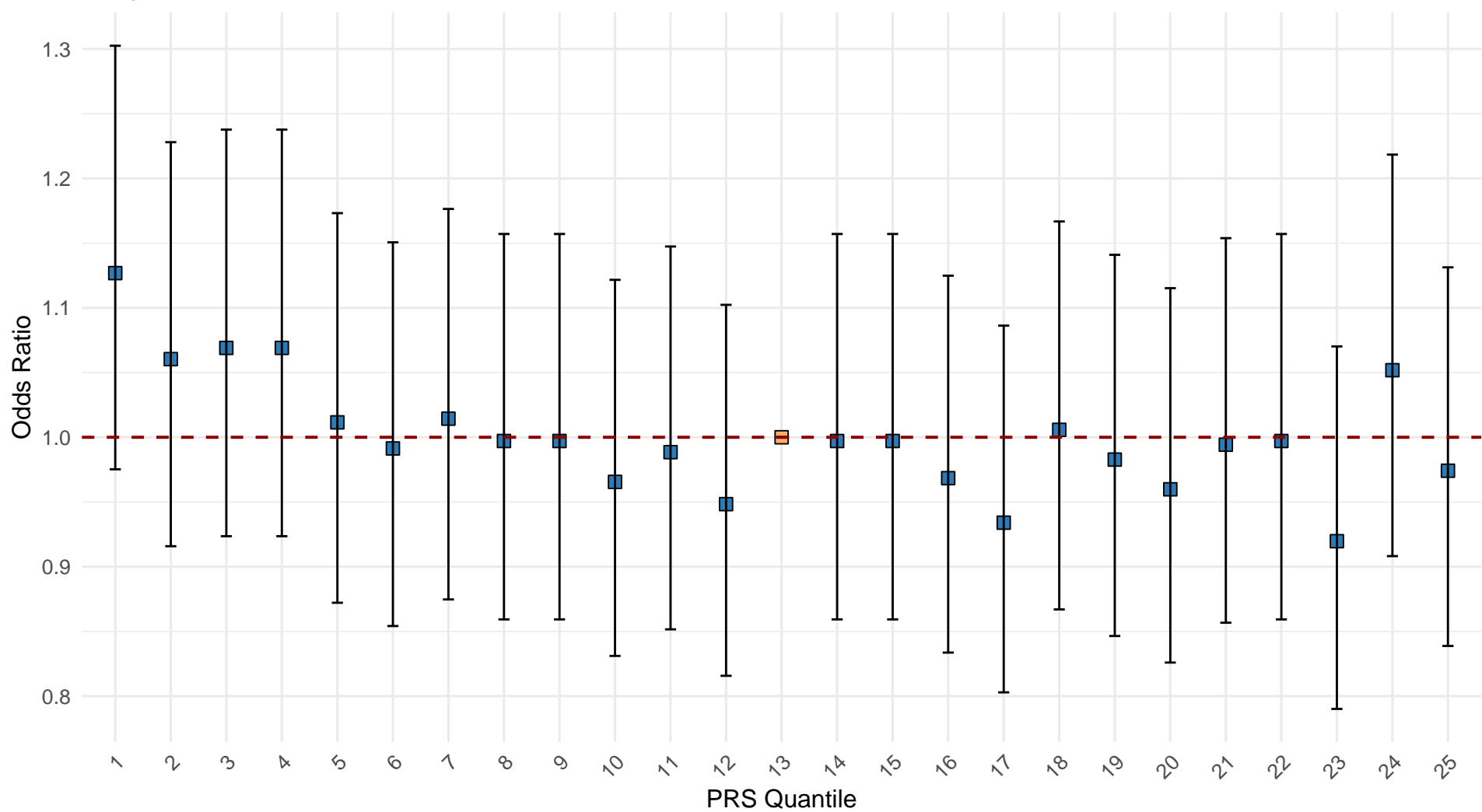Diagnosis: N17

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.13	0.98	1.3
2	1.06	0.92	1.23
3	1.07	0.92	1.24
4	1.07	0.92	1.24
5	1.01	0.87	1.17
6	0.99	0.85	1.15
7	1.01	0.87	1.18
8	1	0.86	1.16
9	1	0.86	1.16
10	0.97	0.83	1.12
11	0.99	0.85	1.15
12	0.95	0.82	1.1
13	1	1	1
14	1	0.86	1.16
15	1	0.86	1.16
16	0.97	0.83	1.12
17	0.93	0.8	1.09
18	1.01	0.87	1.17
19	0.98	0.85	1.14
20	0.96	0.83	1.12
21	0.99	0.86	1.15
22	1	0.86	1.16
23	0.92	0.79	1.07
24	1.05	0.91	1.22
25	0.97	0.84	1.13

```
Linear Model Summary for N17

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0017459 -0.0006369 -0.0002178  0.0007604  0.0028172

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.472e-02  4.976e-04  69.784  < 2e-16 ***
PRS         -1.163e-04  3.347e-05  -3.474  0.00205 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001207 on 23 degrees of freedom
Multiple R-squared:  0.3442,    Adjusted R-squared:  0.3156
F-statistic: 12.07 on 1 and 23 DF,  p-value: 0.002054


Log Model Summary for N17

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-1.533e-03 -5.150e-04 -1.454e-05  6.328e-04  2.672e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0362777  0.0005876  61.743  < 2e-16 ***
log(PRS)    -0.0013212  0.0002389  -5.531 1.26e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0009762 on 23 degrees of freedom
Multiple R-squared:  0.5709,    Adjusted R-squared:  0.5522
F-statistic:  30.6 on 1 and 23 DF,  p-value: 1.261e-05


Exponential Model Summary for N17

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.054220 -0.018311 -0.005393  0.023310  0.084031

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.3610074  0.0147825 -227.363  < 2e-16 ***
PRS         -0.0034411  0.0009944   -3.461  0.00212 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.03585 on 23 degrees of freedom
Multiple R-squared:  0.3424,    Adjusted R-squared:  0.3138
F-statistic: 11.98 on 1 and 23 DF,  p-value: 0.002122


Power Model Summary for N17

Formula: prevalence ~ a * PRS^b

Parameters:
    Estimate Std. Error t value Pr(>|t|)
a  0.0363819  0.0006039  60.241  < 2e-16 ***
b -0.0395175  0.0068622  -5.759 7.25e-06 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0009677 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 3.623e-07
```

Prevalence analysis and model fitting for diagnosis: N81
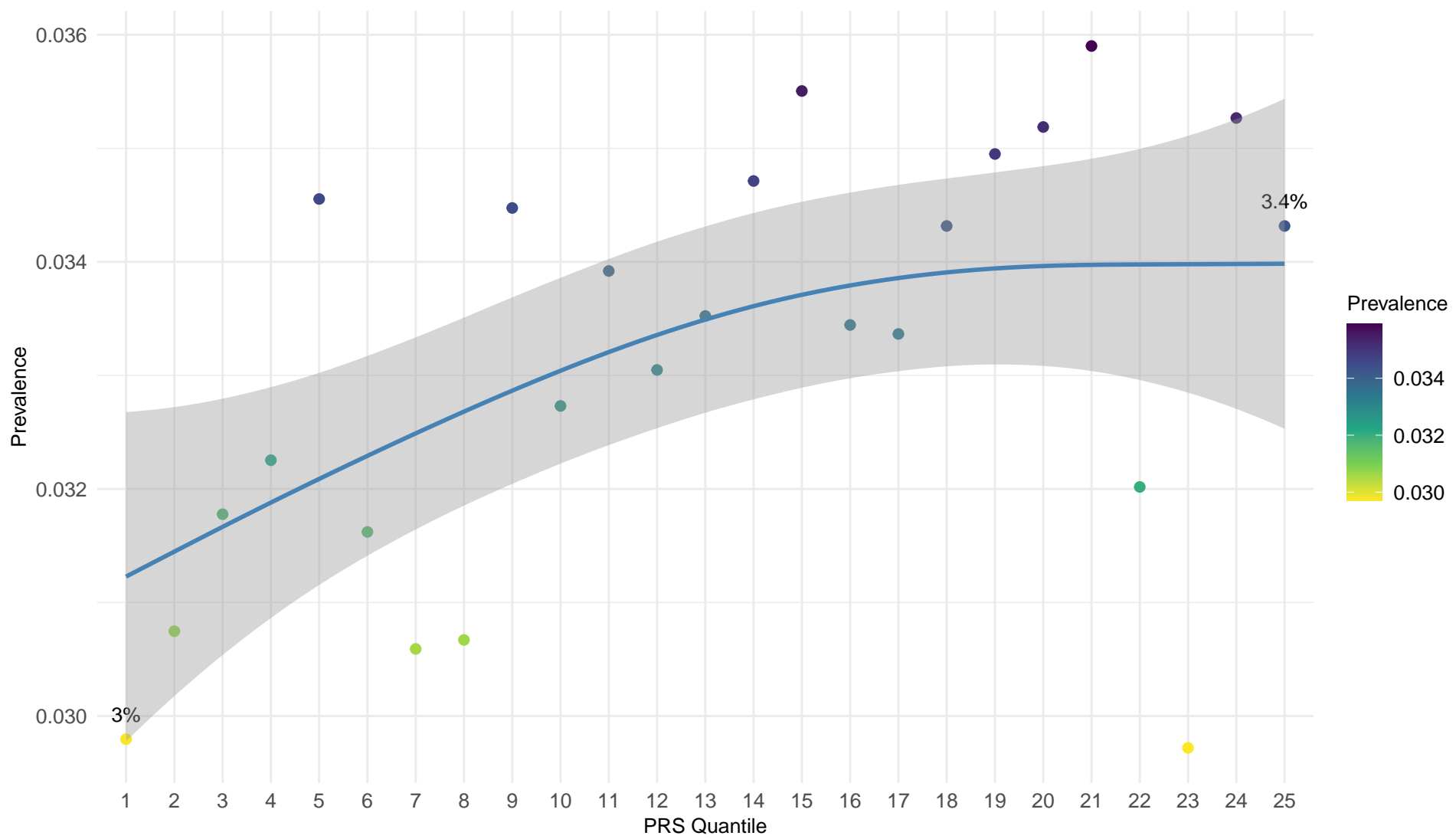
FIGURE 1:Prevalence of N81 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.0348
2	0.03604
3	0.03722
4	0.03754
5	0.04031
6	0.03683
7	0.03583
8	0.03594
9	0.04046
10	0.03831
11	0.03974
12	0.03878
13	0.03891
14	0.04071
15	0.04149
16	0.03931
17	0.03896
18	0.04034
19	0.04077
20	0.04105
21	0.04205
22	0.03748
23	0.03493
24	0.04113
25	0.0401

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−241.77103	7.265107e−05	0.3485436
2	Power	−241.70050	7.285631e−05	0.3467032
3	Linear	−238.53510	8.269053e−05	0.2585205
4	Exponential (lm)	−75.24291	8.323148e−05	0.2536699

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
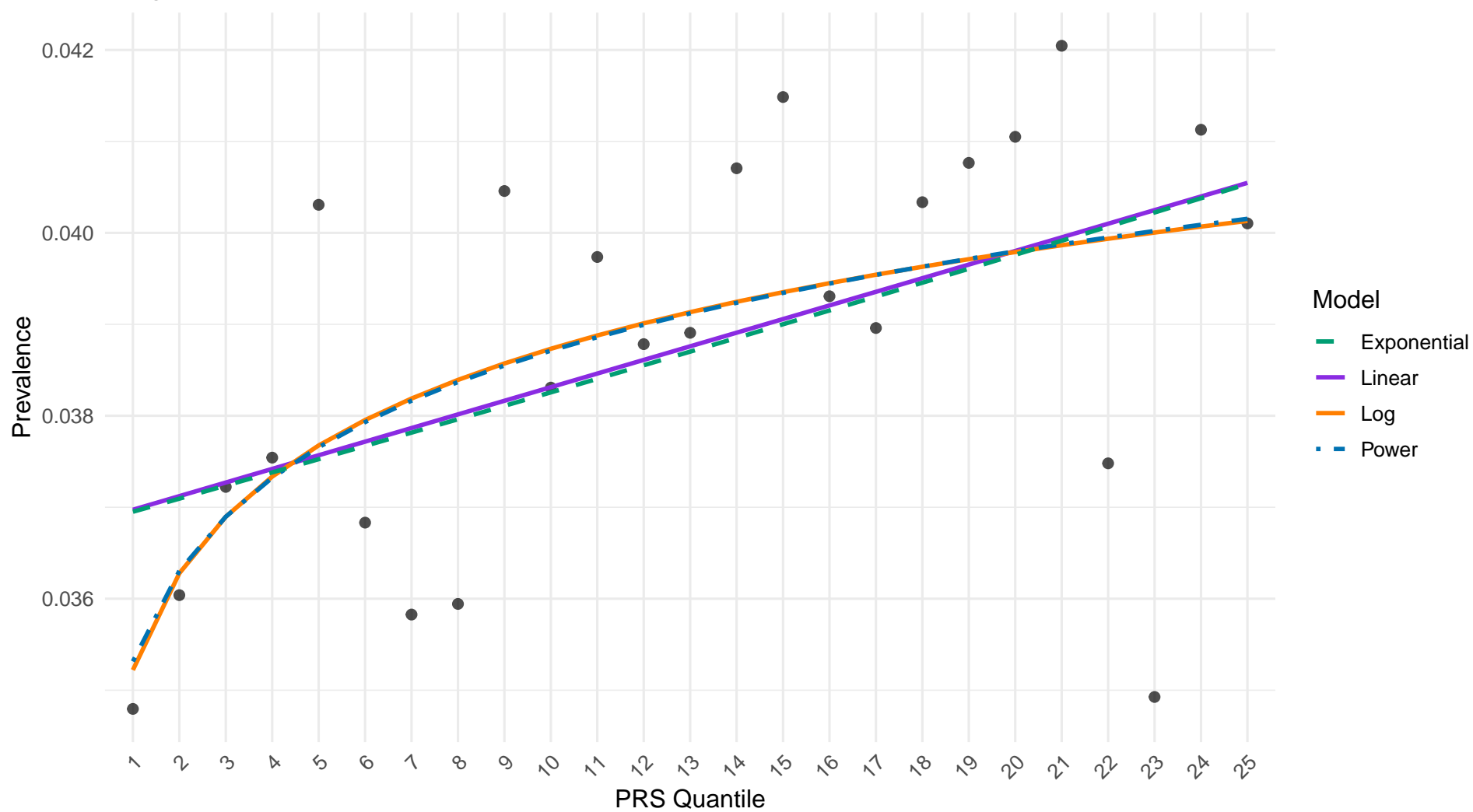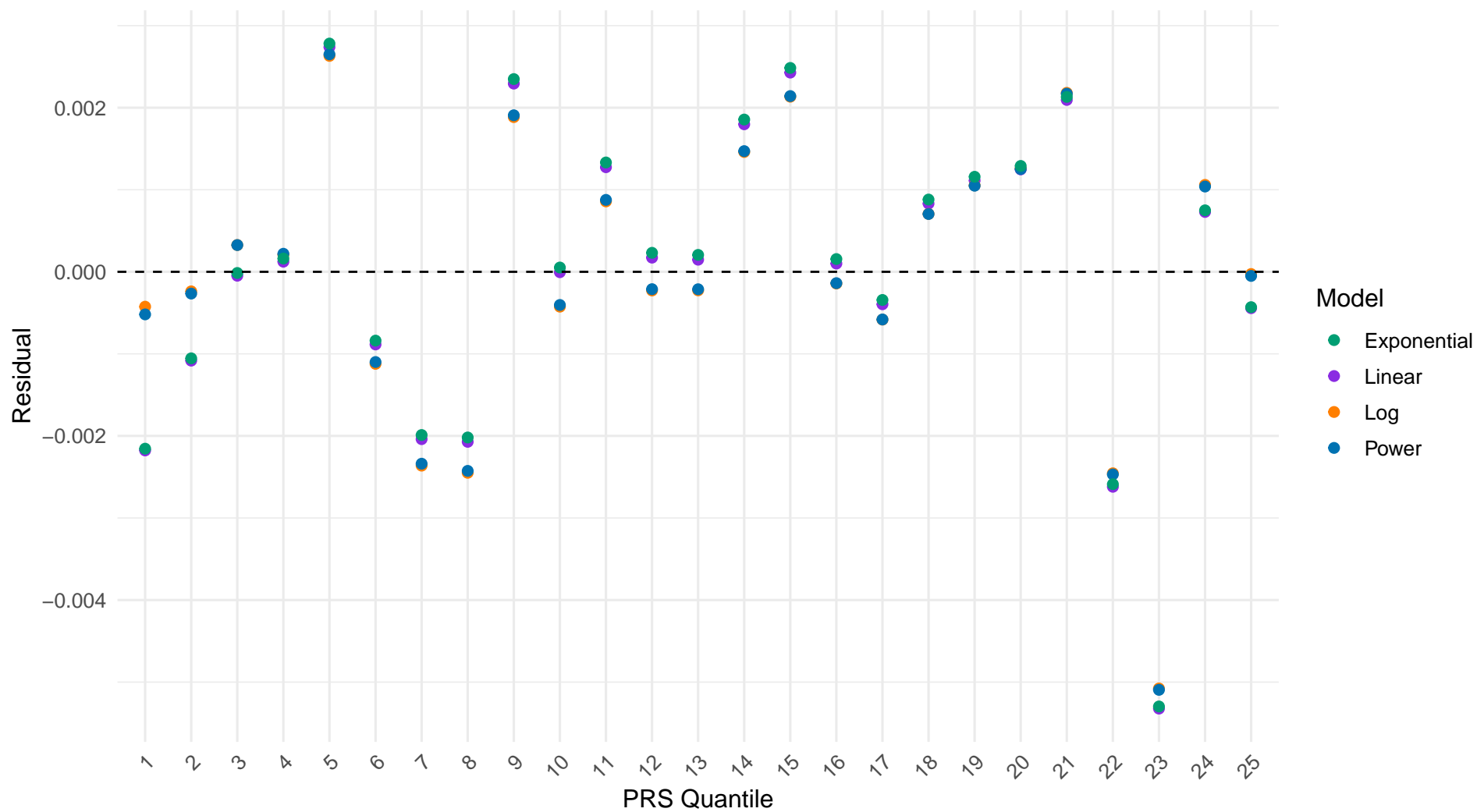Diagnosis: N81

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: N81

```
Chi2 Test for code: N81
```

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

```
OR (Q1 vs Others): 1.009  [95% CI: 0.995 - 1.024]


Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data:  matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949
```

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
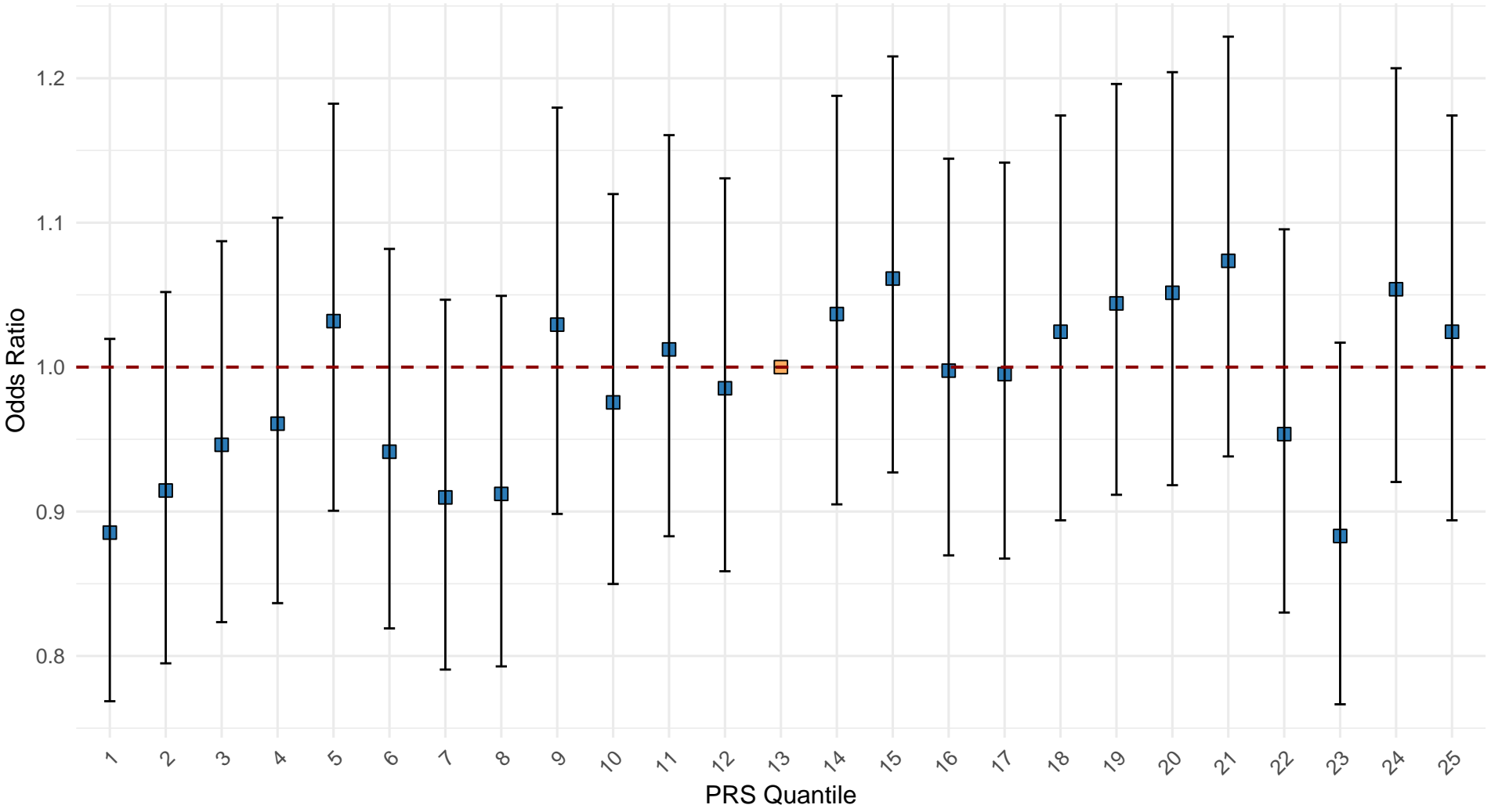Diagnosis: N81

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.89	0.77	1.02
2	0.91	0.79	1.05
3	0.95	0.82	1.09
4	0.96	0.84	1.1
5	1.03	0.9	1.18
6	0.94	0.82	1.08
7	0.91	0.79	1.05
8	0.91	0.79	1.05
9	1.03	0.9	1.18
10	0.98	0.85	1.12
11	1.01	0.88	1.16
12	0.99	0.86	1.13
13	1	1	1
14	1.04	0.9	1.19
15	1.06	0.93	1.22
16	1	0.87	1.14
17	1	0.87	1.14
18	1.02	0.89	1.17
19	1.04	0.91	1.2
20	1.05	0.92	1.2
21	1.07	0.94	1.23
22	0.95	0.83	1.1
23	0.88	0.77	1.02
24	1.05	0.92	1.21
25	1.02	0.89	1.17

```
Linear Model Summary for N81

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.0053230 -0.0008854  0.0001232  0.0012481  0.0027385

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 3.682e-02  7.818e-04  47.102  < 2e-16 ***
PRS         1.489e-04  5.259e-05   2.832  0.00945 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001896 on 23 degrees of freedom
Multiple R-squared:  0.2585,	Adjusted R-squared:  0.2263
F-statistic: 8.019 on 1 and 23 DF,  p-value: 0.009452


Log Model Summary for N81

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q      Median        3Q       Max
-0.0050776 -0.0004251 -0.0000270  0.0010591  0.0026313

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0352206  0.0010697  32.925  < 2e-16 ***
log(PRS)    0.0015254  0.0004349   3.508  0.00189 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001777 on 23 degrees of freedom
Multiple R-squared:  0.3485,	Adjusted R-squared:  0.3202
F-statistic: 12.31 on 1 and 23 DF,  p-value: 0.001891


Exponential Model Summary for N81

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.141210 -0.022513  0.004314  0.031927  0.071503

Coefficients:
             Estimate Std. Error   t value Pr(>|t|)
(Intercept) -3.302018   0.020485 -161.196   <2e-16 ***
PRS          0.003857   0.001378    2.799   0.0102 *
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.04968 on 23 degrees of freedom
Multiple R-squared:  0.2541,	Adjusted R-squared:  0.2216
F-statistic: 7.834 on 1 and 23 DF,  p-value: 0.0102


Power Model Summary for N81

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a  0.03531    0.00103  34.272  < 2e-16 ***
b  0.03990    0.01168   3.416  0.00236 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.00178 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.063e-07
```

Prevalence analysis and model fitting for diagnosis: R10
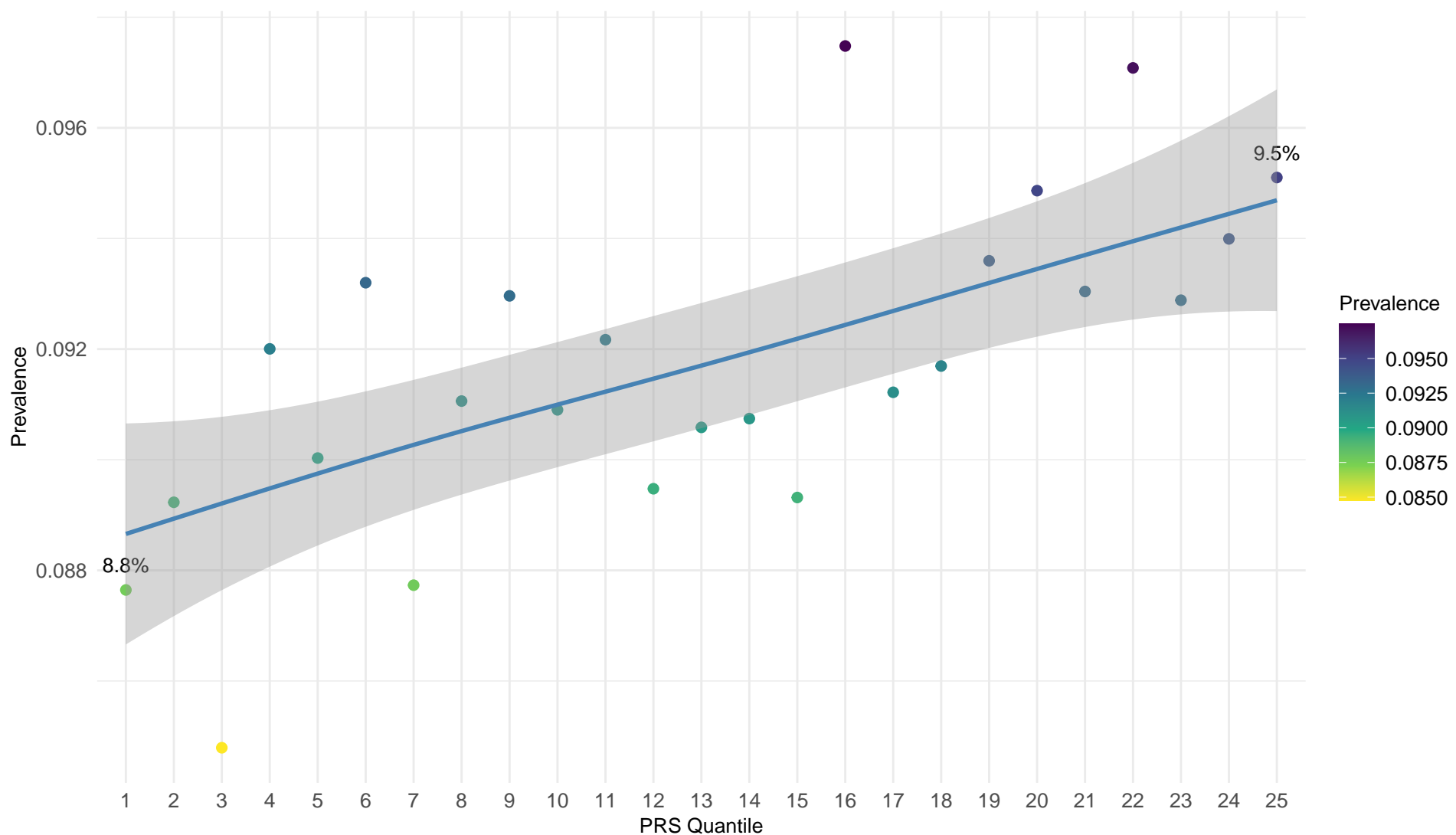

FIGURE 1:Prevalence of R10 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.10235
2	0.10459
3	0.09932
4	0.10709
5	0.10502
6	0.10856
7	0.10275
8	0.10671
9	0.1091
10	0.10639
11	0.10798
12	0.105
13	0.10513
14	0.10641
15	0.10436
16	0.11457
17	0.10651
18	0.10778
19	0.10917
20	0.11067
21	0.10897
22	0.11365
23	0.10916
24	0.10961
25	0.11114

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−223.8387	0.0001488533	0.4728896
2	Power	−222.6584	0.0001560493	0.4474078
3	Log	−222.5353	0.0001568195	0.4446803
4	Exponential (lm)	−112.2431	0.0001490263	0.4722771

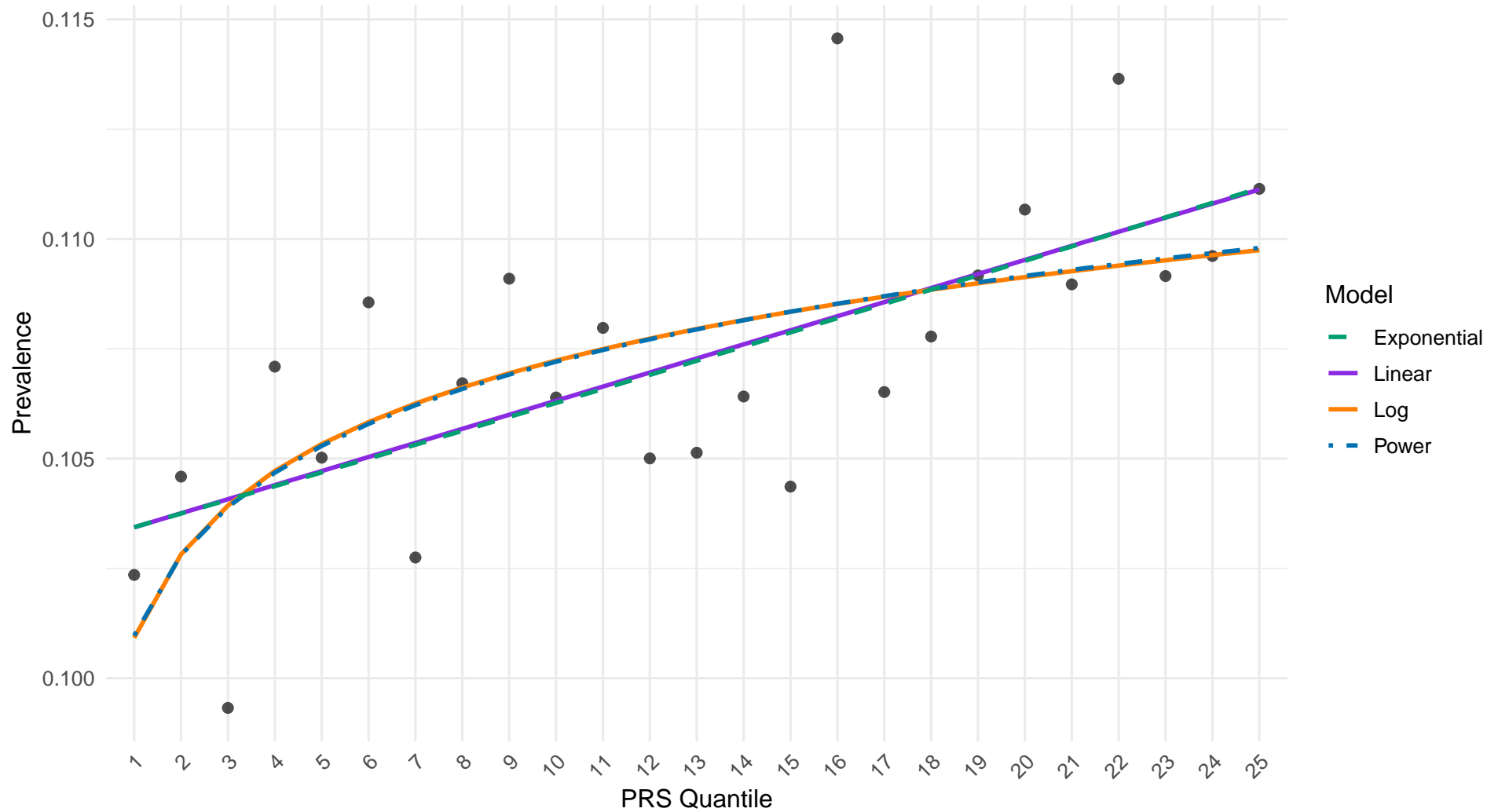FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
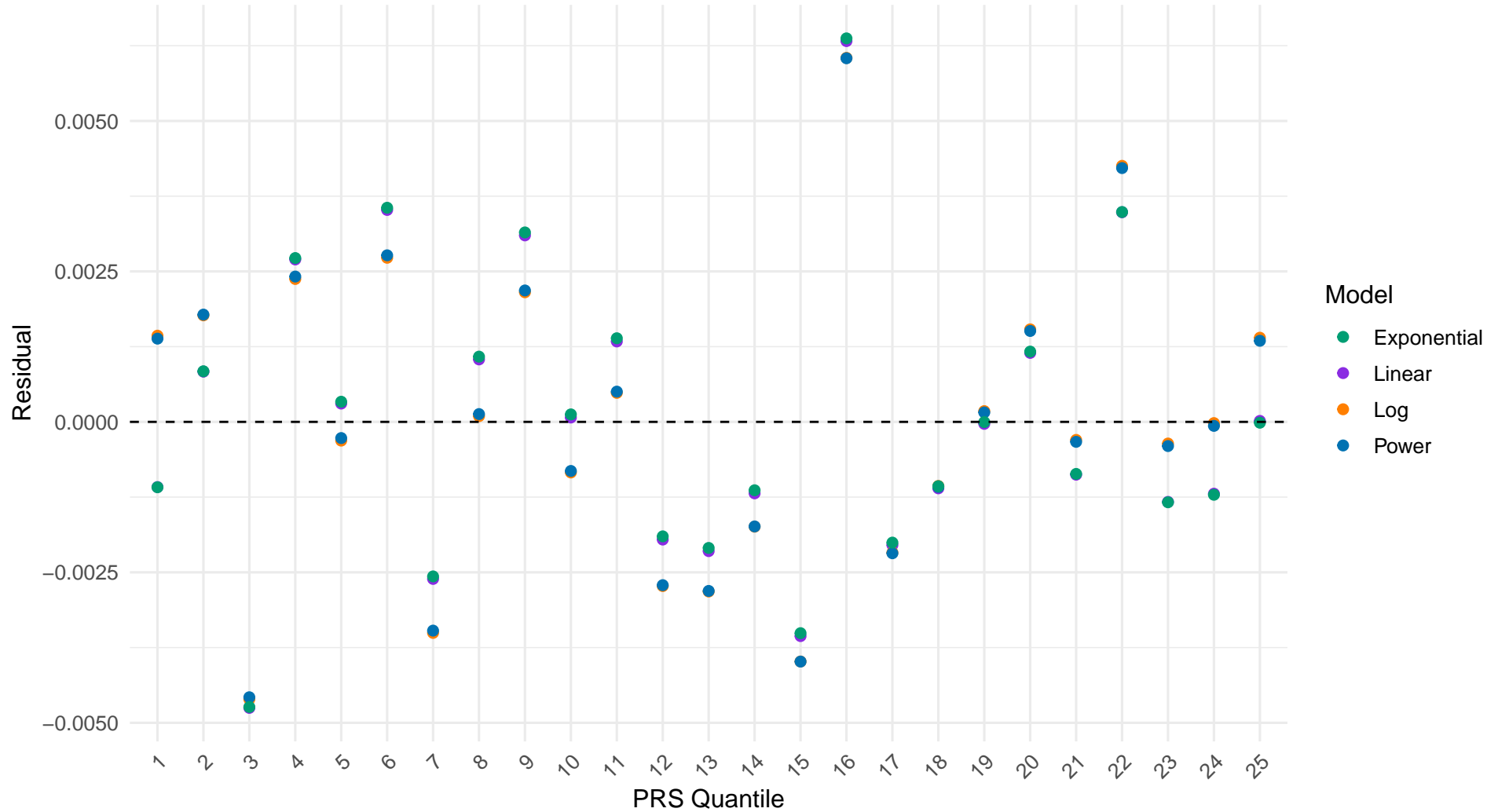Diagnosis: R10

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: R10

Chi2 Test for code: R10

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
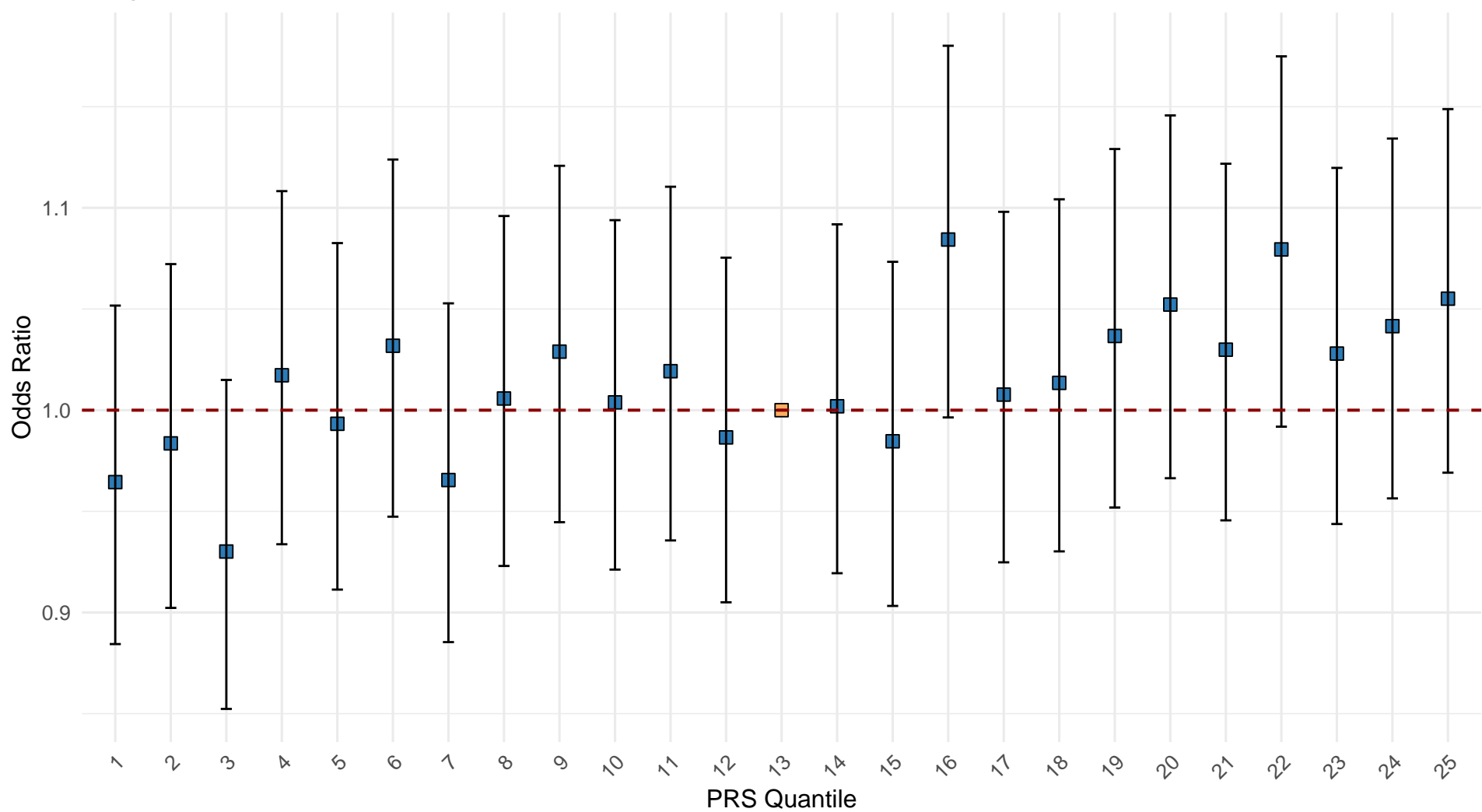Diagnosis: R10

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.96	0.88	1.05
2	0.98	0.9	1.07
3	0.93	0.85	1.01
4	1.02	0.93	1.11
5	0.99	0.91	1.08
6	1.03	0.95	1.12
7	0.97	0.89	1.05
8	1.01	0.92	1.1
9	1.03	0.94	1.12
10	1	0.92	1.09
11	1.02	0.94	1.11
12	0.99	0.91	1.08
13	1	1	1
14	1	0.92	1.09
15	0.98	0.9	1.07
16	1.08	1	1.18
17	1.01	0.92	1.1
18	1.01	0.93	1.1
19	1.04	0.95	1.13
20	1.05	0.97	1.15
21	1.03	0.95	1.12
22	1.08	0.99	1.17
23	1.03	0.94	1.12
24	1.04	0.96	1.13
25	1.06	0.97	1.15

```
Linear Model Summary for R10

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q      Median         3Q        Max
-0.0047521 -0.0013294 -0.0000327  0.0011463  0.0063267

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 1.031e-01  1.049e-03  98.305  < 2e-16 ***
PRS         3.205e-04  7.056e-05   4.542 0.000146 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002544 on 23 degrees of freedom
Multiple R-squared:  0.4729, Adjusted R-squared:   0.45
F-statistic: 20.63 on 1 and 23 DF,  p-value: 0.0001456


Log Model Summary for R10

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.004608 -0.001741 -0.000020  0.001538  0.006048

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.1009181  0.0015716  64.213  < 2e-16 ***
log(PRS)    0.0027418  0.0006389   4.292 0.000272 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002611 on 23 degrees of freedom
Multiple R-squared:  0.4447, Adjusted R-squared:  0.4205
F-statistic: 18.42 on 1 and 23 DF,  p-value: 0.0002722


Exponential Model Summary for R10

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.046588 -0.012163 -0.000123  0.010609  0.057224

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -2.2717930  0.0097734 -232.446  < 2e-16 ***
PRS          0.0029988  0.0006574    4.561 0.000139 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0237 on 23 degrees of freedom
Multiple R-squared:  0.475, Adjusted R-squared:  0.4521
F-statistic: 20.81 on 1 and 23 DF,  p-value: 0.0001389


Power Model Summary for R10

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.100967   0.001529  66.040  < 2e-16 ***
b 0.026039   0.006093   4.274 0.000285 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002605 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.077e-06
```

Prevalence analysis and model fitting for diagnosis: R19
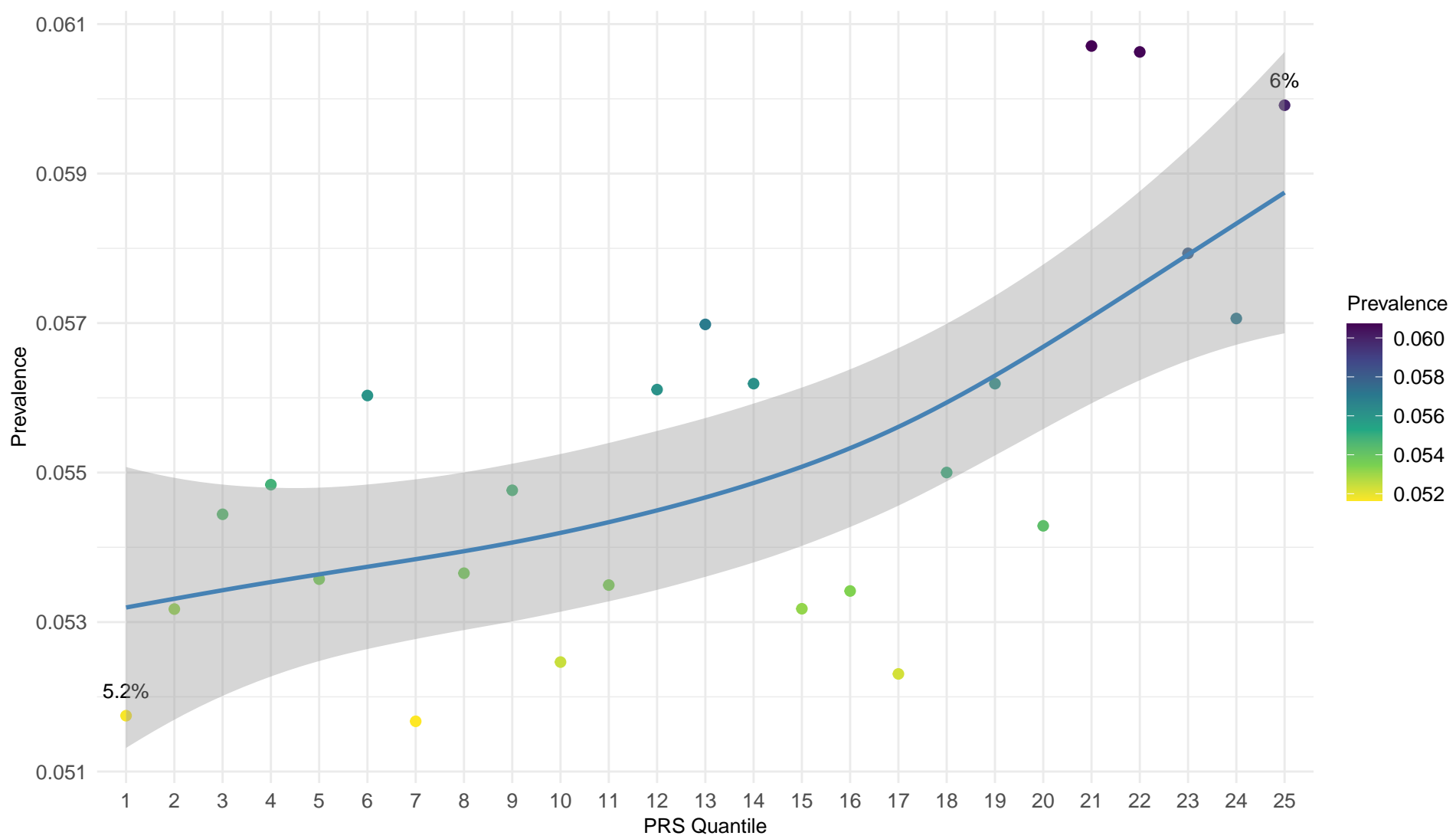

FIGURE 1:Prevalence of R19 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.06043
2	0.06233
3	0.06377
4	0.06383
5	0.06249
6	0.06526
7	0.06052
8	0.06288
9	0.06427
10	0.0614
11	0.06267
12	0.06585
13	0.06613
14	0.06589
15	0.06214
16	0.06278
17	0.06108
18	0.06465
19	0.06554
20	0.06333
21	0.0711
22	0.07097
23	0.06808
24	0.06654
25	0.07002

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−228.36414	0.0001242063	0.4362568
2	Power	−223.84122	0.0001488383	0.3244577
3	Log	−223.66545	0.0001498884	0.3196916
4	Exponential (lm)	−92.06932	0.0001233027	0.4403581

FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
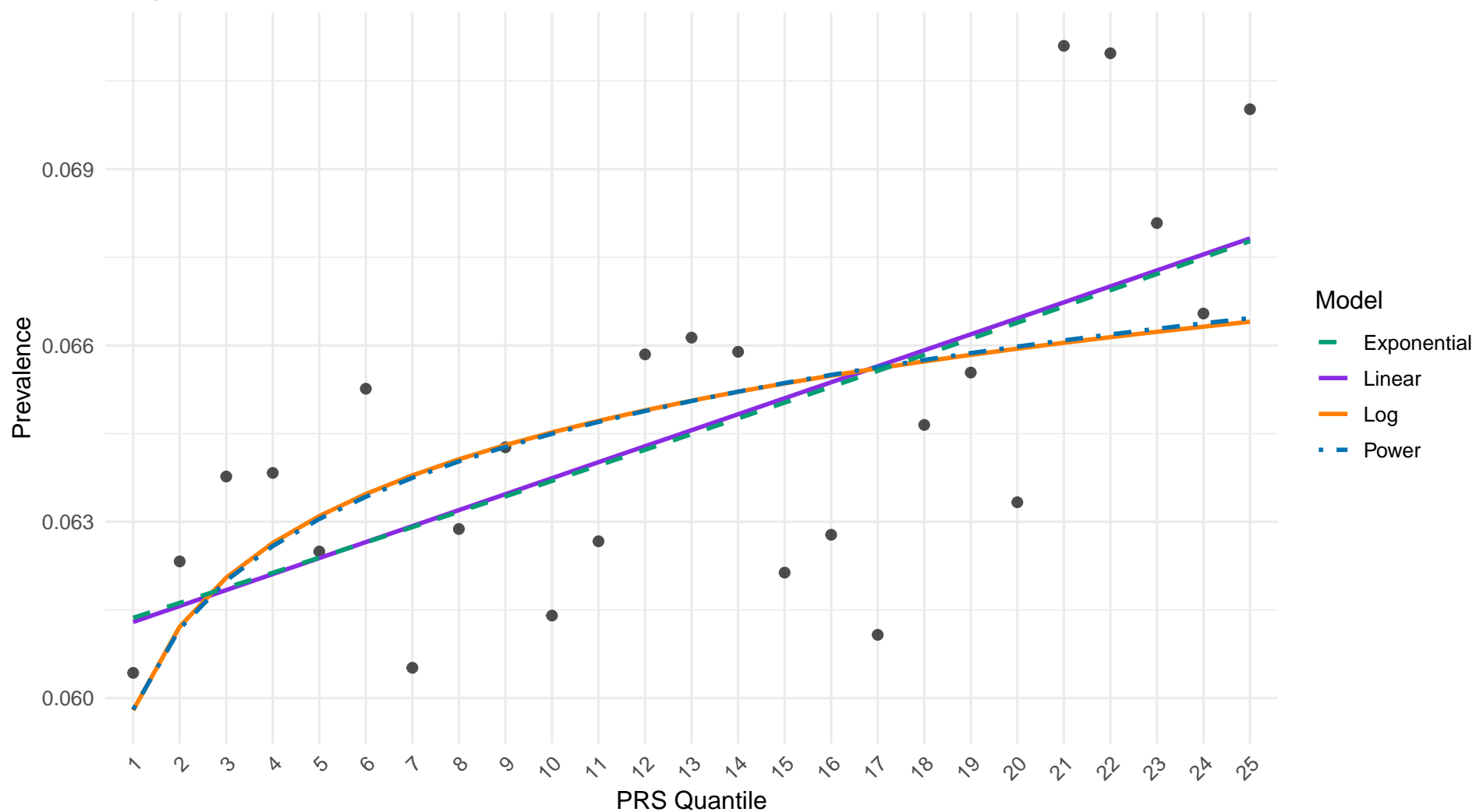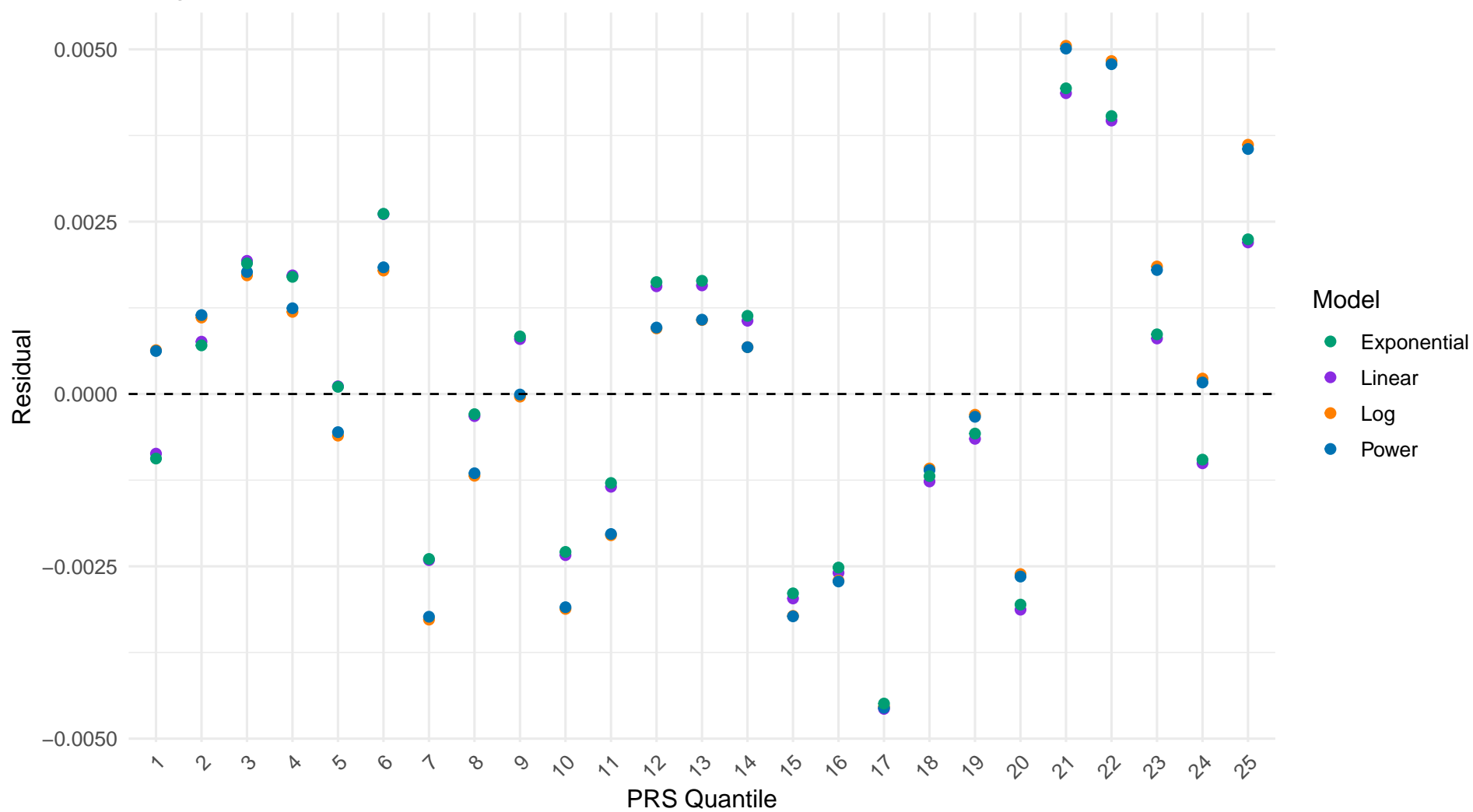Diagnosis: R19

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: R19

Chi2 Test for code: R19

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
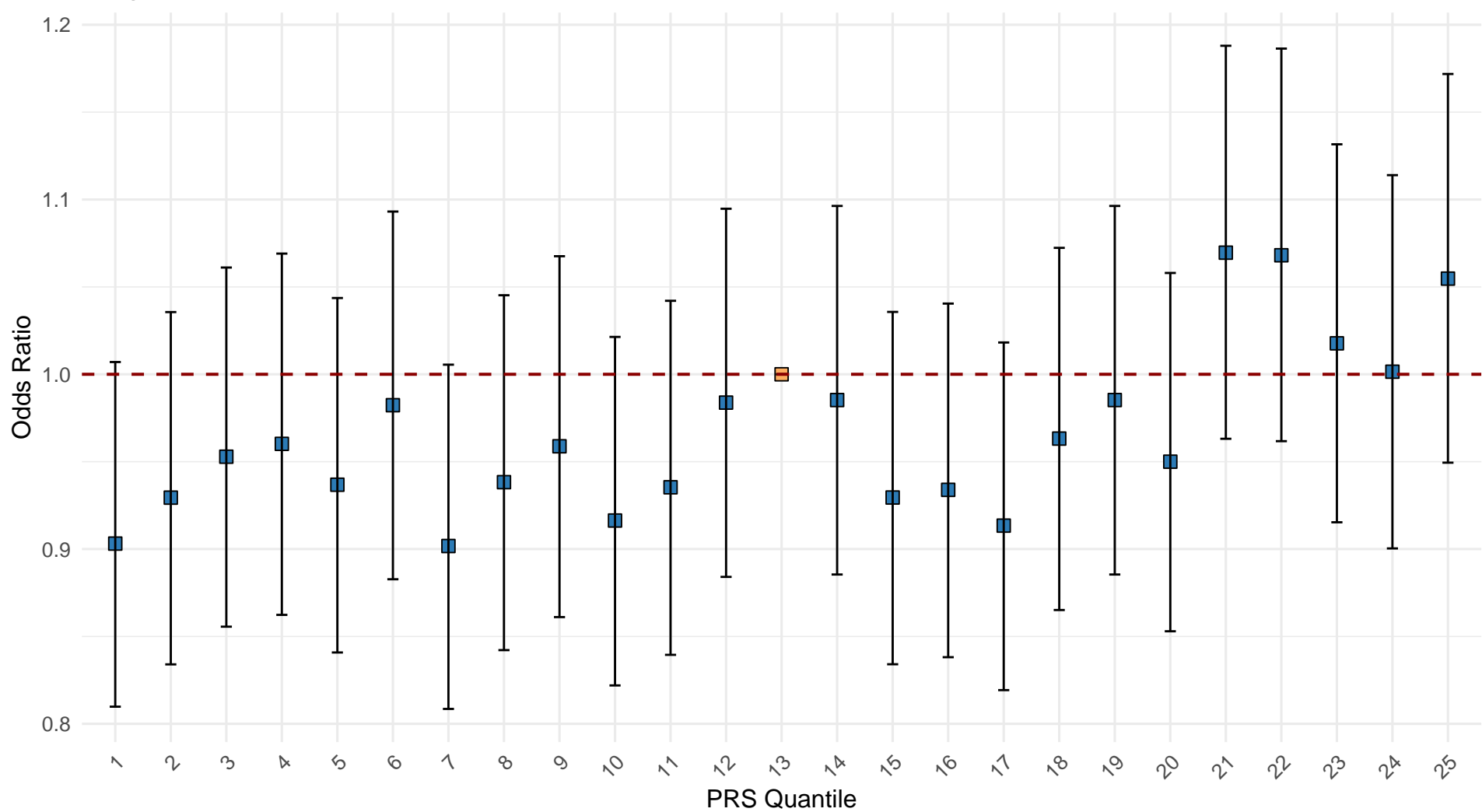Diagnosis: R19

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.9	0.81	1.01
2	0.93	0.83	1.04
3	0.95	0.86	1.06
4	0.96	0.86	1.07
5	0.94	0.84	1.04
6	0.98	0.88	1.09
7	0.9	0.81	1.01
8	0.94	0.84	1.05
9	0.96	0.86	1.07
10	0.92	0.82	1.02
11	0.94	0.84	1.04
12	0.98	0.88	1.09
13	1	1	1
14	0.99	0.89	1.1
15	0.93	0.83	1.04
16	0.93	0.84	1.04
17	0.91	0.82	1.02
18	0.96	0.87	1.07
19	0.99	0.89	1.1
20	0.95	0.85	1.06
21	1.07	0.96	1.19
22	1.07	0.96	1.19
23	1.02	0.92	1.13
24	1	0.9	1.11
25	1.05	0.95	1.17

```
Linear Model Summary for R19

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q        Max
-0.0045684 -0.0013458  0.0001117  0.0015753  0.0043639

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 6.102e-02  9.581e-04  63.689  < 2e-16 ***
PRS         2.719e-04  6.445e-05   4.219 0.000326 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002324 on 23 degrees of freedom
Multiple R-squared:  0.4363, Adjusted R-squared:  0.4117
F-statistic: 17.8 on 1 and 23 DF,  p-value: 0.0003263


Log Model Summary for R19

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min        1Q     Median        3Q        Max
-0.0045343 -0.0020493  0.0002239  0.0011915  0.0050517

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0597936  0.0015365  38.916  < 2e-16 ***
log(PRS)    0.0020534  0.0006246   3.288  0.00323 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002553 on 23 degrees of freedom
Multiple R-squared:  0.3197, Adjusted R-squared:  0.2901
F-statistic: 10.81 on 1 and 23 DF,  p-value: 0.003225


Exponential Model Summary for R19

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q        Max
-0.070947 -0.020392  0.001664  0.025144  0.064403

Coefficients:
             Estimate Std. Error   t value Pr(>|t|)
(Intercept) -2.7950435  0.0146310 -191.036  < 2e-16 ***
PRS          0.0041396  0.0009842    4.206 0.000337 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.03549 on 23 degrees of freedom
Multiple R-squared:  0.4348, Adjusted R-squared:  0.4102
F-statistic: 17.69 on 1 and 23 DF,  p-value: 0.0003369


Power Model Summary for R19

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.059806   0.001483  40.322  < 2e-16 ***
b 0.032798   0.009953   3.295  0.00317 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002544 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 8.623e-08
```

Prevalence analysis and model fitting for diagnosis: R31
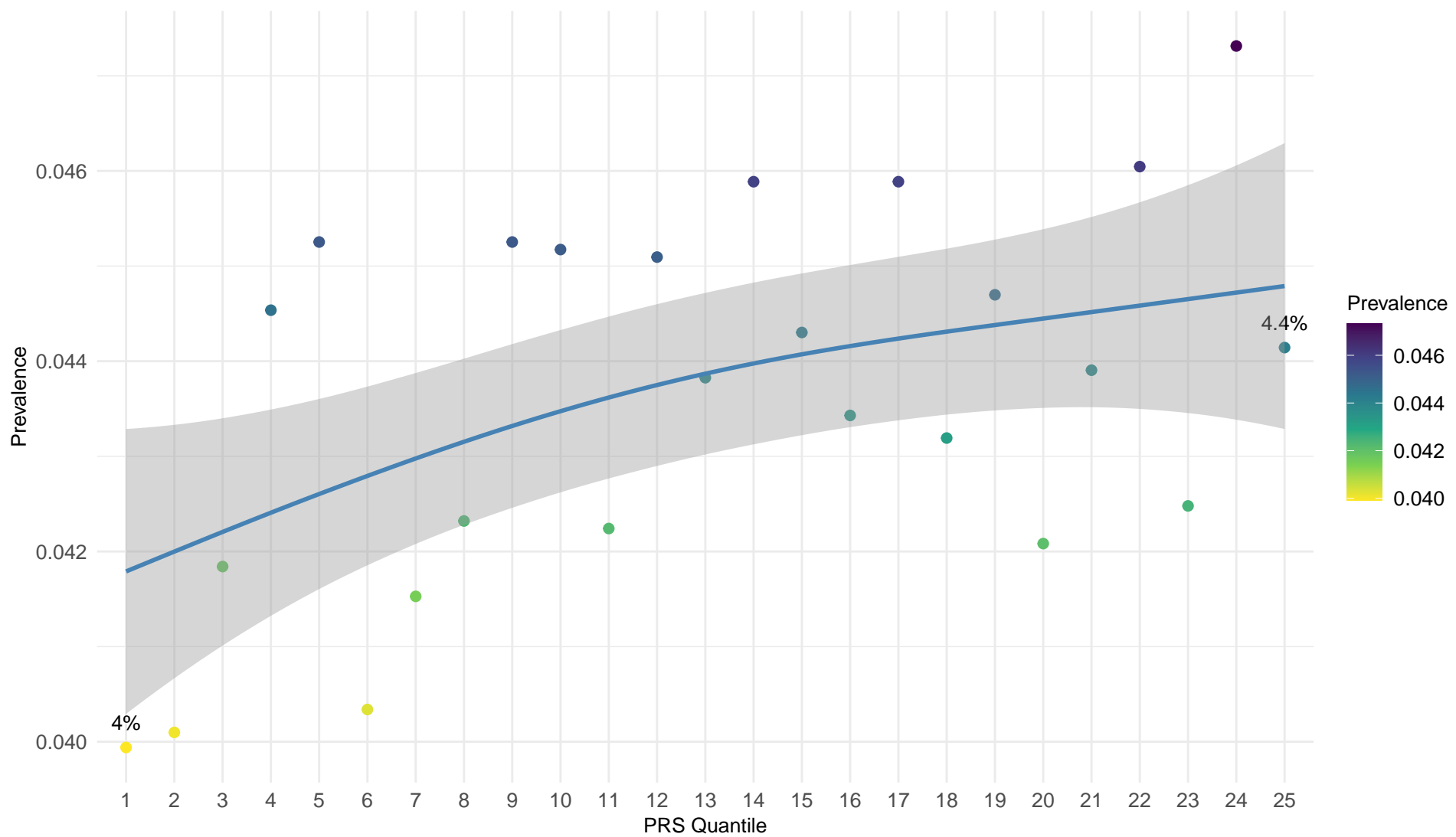
FIGURE 1:Prevalence of R31 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.04664
2	0.047
3	0.04901
4	0.05184
5	0.05279
6	0.04699
7	0.04864
8	0.0496
9	0.05311
10	0.05287
11	0.04948
12	0.05292
13	0.05086
14	0.05381
15	0.05176
16	0.05104
17	0.05358
18	0.05077
19	0.05214
20	0.04909
21	0.05142
22	0.0539
23	0.04992
24	0.05518
25	0.05159

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−238.80785	8.179330e−05	0.3614797
2	Power	−238.71838	8.208655e−05	0.3591904
3	Linear	−235.24033	9.433913e−05	0.2635405
4	Exponential (lm)	−86.18627	9.476100e−05	0.2602471

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
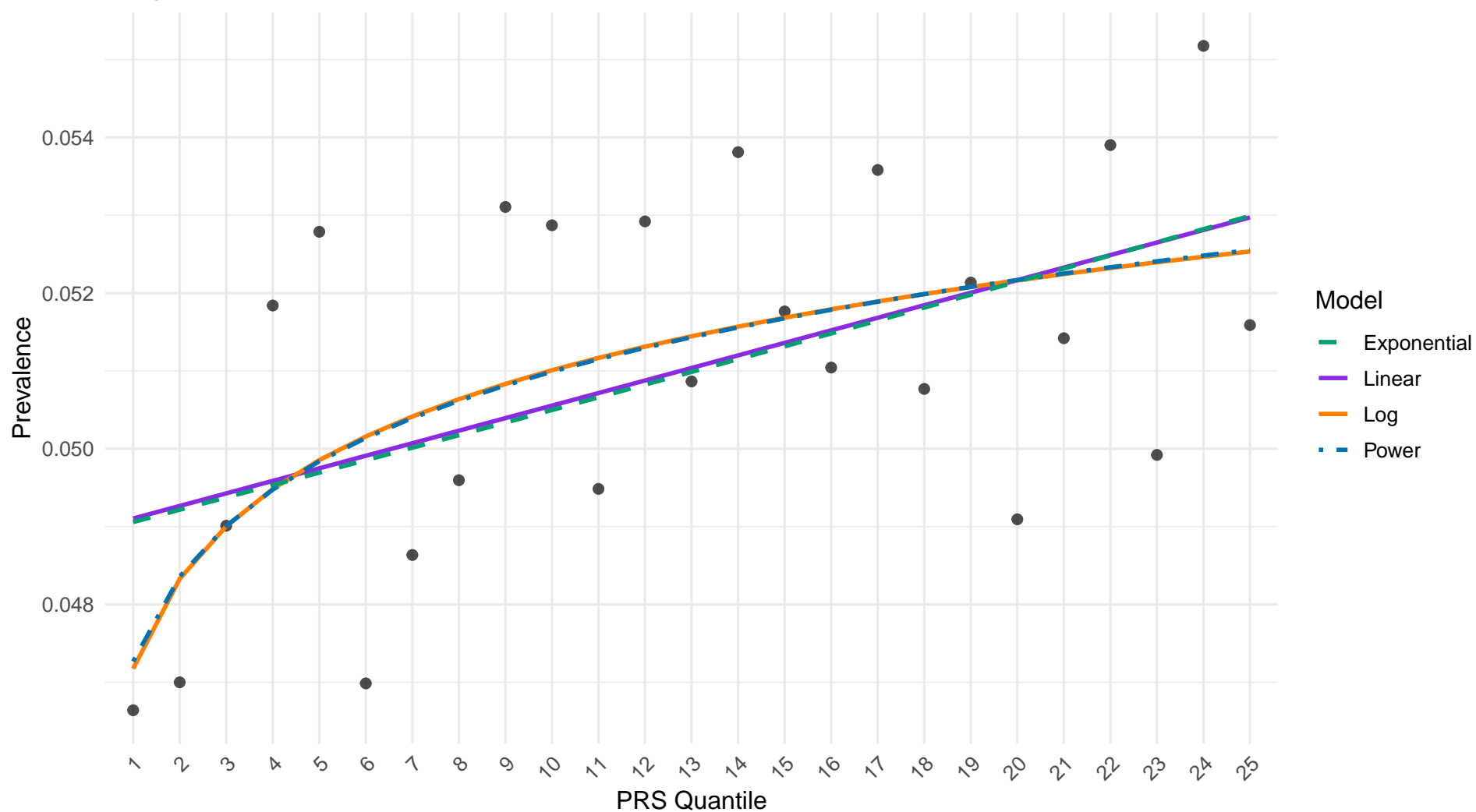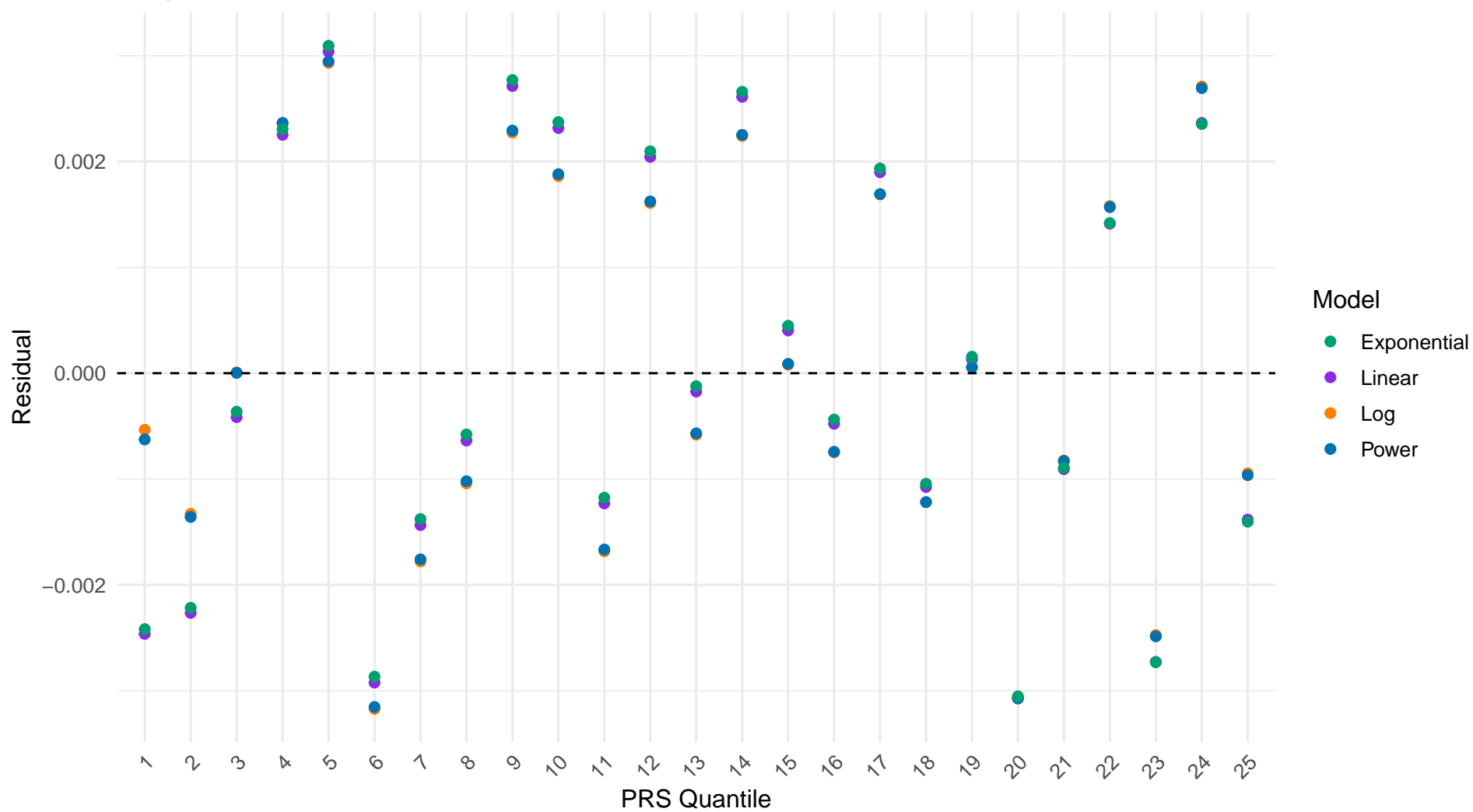Diagnosis: R31

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: R31

Chi2 Test for code: R31

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 − 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
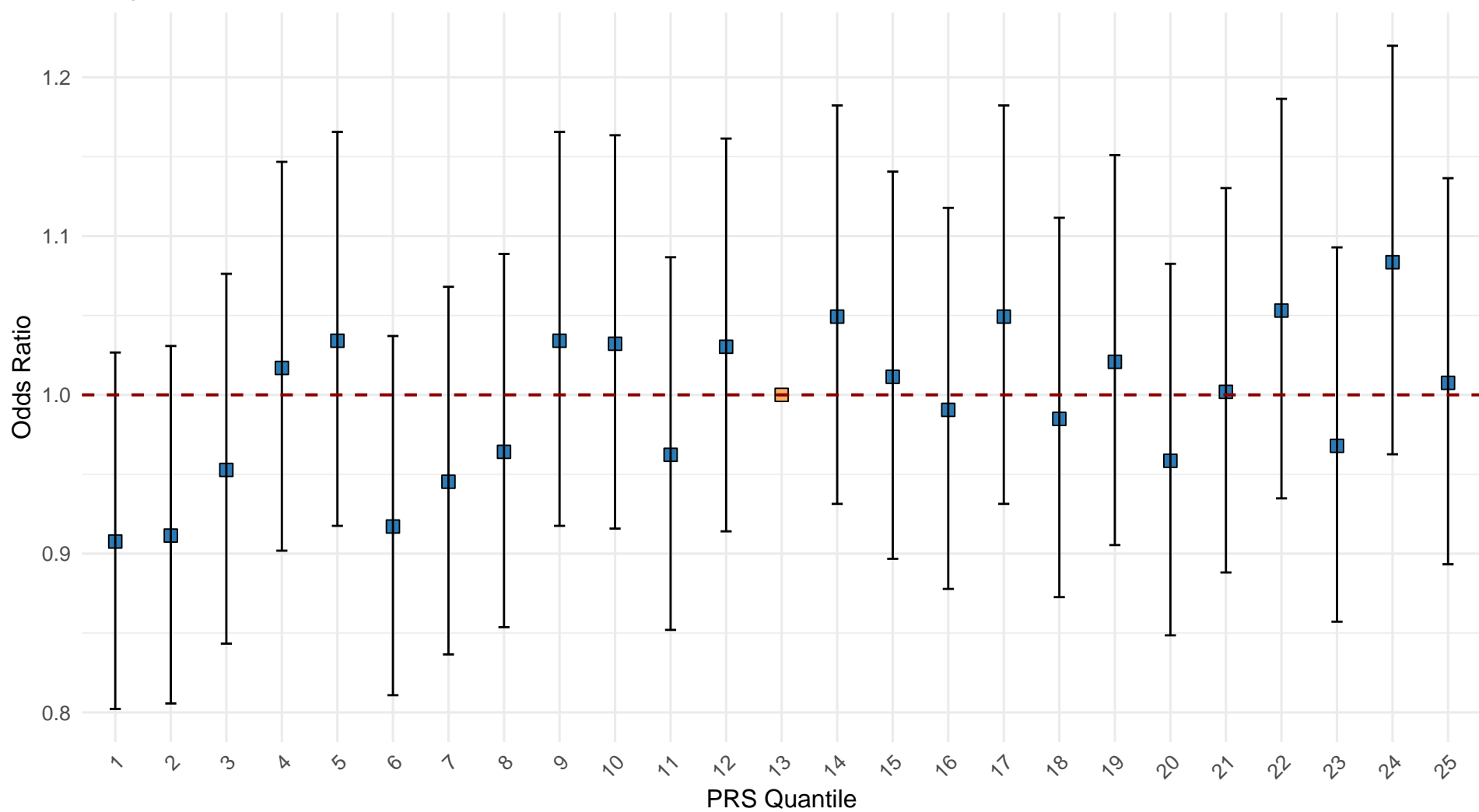Diagnosis: R31

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.91	0.8	1.03
2	0.91	0.81	1.03
3	0.95	0.84	1.08
4	1.02	0.9	1.15
5	1.03	0.92	1.17
6	0.92	0.81	1.04
7	0.95	0.84	1.07
8	0.96	0.85	1.09
9	1.03	0.92	1.17
10	1.03	0.92	1.16
11	0.96	0.85	1.09
12	1.03	0.91	1.16
13	1	1	1
14	1.05	0.93	1.18
15	1.01	0.9	1.14
16	0.99	0.88	1.12
17	1.05	0.93	1.18
18	0.98	0.87	1.11
19	1.02	0.91	1.15
20	0.96	0.85	1.08
21	1	0.89	1.13
22	1.05	0.93	1.19
23	0.97	0.86	1.09
24	1.08	0.96	1.22
25	1.01	0.89	1.14

```
Linear Model Summary for R31

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min        1Q    Median        3Q       Max
-0.003072 -0.001383 -0.000415  0.002044  0.003039

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 4.894e-02  8.350e-04  58.612  < 2e-16 ***
PRS         1.611e-04  5.617e-05   2.869  0.00868 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.002025 on 23 degrees of freedom
Multiple R-squared:  0.2635,    Adjusted R-squared:  0.2315
F-statistic: 8.231 on 1 and 23 DF,  p-value: 0.008676


Log Model Summary for R31

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0031721 -0.0012188 -0.0005342  0.0016892  0.0029327

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0471750  0.0011350  41.563  < 2e-16 ***
log(PRS)    0.0016649  0.0004614   3.608  0.00148 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001886 on 23 degrees of freedom
Multiple R-squared:  0.3615,    Adjusted R-squared:  0.3337
F-statistic: 13.02 on 1 and 23 DF,  p-value: 0.001479


Exponential Model Summary for R31

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q    Median        3Q       Max
-0.060327 -0.026829 -0.007392  0.040429  0.060399

Coefficients:
              Estimate Std. Error   t value Pr(>|t|)
(Intercept) -3.017948   0.016458 -183.374  < 2e-16 ***
PRS          0.003213   0.001107    2.902  0.00803 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.03992 on 23 degrees of freedom
Multiple R-squared:  0.268, Adjusted R-squared:  0.2362
F-statistic: 8.422 on 1 and 23 DF,  p-value: 0.008034


Power Model Summary for R31

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.047267   0.001101  42.917  < 2e-16 ***
b 0.032928   0.009351   3.521  0.00183 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001889 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.046e-06
```

Prevalence analysis and model fitting for diagnosis: R51
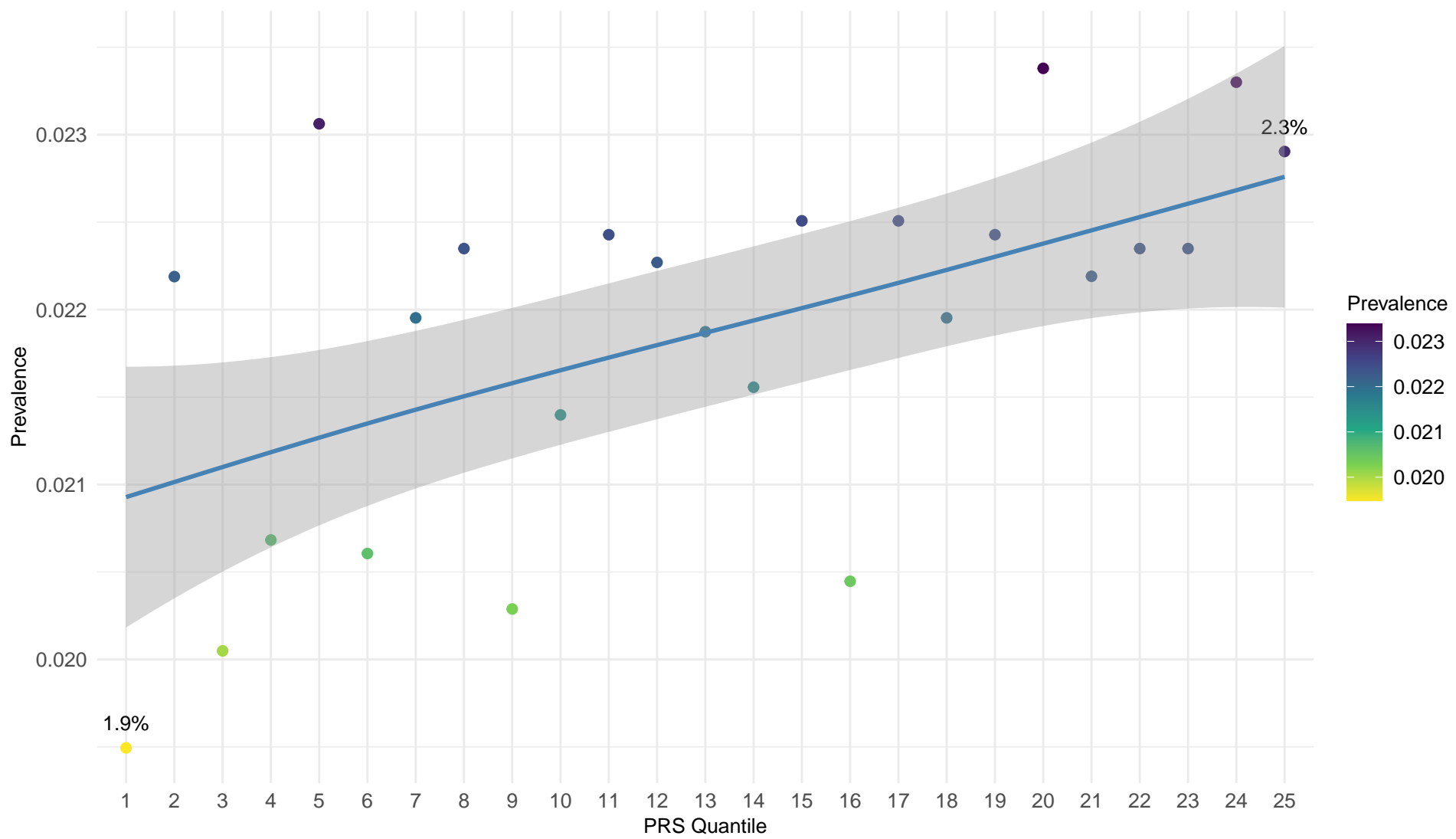
FIGURE 1:Prevalence of R51 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.02277
2	0.02601
3	0.02348
4	0.02408
5	0.0269
6	0.024
7	0.02571
8	0.02619
9	0.02381
10	0.02504
11	0.02627
12	0.02613
13	0.02539
14	0.02528
15	0.0263
16	0.02403
17	0.02628
18	0.0258
19	0.02616
20	0.02727
21	0.02599
22	0.02616
23	0.02626
24	0.02717
25	0.02677

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Power	−271.91088	2.176002e−05	0.3837850
2	Log	−271.88769	2.178021e−05	0.3832133
3	Linear	−271.24243	2.234969e−05	0.3670864
4	Exponential (lm)	−86.94227	2.238863e−05	0.3659835

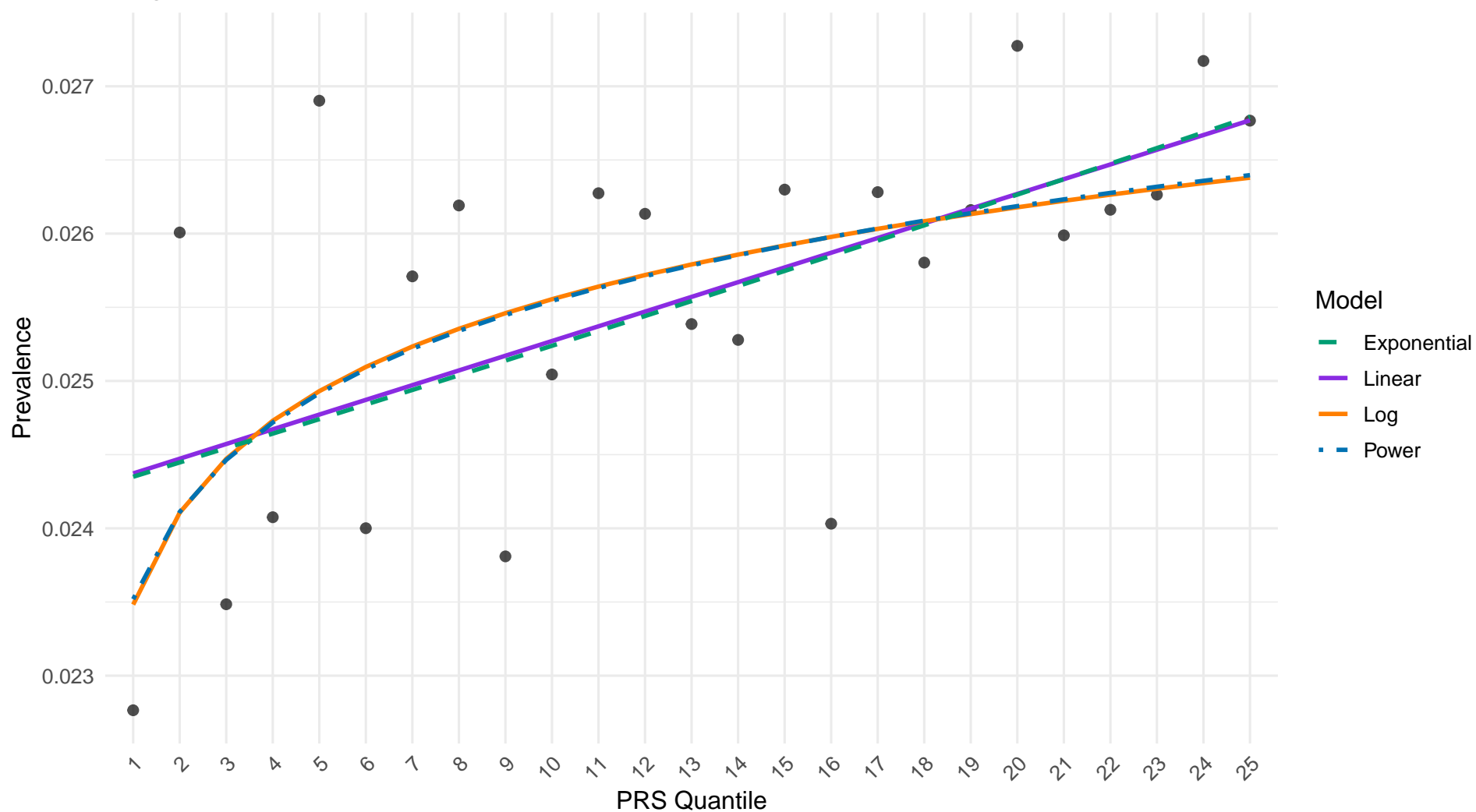FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
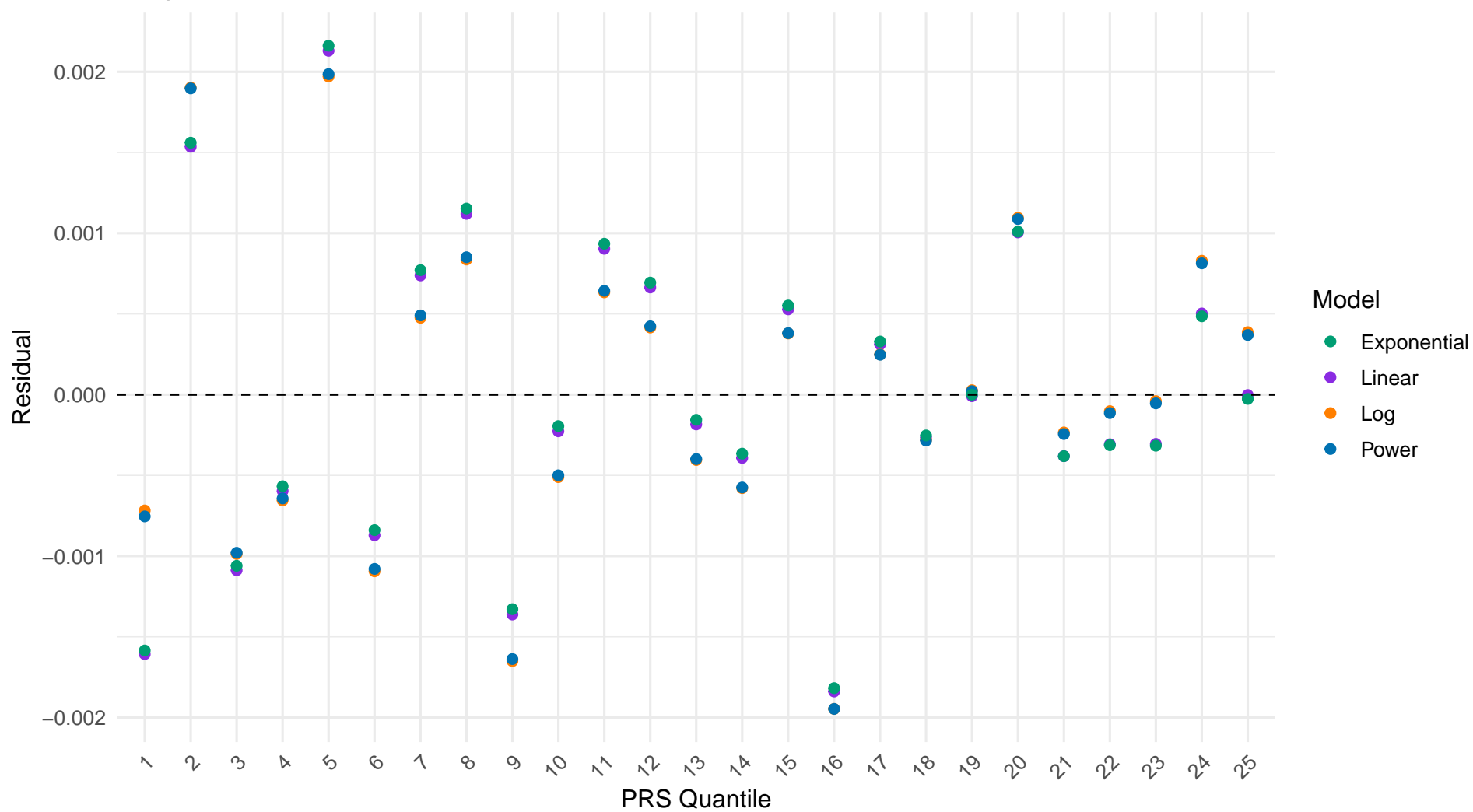Diagnosis: R51

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: R51

Chi2 Test for code: R51

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
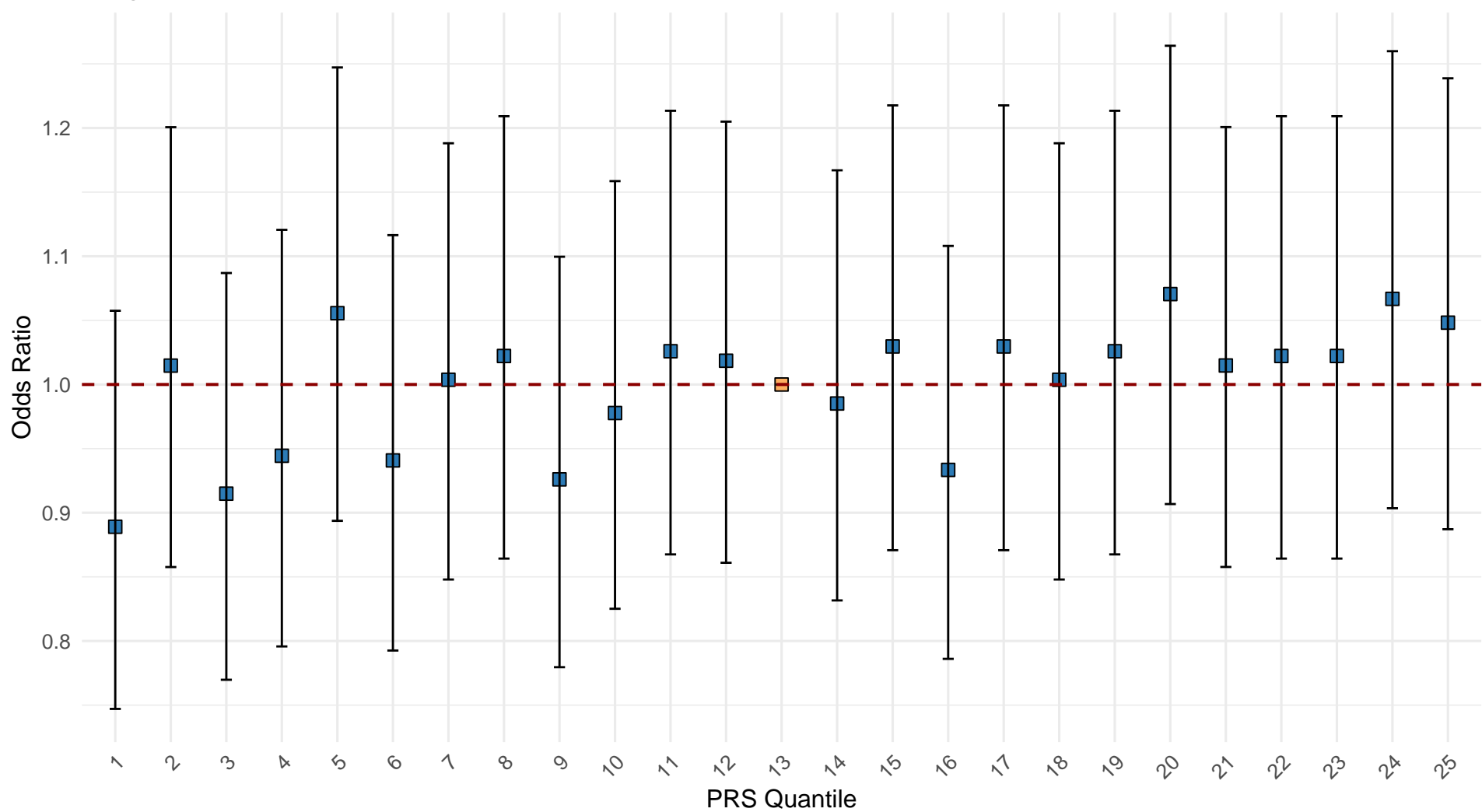Diagnosis: R51

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.89	0.75	1.06
2	1.01	0.86	1.2
3	0.91	0.77	1.09
4	0.94	0.8	1.12
5	1.06	0.89	1.25
6	0.94	0.79	1.12
7	1	0.85	1.19
8	1.02	0.86	1.21
9	0.93	0.78	1.1
10	0.98	0.83	1.16
11	1.03	0.87	1.21
12	1.02	0.86	1.2
13	1	1	1
14	0.99	0.83	1.17
15	1.03	0.87	1.22
16	0.93	0.79	1.11
17	1.03	0.87	1.22
18	1	0.85	1.19
19	1.03	0.87	1.21
20	1.07	0.91	1.26
21	1.01	0.86	1.2
22	1.02	0.86	1.21
23	1.02	0.86	1.21
24	1.07	0.9	1.26
25	1.05	0.89	1.24

```
Linear Model Summary for R51

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0018390 -0.0003918 -0.0001844  0.0006638  0.0021303

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 2.427e-02  4.064e-04  59.720  < 2e-16 ***
PRS         9.986e-05  2.734e-05   3.652  0.00133 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0009858 on 23 degrees of freedom
Multiple R-squared:  0.3671, Adjusted R-squared:  0.3396
F-statistic: 13.34 on 1 and 23 DF,  p-value: 0.001328


Log Model Summary for R51

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-1.947e-03 -5.789e-04 -4.025e-05  4.762e-04  1.971e-03

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0234824  0.0005857   40.09  < 2e-16 ***
log(PRS)    0.0009001  0.0002381    3.78 0.000969 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0009731 on 23 degrees of freedom
Multiple R-squared:  0.3832, Adjusted R-squared:  0.3564
F-statistic: 14.29 on 1 and 23 DF,  p-value: 0.0009694


Exponential Model Summary for R51

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q    Median        3Q       Max
-0.072934 -0.014559 -0.006128  0.026909  0.083741

Coefficients:
             Estimate Std. Error   t value Pr(>|t|)
(Intercept) -3.719213   0.016211 -229.427  < 2e-16 ***
PRS          0.003984   0.001090    3.654  0.00132 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.03932 on 23 degrees of freedom
Multiple R-squared:  0.3673, Adjusted R-squared:  0.3398
F-statistic: 13.35 on 1 and 23 DF,  p-value: 0.001323


Power Model Summary for R51

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0235191  0.0005654  41.597  < 2e-16 ***
b 0.0358630  0.0096371   3.721  0.00112 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0009727 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 3.614e-07
```

Prevalence analysis and model fitting for diagnosis: R60
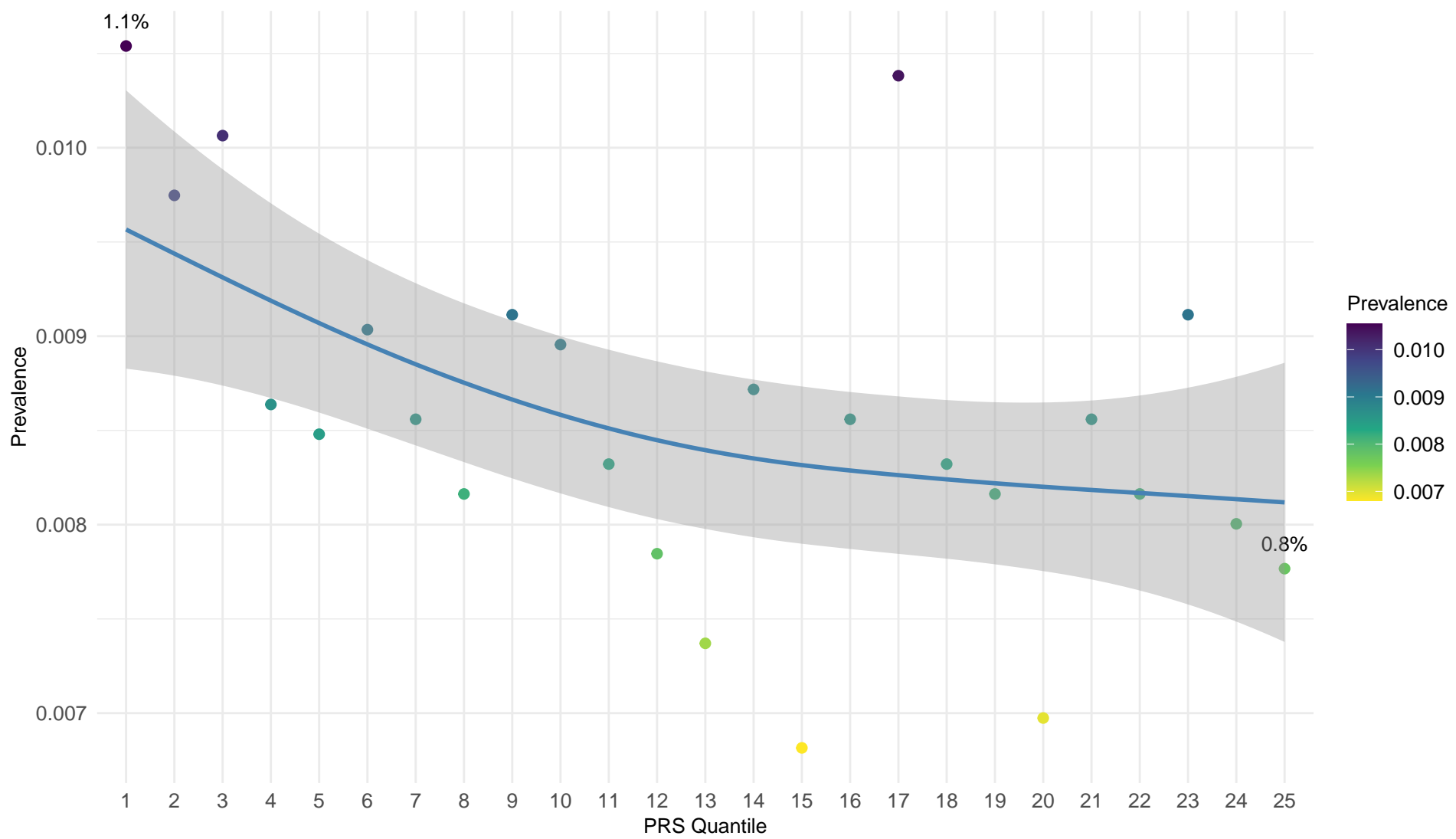
FIGURE 1:Prevalence of R60 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.01231
2	0.01142
3	0.01179
4	0.01005
5	0.00989
6	0.01052
7	0.01002
8	0.00957
9	0.0107
10	0.01048
11	0.00975
12	0.00921
13	0.00855
14	0.01022
15	0.00796
16	0.01006
17	0.01212
18	0.00978
19	0.00952
20	0.00814
21	0.01002
22	0.00956
23	0.01071
24	0.00933
25	0.00908

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Power	−275.88747	1.856004e−05	0.3591952
2	Log	−275.59440	1.877889e−05	0.3516389
3	Linear	−271.24576	2.234671e−05	0.2284563
4	Exponential (lm)	−41.03414	2.220133e−05	0.2334756

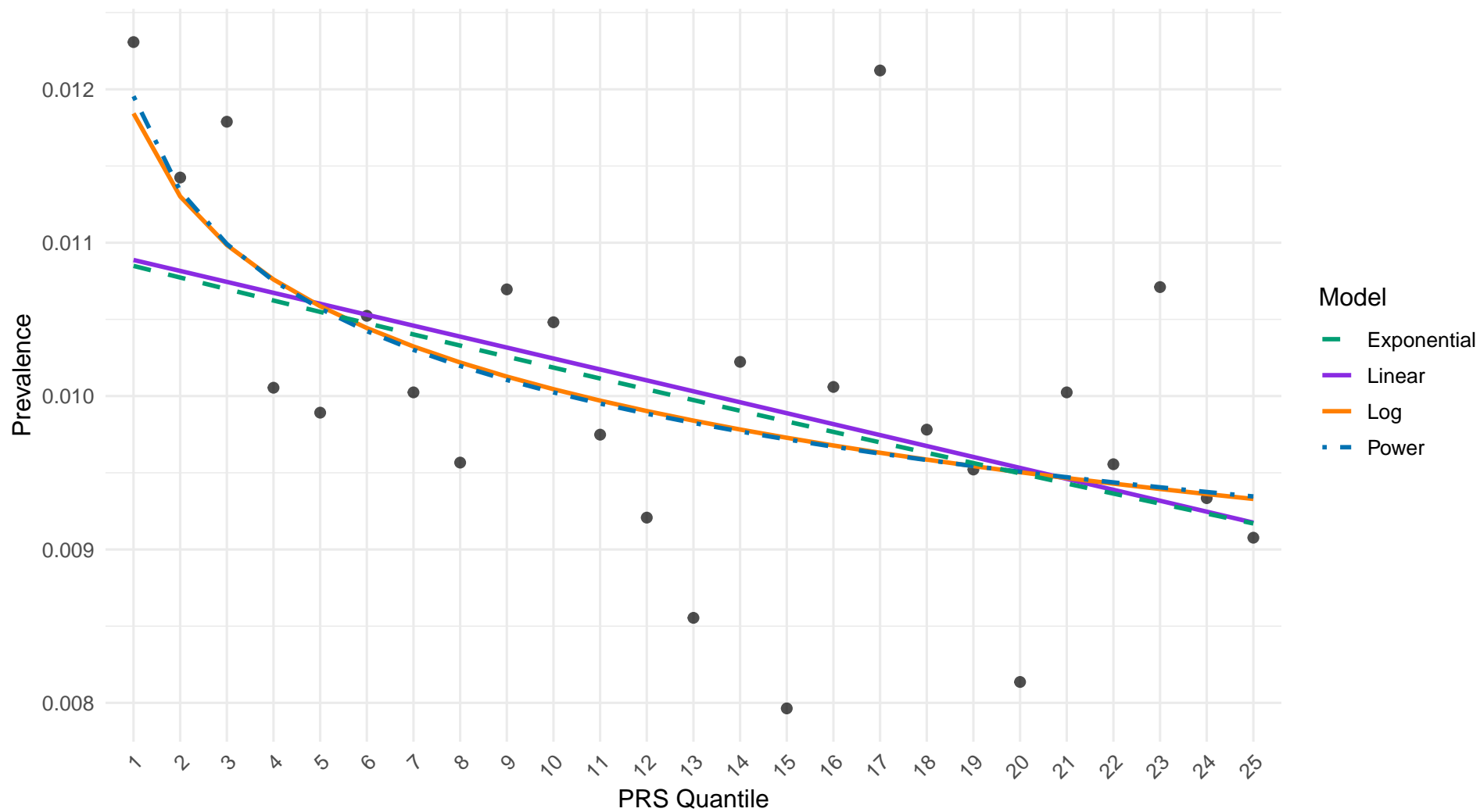FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
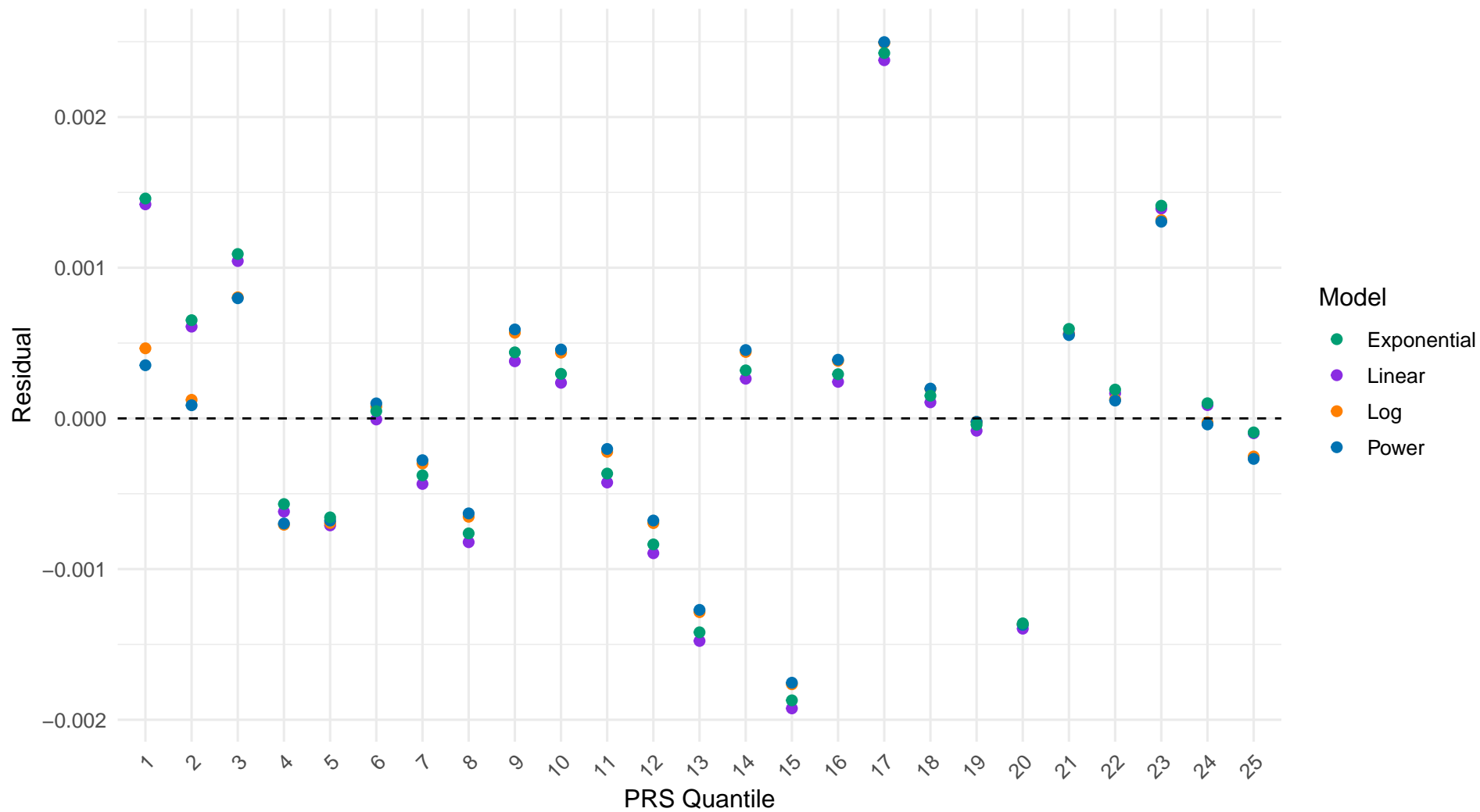Diagnosis: R60

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: R60

Chi2 Test for code: R60

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
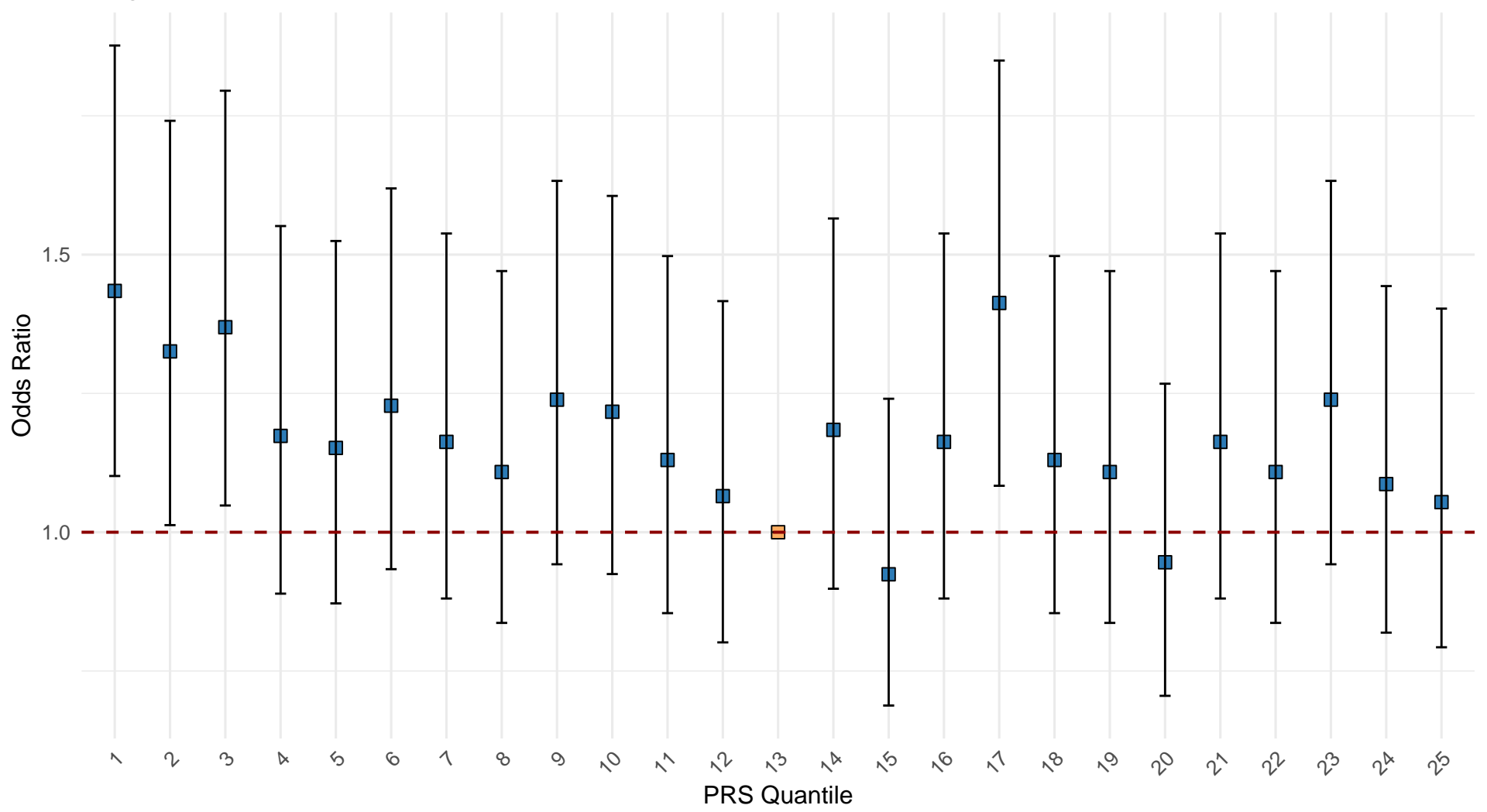Diagnosis: R60

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.43	1.1	1.88
2	1.33	1.01	1.74
3	1.37	1.05	1.8
4	1.17	0.89	1.55
5	1.15	0.87	1.52
6	1.23	0.93	1.62
7	1.16	0.88	1.54
8	1.11	0.84	1.47
9	1.24	0.94	1.63
10	1.22	0.92	1.61
11	1.13	0.85	1.5
12	1.07	0.8	1.42
13	1	1	1
14	1.18	0.9	1.57
15	0.92	0.69	1.24
16	1.16	0.88	1.54
17	1.41	1.08	1.85
18	1.13	0.85	1.5
19	1.11	0.84	1.47
20	0.95	0.71	1.27
21	1.16	0.88	1.54
22	1.11	0.84	1.47
23	1.24	0.94	1.63
24	1.09	0.82	1.44
25	1.05	0.79	1.4

```
Linear Model Summary for R60

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-1.925e-03 -6.188e-04  8.823e-05  3.792e-04  2.377e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.096e-02  4.064e-04   26.96   <2e-16 ***
PRS         -7.134e-05  2.734e-05   -2.61   0.0157 *
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0009857 on 23 degrees of freedom
Multiple R-squared:  0.2285, Adjusted R-squared:  0.1949
F-statistic:  6.81 on 1 and 23 DF,  p-value: 0.01567


Log Model Summary for R60

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q      Median        3Q        Max
-0.0017645 -0.0006528  0.0000797  0.0004410  0.0024924

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0118428  0.0005439  21.776  < 2e-16 ***
log(PRS)    -0.0007808  0.0002211  -3.532  0.00178 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0009036 on 23 degrees of freedom
Multiple R-squared:  0.3516, Adjusted R-squared:  0.3234
F-statistic: 12.47 on 1 and 23 DF,  p-value: 0.001784


Exponential Model Summary for R60

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q       Max
-0.21105 -0.05501  0.01084  0.04186  0.22317

Coefficients:
             Estimate Std. Error   t value Pr(>|t|)
(Intercept) -4.516708   0.040603 -111.240   <2e-16 ***
PRS         -0.007007   0.002731   -2.565   0.0173 *
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.09848 on 23 degrees of freedom
Multiple R-squared:  0.2225, Adjusted R-squared:  0.1887
F-statistic: 6.581 on 1 and 23 DF,  p-value: 0.01729


Power Model Summary for R60

Formula: prevalence ~ a * PRS^b

Parameters:
    Estimate Std. Error t value Pr(>|t|)
a  0.0119550  0.0005789  20.652  2.4e-16 ***
b -0.0765065  0.0203610  -3.758  0.00103 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008983 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 4.506e-07
```

Prevalence analysis and model fitting for diagnosis: T84
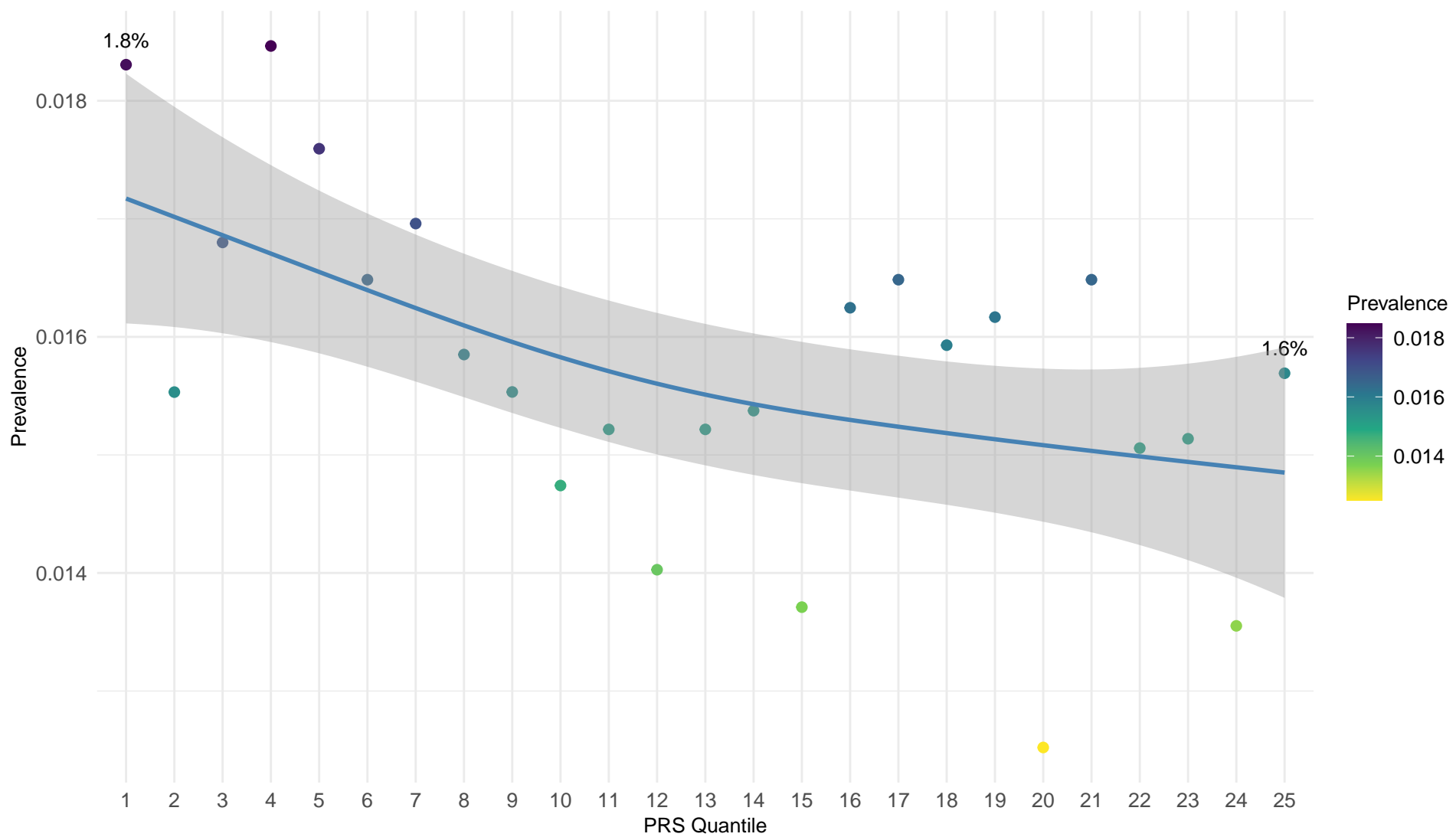
FIGURE 1:Prevalence of T84 across SCZ–PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.02138
2	0.01821
3	0.01968
4	0.02149
5	0.02052
6	0.0192
7	0.01986
8	0.01858
9	0.01823
10	0.01725
11	0.01783
12	0.01646
13	0.01766
14	0.01803
15	0.01602
16	0.01909
17	0.01925
18	0.01872
19	0.01886
20	0.01461
21	0.01931
22	0.01763
23	0.01779
24	0.0158
25	0.01834

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−255.69370	4.162751e−05	0.3457592
2	Power	−255.64961	4.170099e−05	0.3446043
3	Linear	−253.82242	4.486296e−05	0.2949090
4	Exponential (lm)	−52.63129	4.456958e−05	0.2995199

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
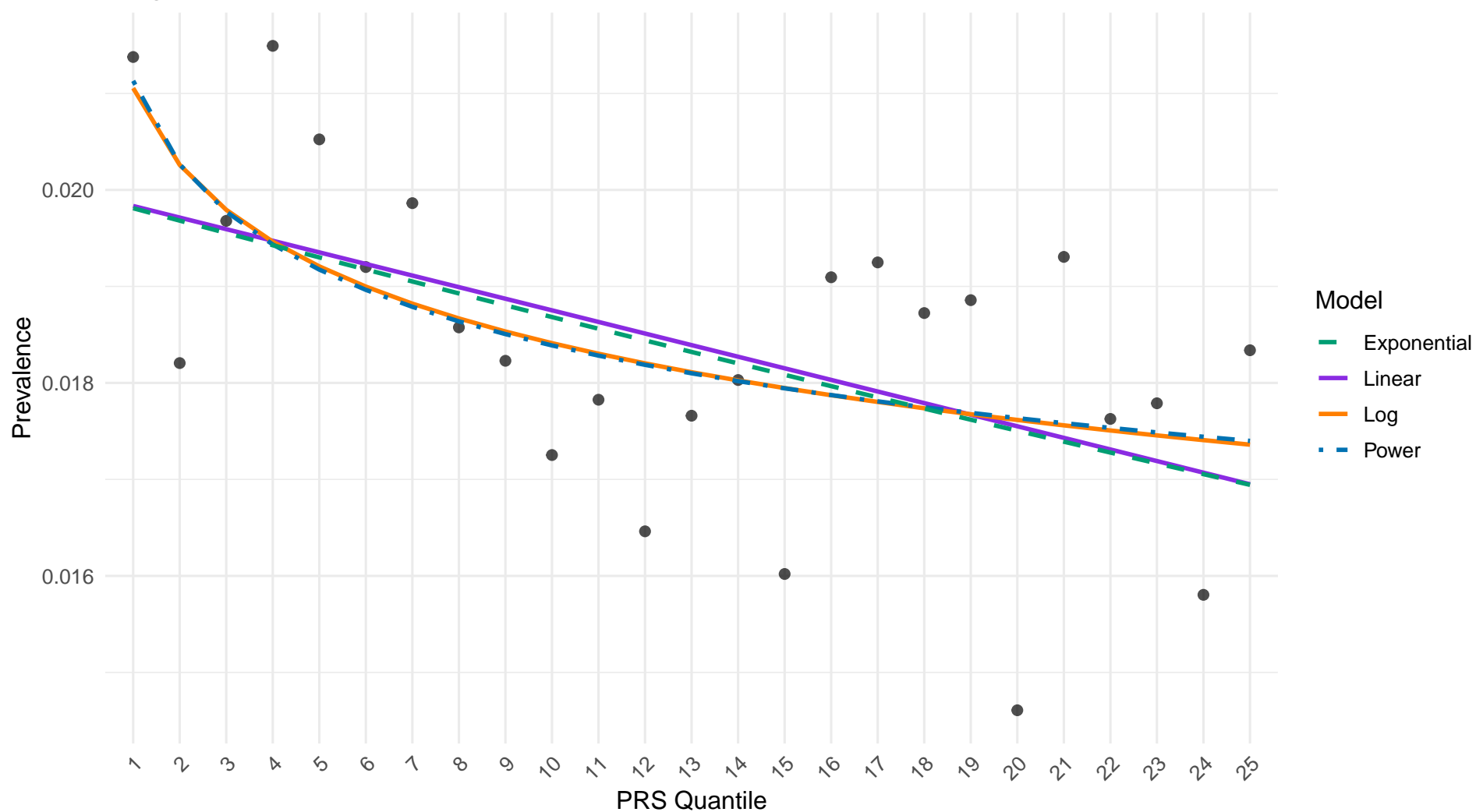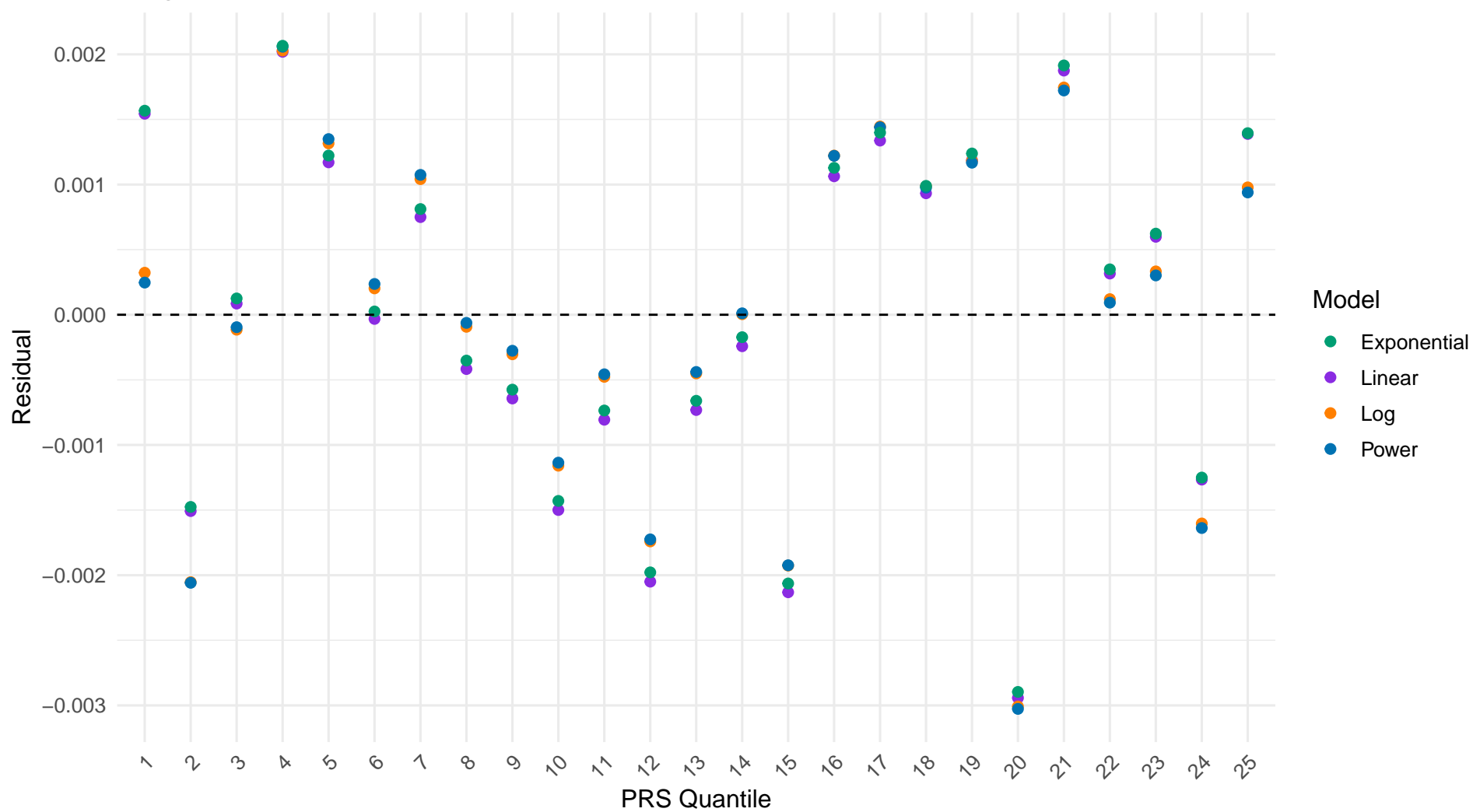Diagnosis: T84

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: T84

Chi2 Test for code: T84

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
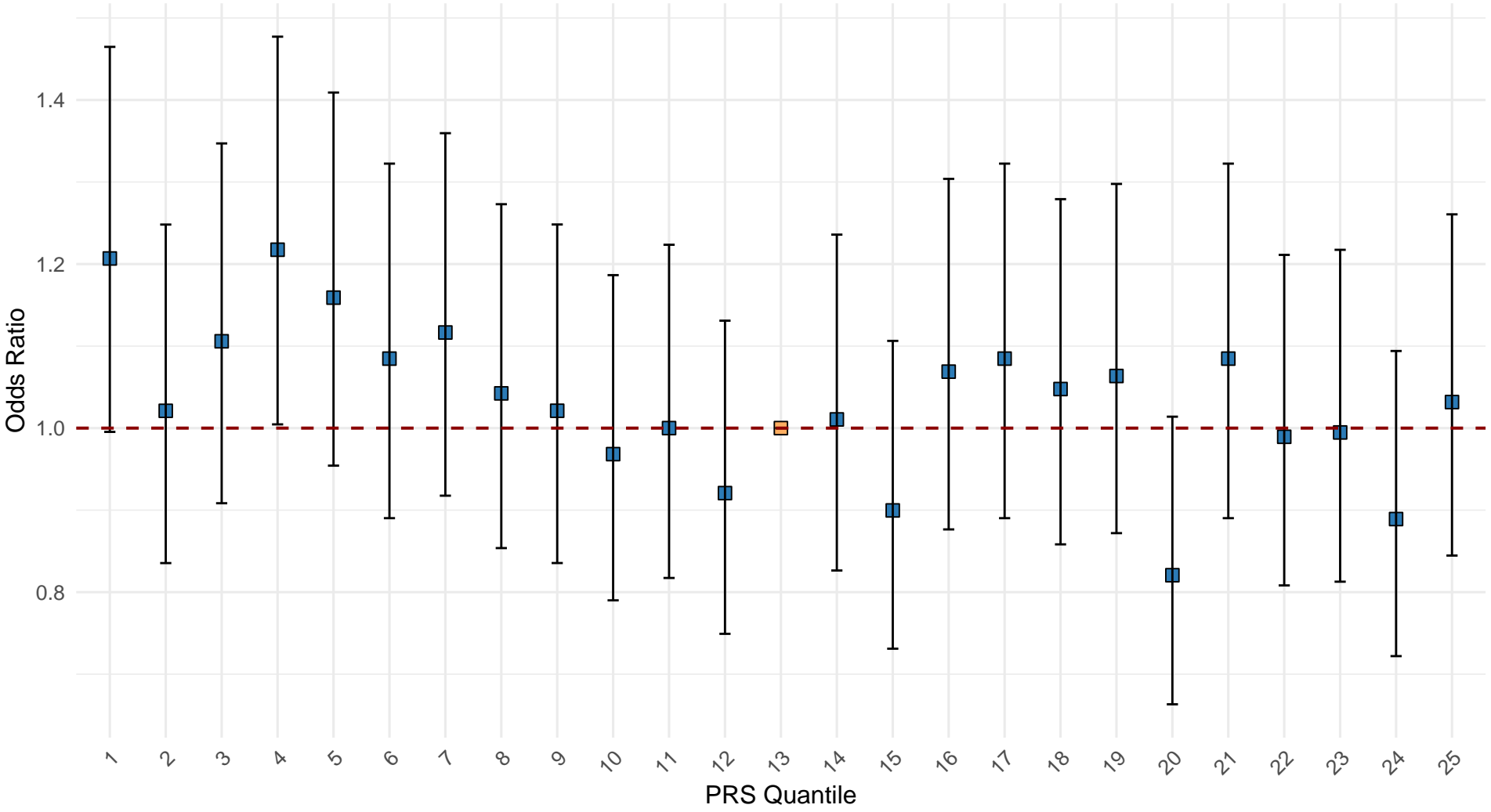Diagnosis: T84

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.21	1	1.46
2	1.02	0.84	1.25
3	1.11	0.91	1.35
4	1.22	1	1.48
5	1.16	0.95	1.41
6	1.08	0.89	1.32
7	1.12	0.92	1.36
8	1.04	0.85	1.27
9	1.02	0.84	1.25
10	0.97	0.79	1.19
11	1	0.82	1.22
12	0.92	0.75	1.13
13	1	1	1
14	1.01	0.83	1.24
15	0.9	0.73	1.11
16	1.07	0.88	1.3
17	1.08	0.89	1.32
18	1.05	0.86	1.28
19	1.06	0.87	1.3
20	0.82	0.66	1.01
21	1.08	0.89	1.32
22	0.99	0.81	1.21
23	0.99	0.81	1.22
24	0.89	0.72	1.09
25	1.03	0.84	1.26

```
Linear Model Summary for T84

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-2.943e-03 -8.063e-04  8.576e-05  1.170e-03  2.020e-03

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.995e-02  5.758e-04  34.651  < 2e-16 ***
PRS         -1.201e-04  3.874e-05  -3.102  0.00503 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001397 on 23 degrees of freedom
Multiple R-squared:  0.2949,	Adjusted R-squared:  0.2643
F-statistic:  9.62 on 1 and 23 DF,  p-value: 0.005029


Log Model Summary for T84

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median        3Q        Max
-0.0030083 -0.0004768  0.0001199  0.0010415  0.0020291

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0210543  0.0008097  26.002  < 2e-16 ***
log(PRS)    -0.0011476  0.0003292  -3.486  0.00199 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001345 on 23 degrees of freedom
Multiple R-squared:  0.3458,	Adjusted R-squared:  0.3173
F-statistic: 12.16 on 1 and 23 DF,  p-value: 0.001993


Exponential Model Summary for T84

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q       Max
-0.180893 -0.040429  0.006383  0.061421  0.104453

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.915059   0.032198 -121.593  < 2e-16 ***
PRS         -0.006512   0.002166   -3.007  0.00629 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.07809 on 23 degrees of freedom
Multiple R-squared:  0.2821,	Adjusted R-squared:  0.2509
F-statistic: 9.039 on 1 and 23 DF,  p-value: 0.006293


Power Model Summary for T84

Formula: prevalence ~ a * PRS^b

Parameters:
    Estimate Std. Error t value Pr(>|t|)
a  0.0211299  0.0008558  24.689  < 2e-16 ***
b -0.0603531  0.0169025  -3.571  0.00162 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001347 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.317e-06
```

Prevalence analysis and model fitting for diagnosis: W03
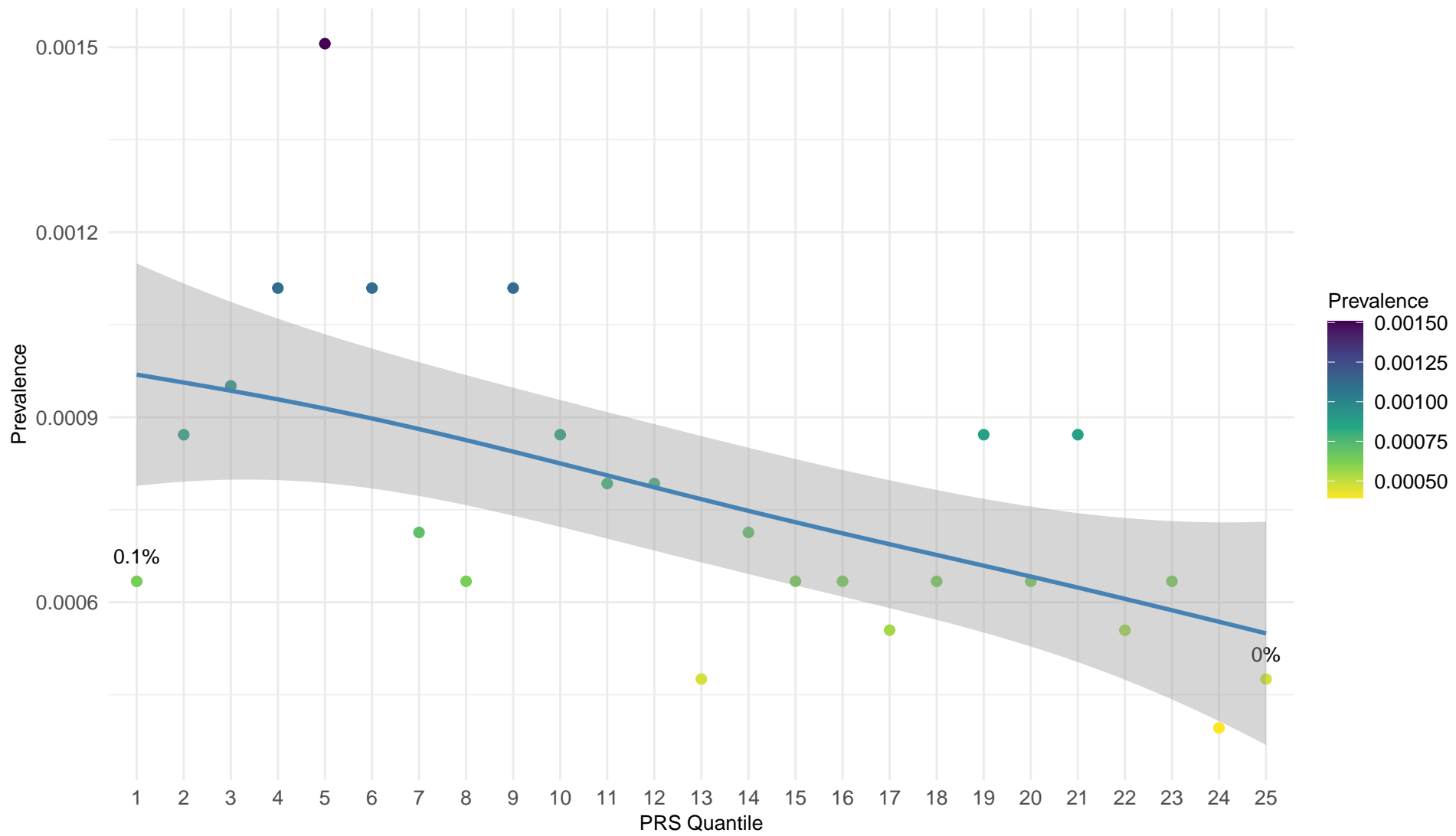

FIGURE 1:Prevalence of W03 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00074
2	0.00102
3	0.00111
4	0.00129
5	0.00176
6	0.00129
7	0.00084
8	0.00074
9	0.0013
10	0.00102
11	0.00093
12	0.00093
13	0.00055
14	0.00084
15	0.00074
16	0.00075
17	0.00065
18	0.00075
19	0.00102
20	0.00074
21	0.00102
22	0.00065
23	0.00075
24	0.00046
25	0.00056

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−341.680370	1.335485e−06	0.3474187
2	Log	−336.808210	1.622845e−06	0.2070009
3	Power	−335.783292	1.690759e−06	0.1738149
4	Exponential (lm)	5.202219	1.371990e−06	0.3295806

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
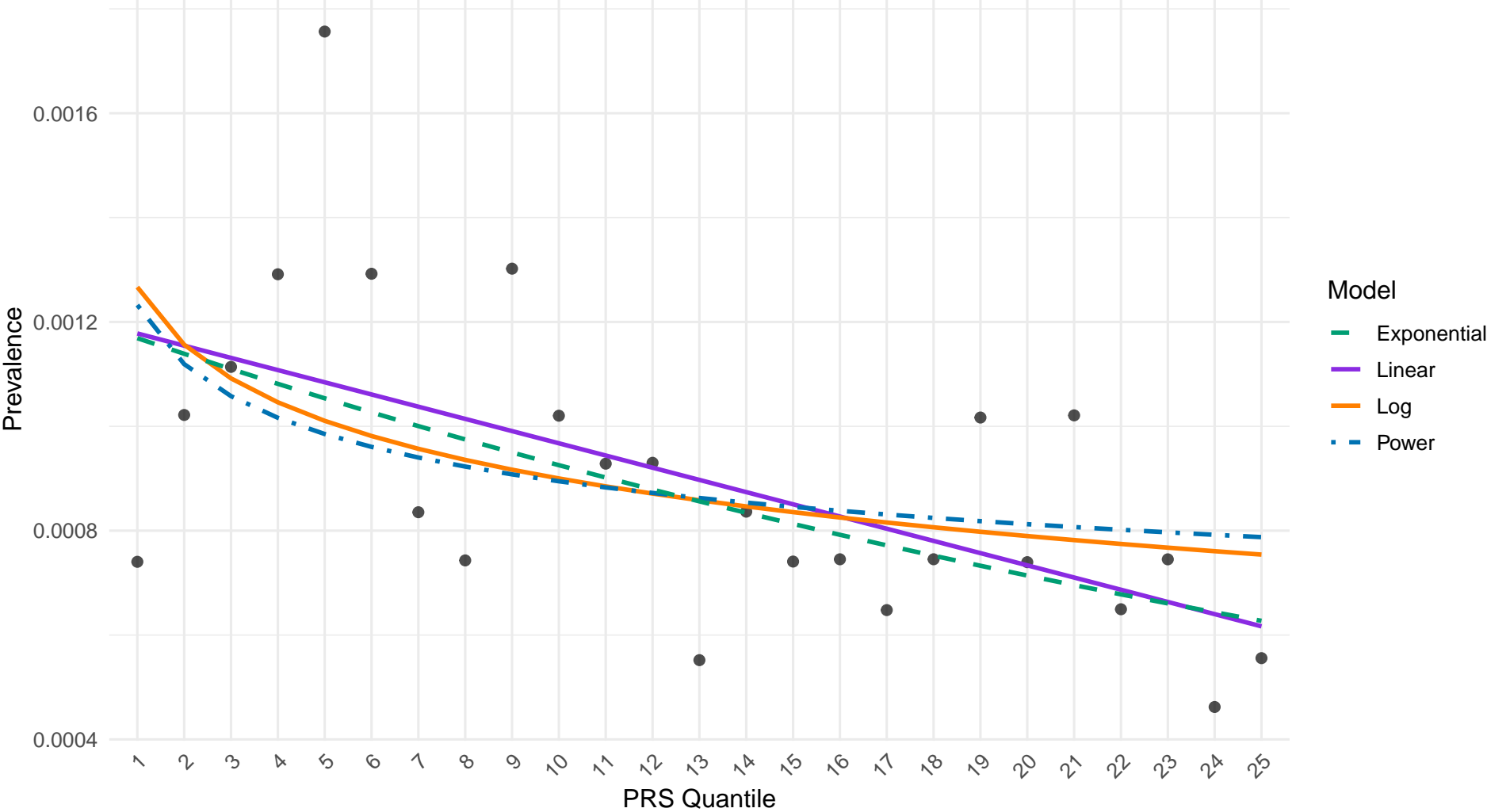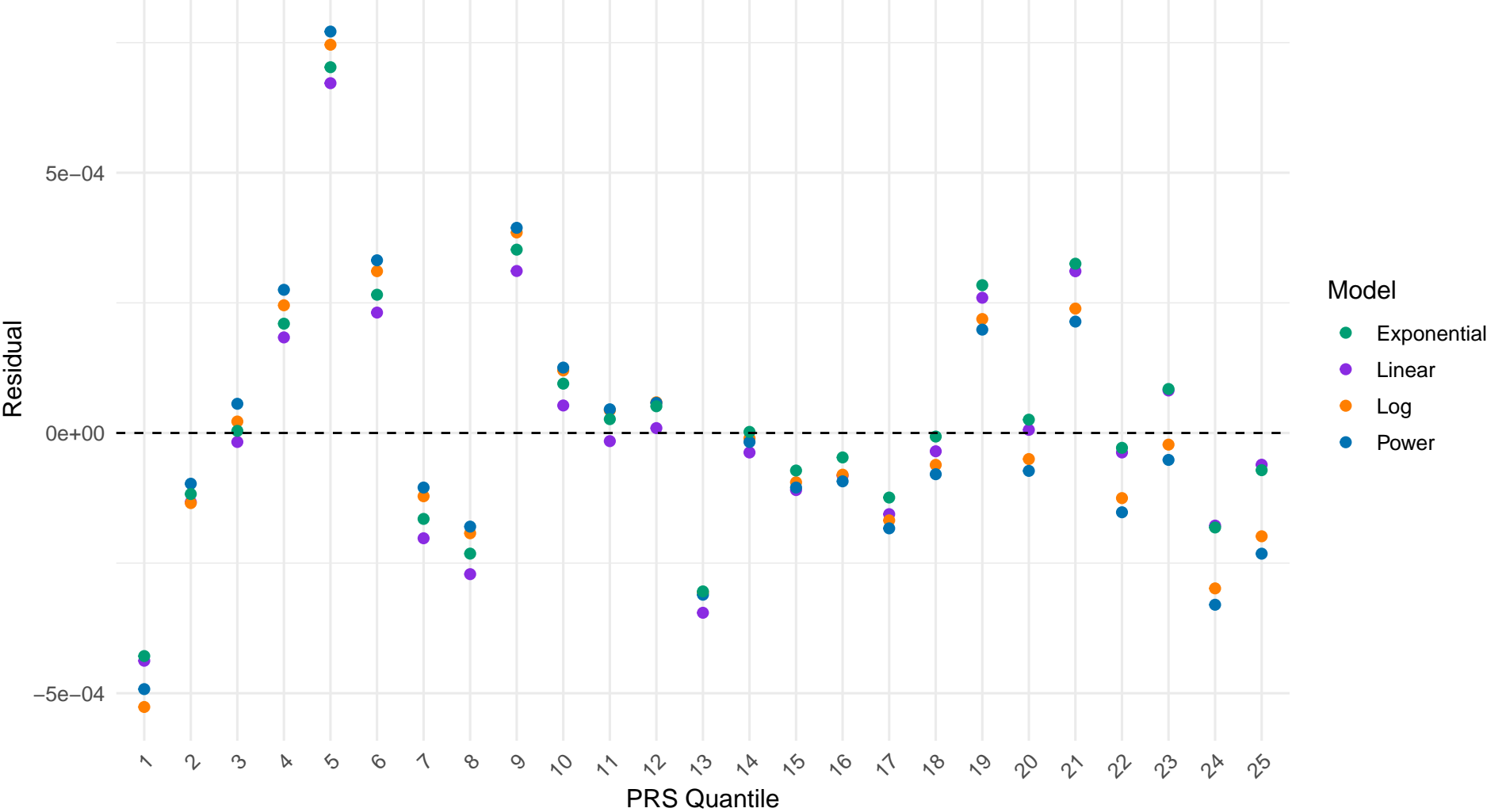Diagnosis: W03

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: W03

```
Chi2 Test for code: W03
```

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

```
OR (Q1 vs Others): 1.009  [95% CI: 0.995 - 1.024]
```

```
Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data:  matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949
```

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
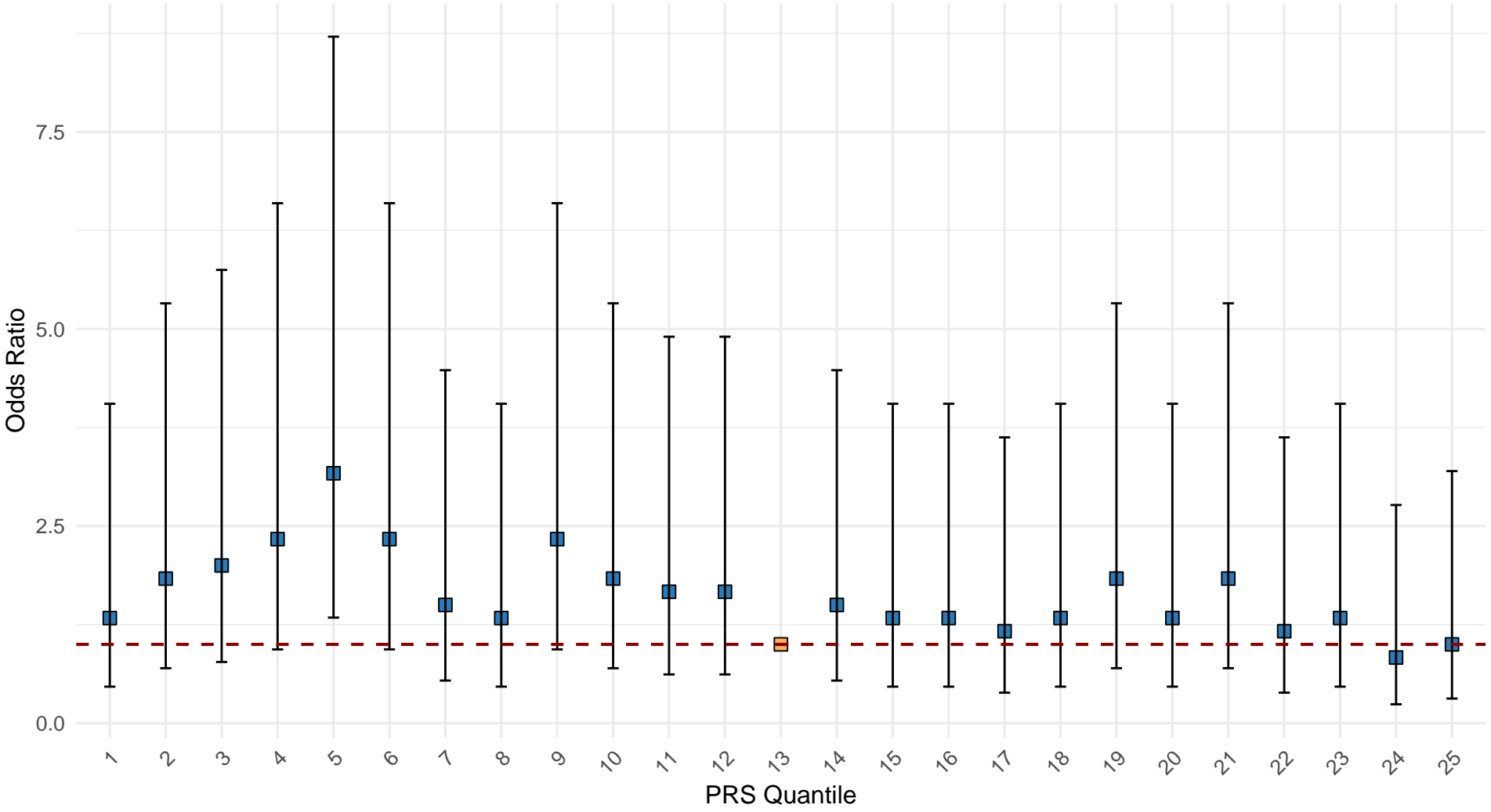Diagnosis: W03

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	1.33	0.46	4.05
2	1.83	0.7	5.33
3	2	0.78	5.75
4	2.33	0.94	6.59
5	3.17	1.34	8.71
6	2.33	0.94	6.6
7	1.5	0.54	4.48
8	1.33	0.46	4.05
9	2.33	0.94	6.6
10	1.83	0.7	5.33
11	1.67	0.62	4.9
12	1.67	0.62	4.9
13	1	1	1
14	1.5	0.54	4.48
15	1.33	0.46	4.05
16	1.33	0.46	4.05
17	1.17	0.39	3.63
18	1.33	0.46	4.05
19	1.83	0.7	5.33
20	1.33	0.46	4.05
21	1.83	0.7	5.33
22	1.17	0.39	3.63
23	1.33	0.46	4.05
24	0.83	0.24	2.77
25	1	0.31	3.2

```
Linear Model Summary for W03

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min        1Q     Median        3Q        Max
-4.376e-04 -1.328e-04 -3.514e-05  8.165e-05  6.721e-04

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.201e-03  9.935e-05  12.091  1.9e-11 ***
PRS         -2.339e-05  6.683e-06  -3.499  0.00193 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.000241 on 23 degrees of freedom
Multiple R-squared:  0.3474, Adjusted R-squared:  0.319
F-statistic: 12.24 on 1 and 23 DF,  p-value: 0.001932


Log Model Summary for W03

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min        1Q     Median        3Q        Max
-5.265e-04 -1.347e-04 -5.007e-05  1.202e-04  7.460e-04

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.267e-03  1.599e-04   7.923 5.06e-08 ***
log(PRS)    -1.592e-04  6.499e-05  -2.450   0.0223 *
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0002656 on 23 degrees of freedom
Multiple R-squared:  0.207, Adjusted R-squared:  0.1725
F-statistic: 6.004 on 1 and 23 DF,  p-value: 0.0223


Exponential Model Summary for W03

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.45673 -0.12100  0.00255  0.12038  0.51101

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) -6.725739   0.102368 -65.702   <2e-16 ***
PRS         -0.025941   0.006886  -3.767    0.001 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.2483 on 23 degrees of freedom
Multiple R-squared:  0.3816, Adjusted R-squared:  0.3547
F-statistic: 14.19 on 1 and 23 DF,  p-value: 0.001001


Power Model Summary for W03

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.0012324  0.0001837   6.710 7.62e-07 ***
b -0.1390994  0.0647276  -2.149   0.0424 *
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0002711 on 23 degrees of freedom

Number of iterations to convergence: 11
Achieved convergence tolerance: 3.354e-06
```

Prevalence analysis and model fitting for diagnosis: Y04
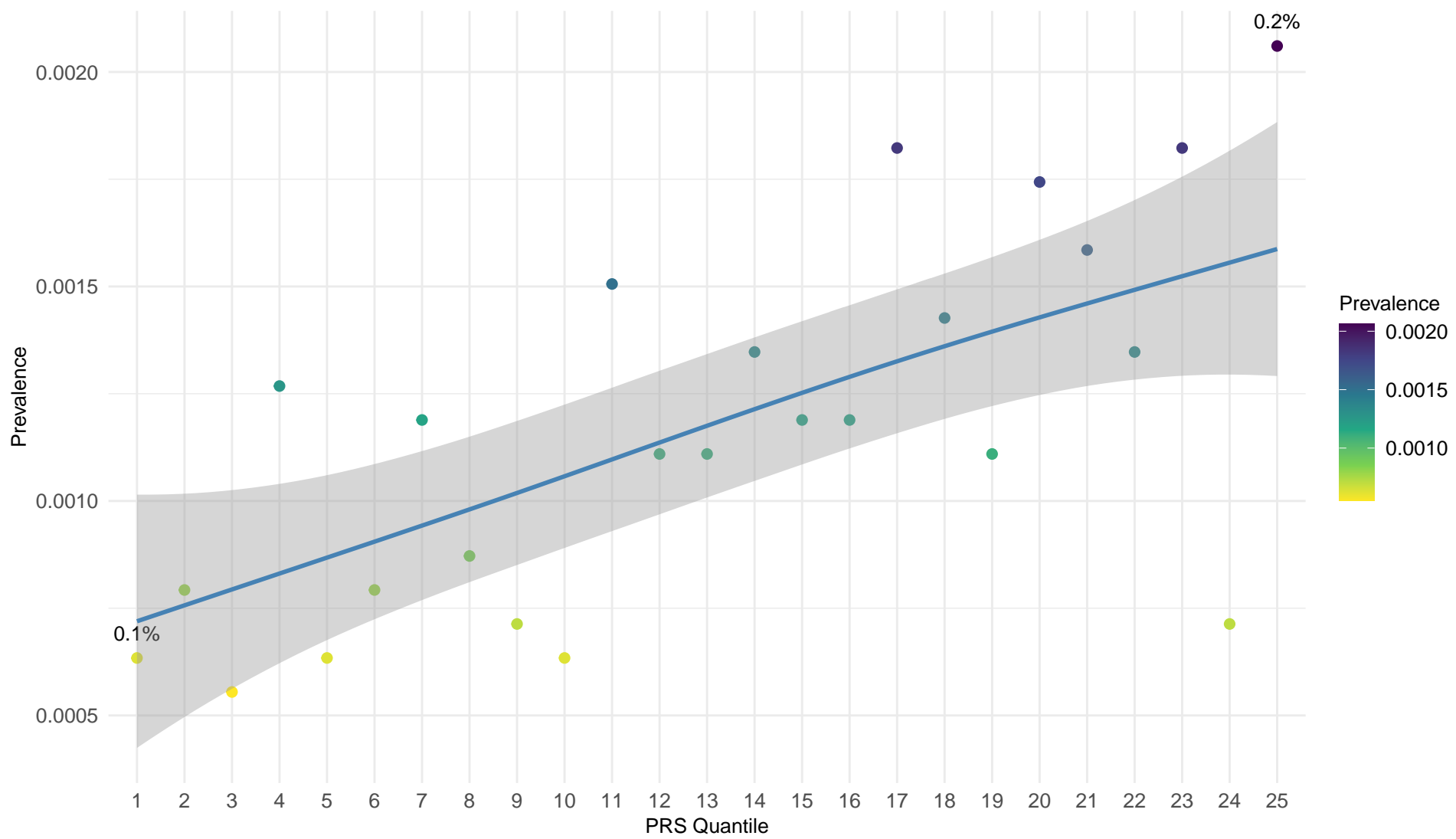
FIGURE 1:Prevalence of Y04 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00074
2	0.00093
3	0.00065
4	0.00148
5	0.00074
6	0.00092
7	0.00139
8	0.00102
9	0.00084
10	0.00074
11	0.00176
12	0.0013
13	0.00129
14	0.00158
15	0.00139
16	0.0014
17	0.00213
18	0.00168
19	0.00129
20	0.00203
21	0.00186
22	0.00158
23	0.00214
24	0.00083
25	0.00241

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−319.51257	3.241404e−06	0.4676082
2	Power	−318.68984	3.349850e−06	0.4497961
3	Log	−316.95698	3.590280e−06	0.4103063
4	Exponential (lm)	13.24391	3.381372e−06	0.4446187

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
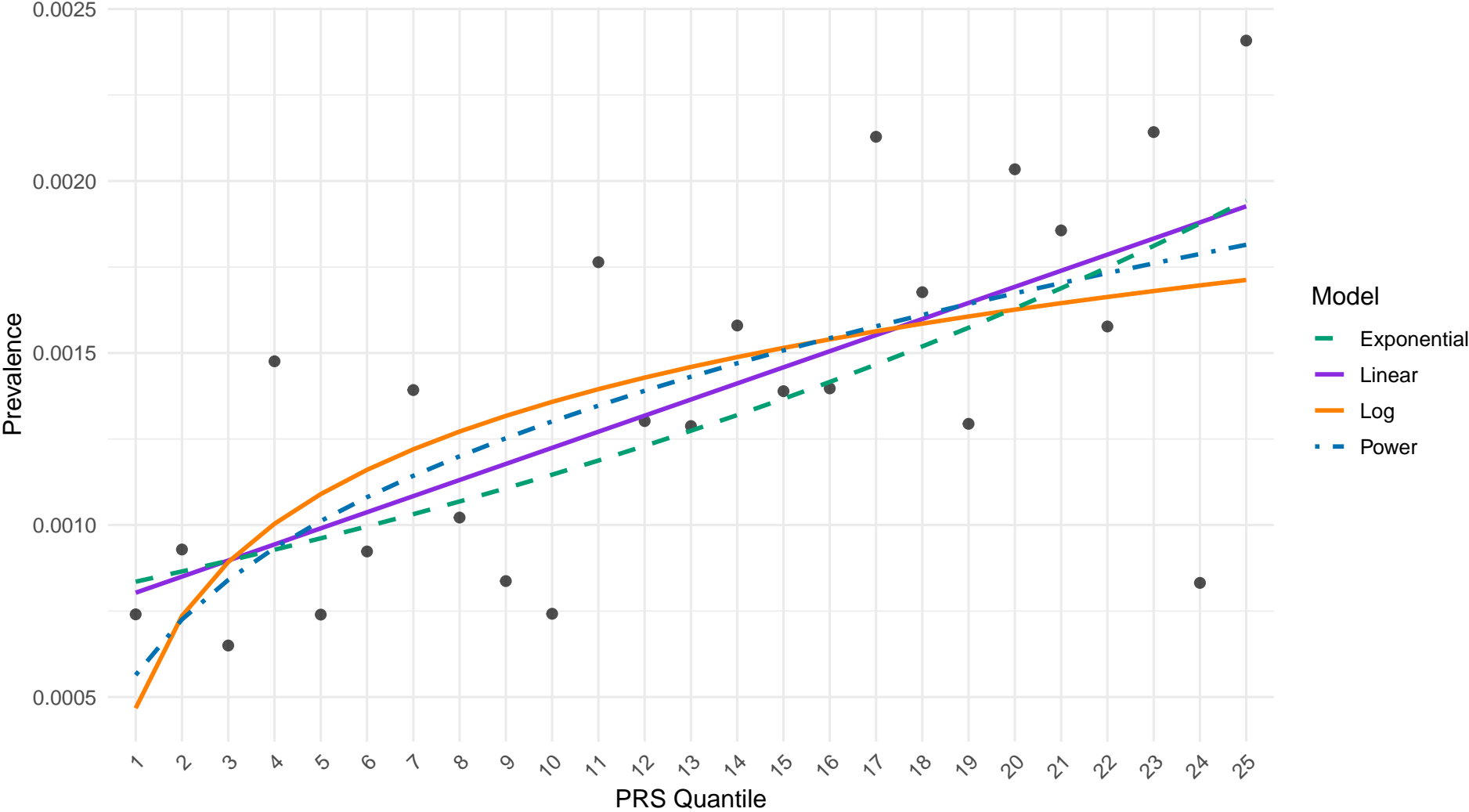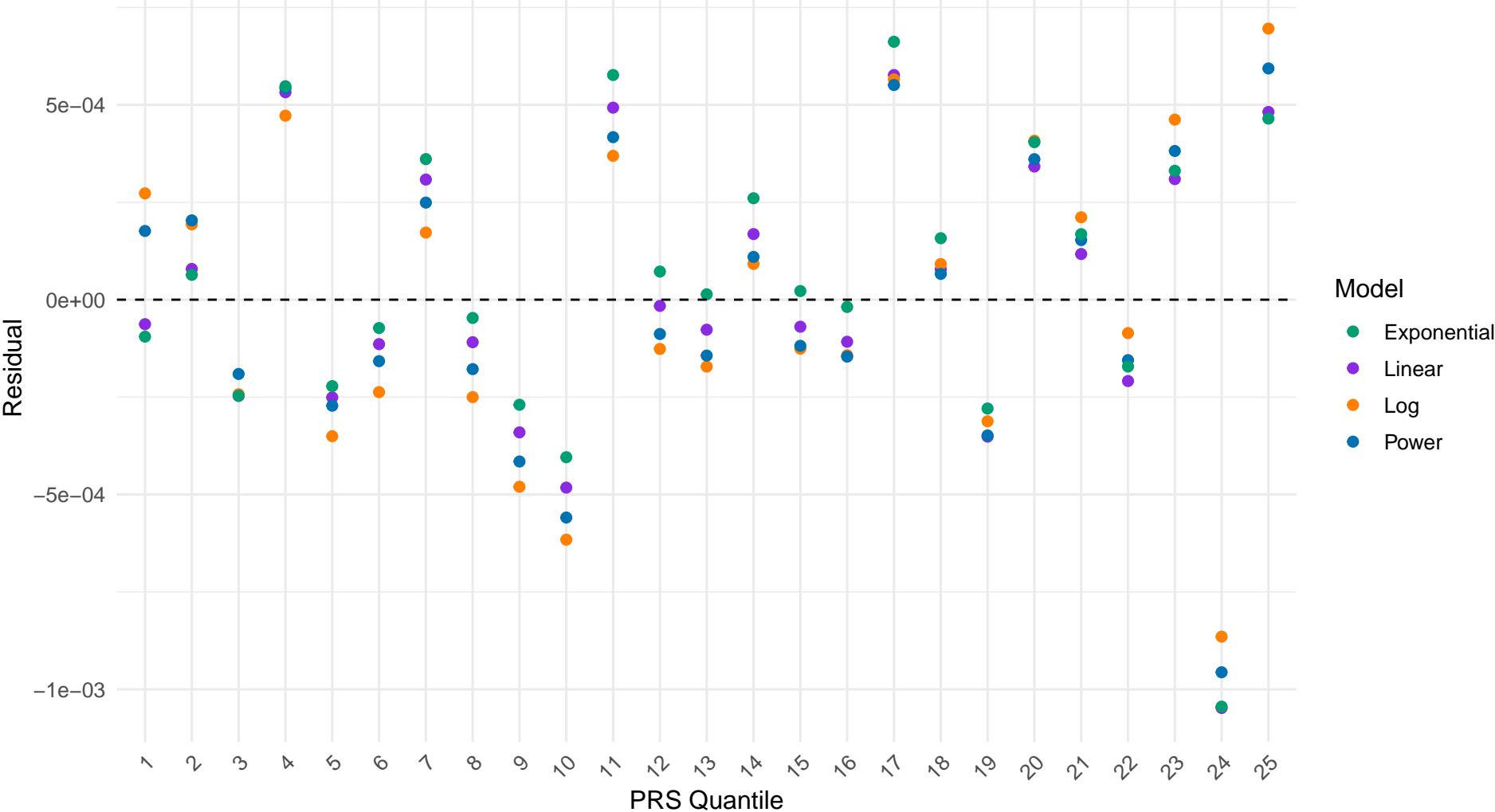Diagnosis: Y04

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: Y04

Chi2 Test for code: Y04

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ−PRS quantile (Reference = Quantile 13)
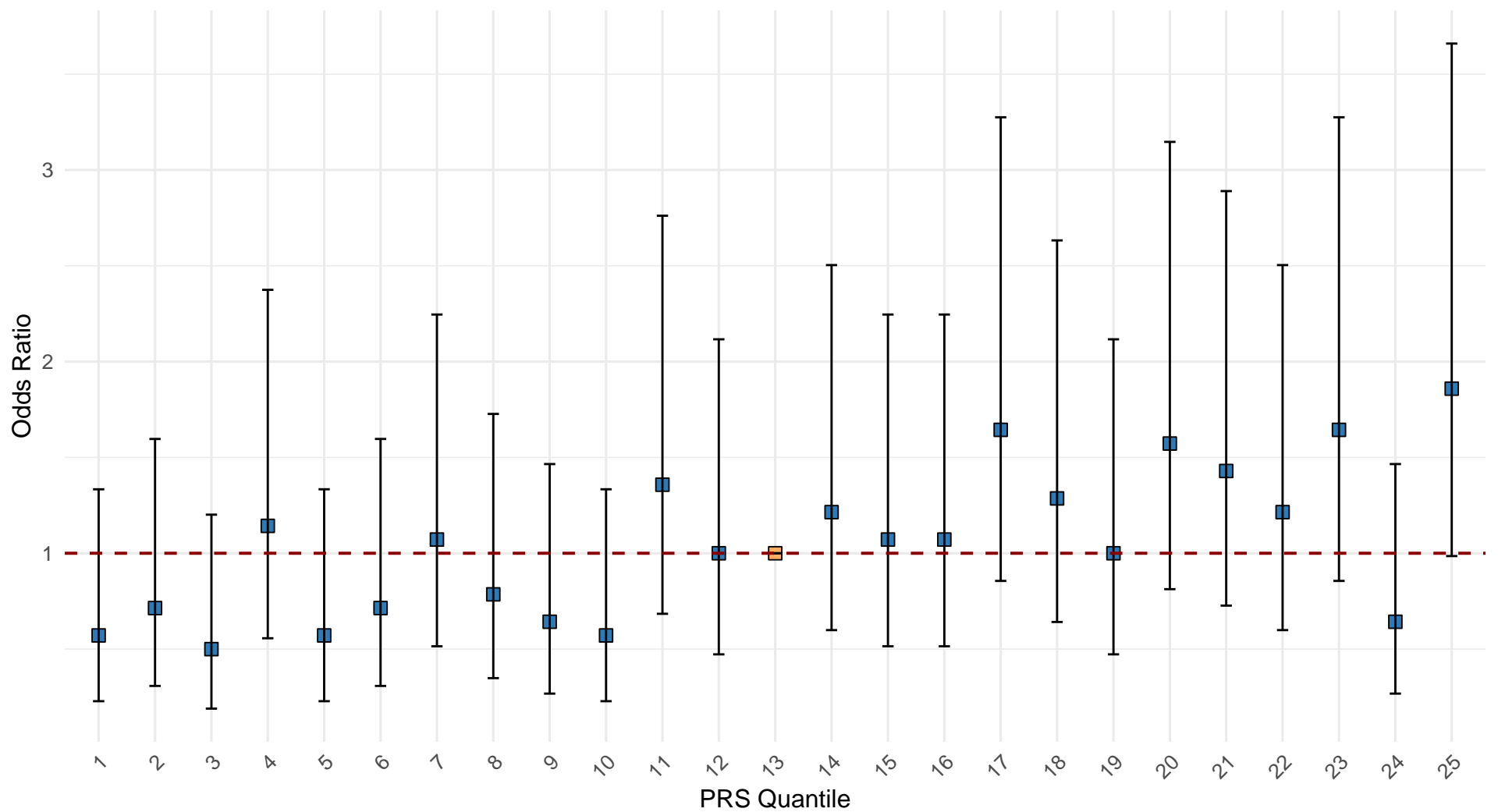Diagnosis: Y04

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.57	0.23	1.33
2	0.71	0.31	1.6
3	0.5	0.19	1.2
4	1.14	0.56	2.37
5	0.57	0.23	1.33
6	0.71	0.31	1.6
7	1.07	0.51	2.25
8	0.79	0.35	1.73
9	0.64	0.27	1.47
10	0.57	0.23	1.33
11	1.36	0.68	2.76
12	1	0.47	2.12
13	1	1	1
14	1.21	0.6	2.5
15	1.07	0.51	2.25
16	1.07	0.51	2.25
17	1.64	0.86	3.28
18	1.29	0.64	2.63
19	1	0.47	2.12
20	1.57	0.81	3.15
21	1.43	0.73	2.89
22	1.21	0.6	2.5
23	1.64	0.86	3.28
24	0.64	0.27	1.47
25	1.86	0.99	3.66

```
Linear Model Summary for Y04

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-1.048e-03 -2.088e-04 -6.287e-05  3.083e-04  5.765e-04

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 7.564e-04  1.548e-04   4.887 6.18e-05 ***
PRS         4.680e-05  1.041e-05   4.495 0.000164 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0003754 on 23 degrees of freedom
Multiple R-squared:  0.4676, Adjusted R-squared:  0.4445
F-statistic:  20.2 on 1 and 23 DF,  p-value: 0.0001641


Log Model Summary for Y04

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-8.647e-04 -2.426e-04 -8.575e-05  2.728e-04  6.957e-04

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) 4.675e-04  2.378e-04   1.966 0.061473 .
log(PRS)    3.867e-04  9.667e-05   4.000 0.000562 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0003951 on 23 degrees of freedom
Multiple R-squared:  0.4103, Adjusted R-squared:  0.3847
F-statistic:     16 on 1 and 23 DF,  p-value: 0.000562


Exponential Model Summary for Y04

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.81339 -0.12055  0.01607  0.18004  0.46380

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -7.123053   0.120230 -59.245  < 2e-16 ***
PRS          0.035188   0.008088   4.351 0.000235 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.2916 on 23 degrees of freedom
Multiple R-squared:  0.4515, Adjusted R-squared:  0.4276
F-statistic: 18.93 on 1 and 23 DF,  p-value: 0.0002348


Power Model Summary for Y04

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0005640  0.0001479   3.813 0.000894 ***
b 0.3630484  0.0963398   3.768 0.000998 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0003816 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.815e-06
```

Prevalence analysis and model fitting for diagnosis: Z01
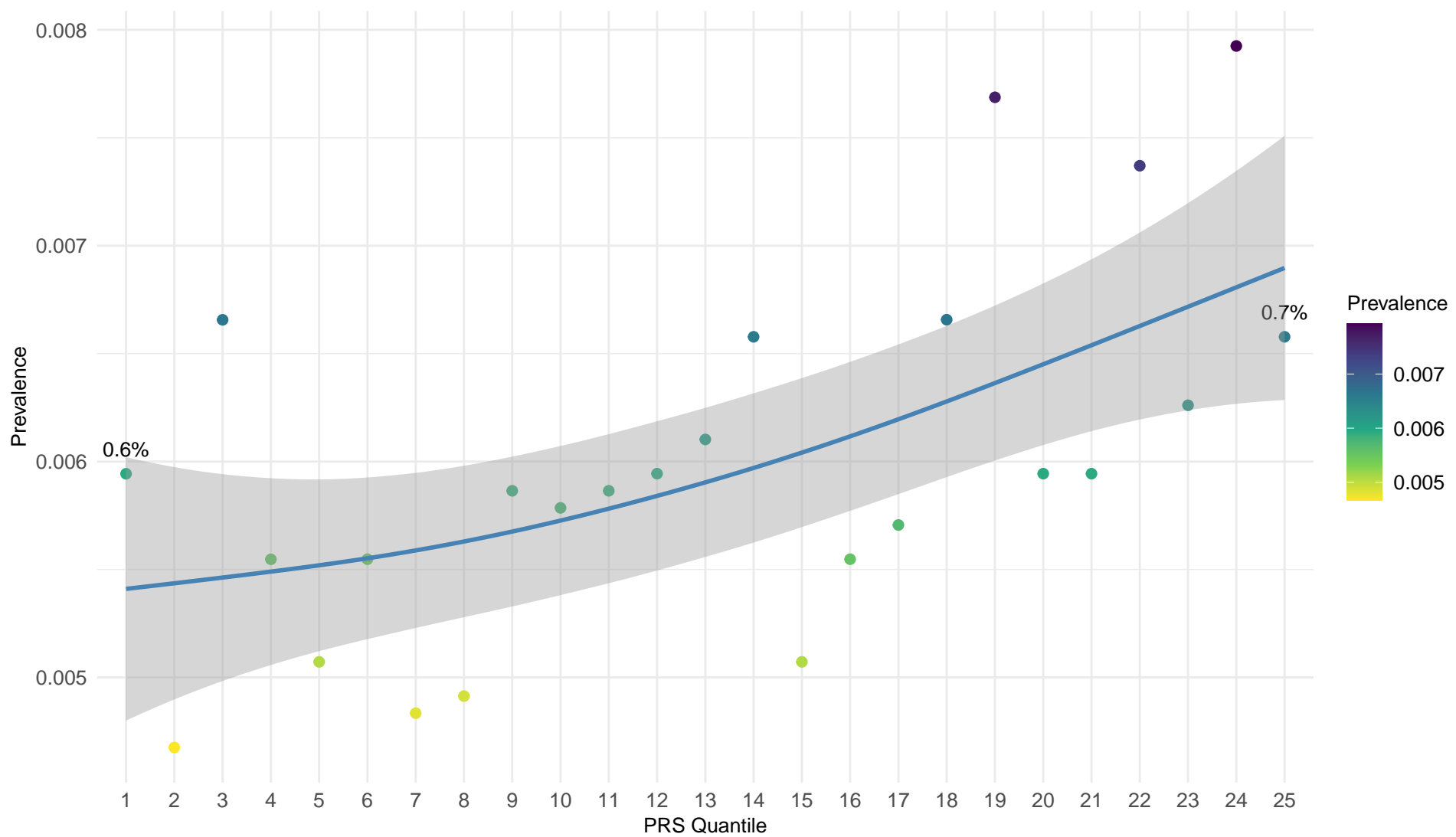
FIGURE 1:Prevalence of Z01 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00694
2	0.00548
3	0.0078
4	0.00646
5	0.00592
6	0.00646
7	0.00566
8	0.00576
9	0.00688
10	0.00677
11	0.00687
12	0.00698
13	0.00708
14	0.00771
15	0.00593
16	0.00652
17	0.00666
18	0.00782
19	0.00897
20	0.00693
21	0.00696
22	0.00863
23	0.00736
24	0.00924
25	0.00769

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−281.96787	1.455296e−05	0.3661021
2	Power	−277.27177	1.756026e−05	0.2351104
3	Log	−276.73924	1.793833e−05	0.2186425
4	Exponential (lm)	−35.14049	1.439021e−05	0.3731914

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
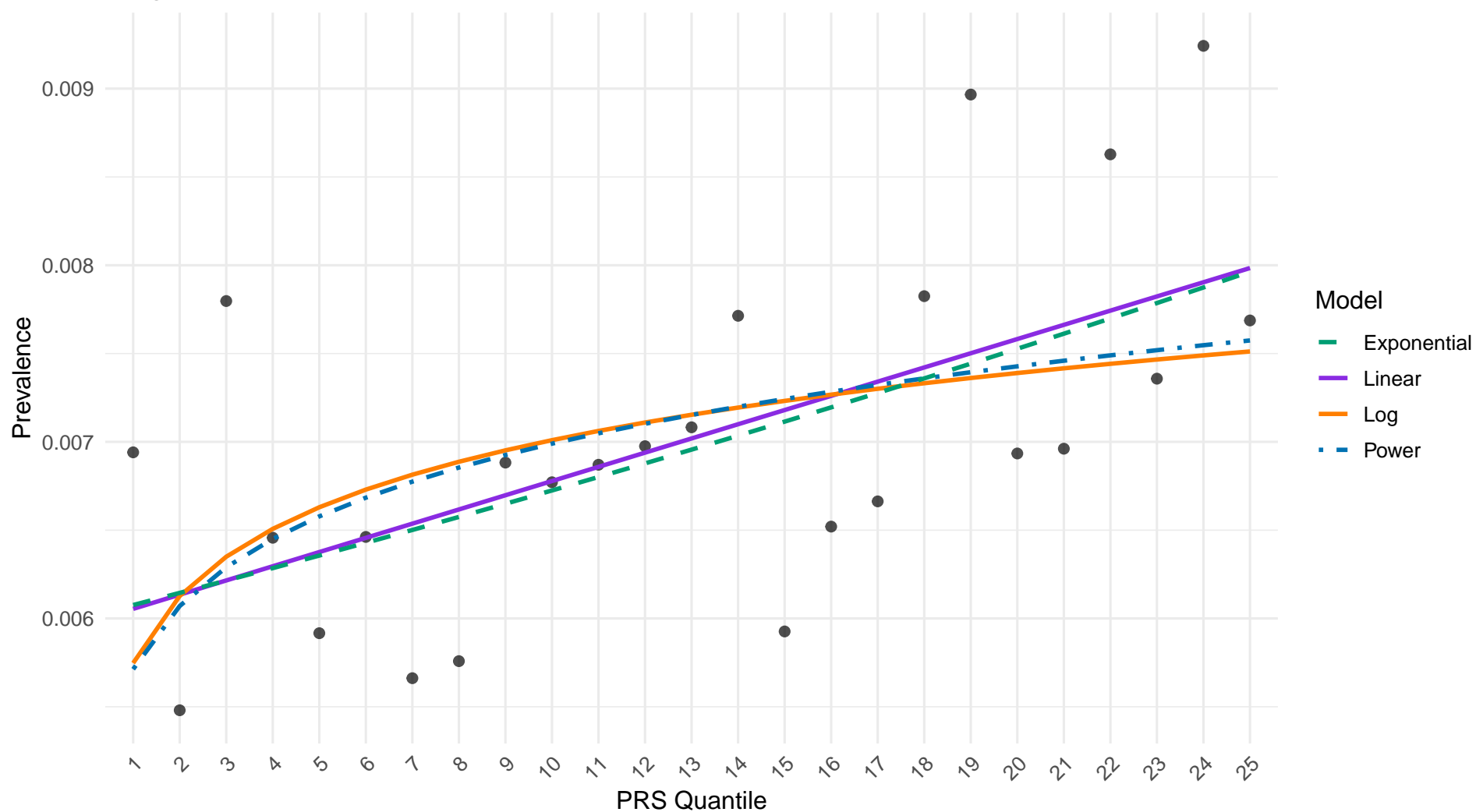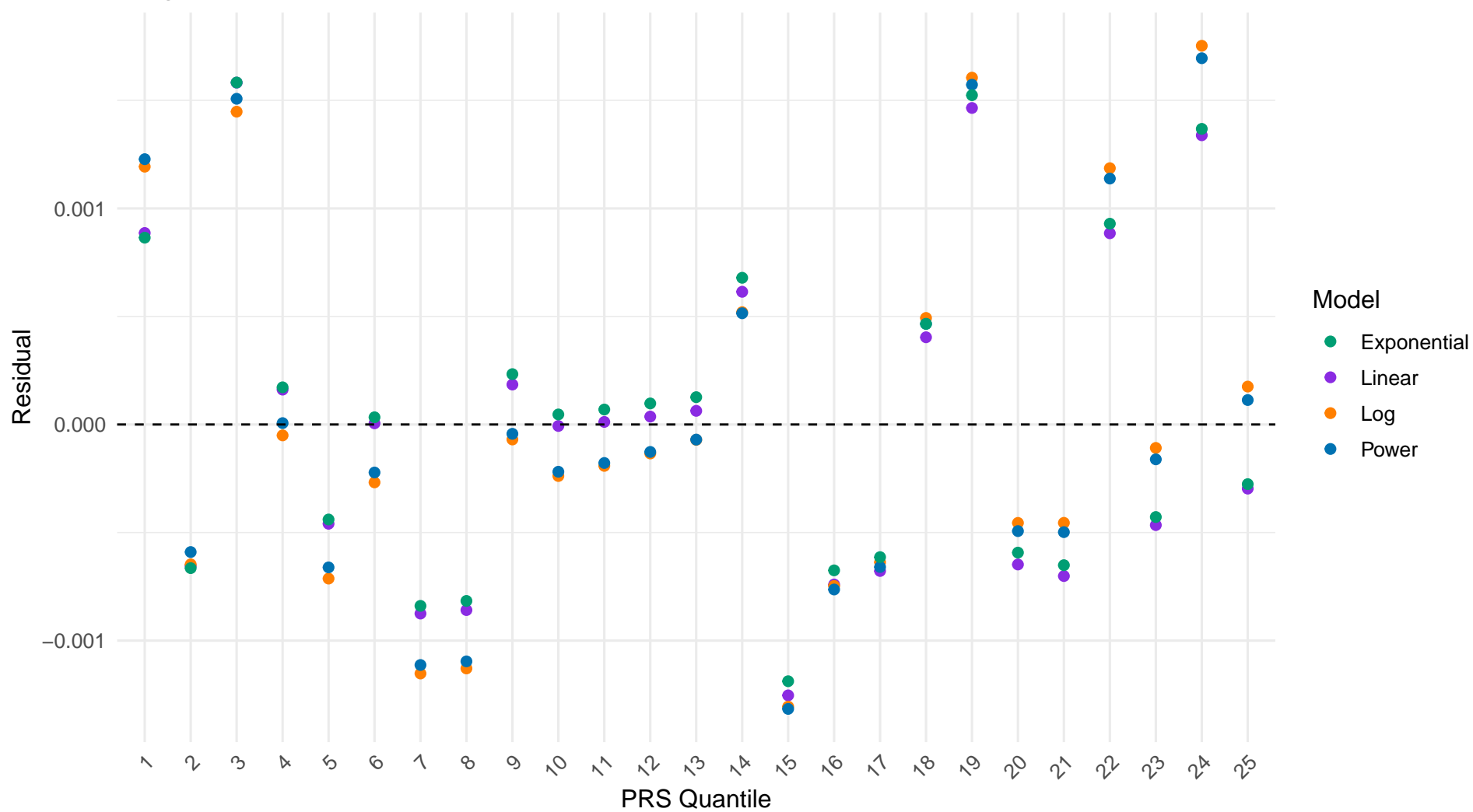Diagnosis: Z01

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: Z01

Chi2 Test for code: Z01

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
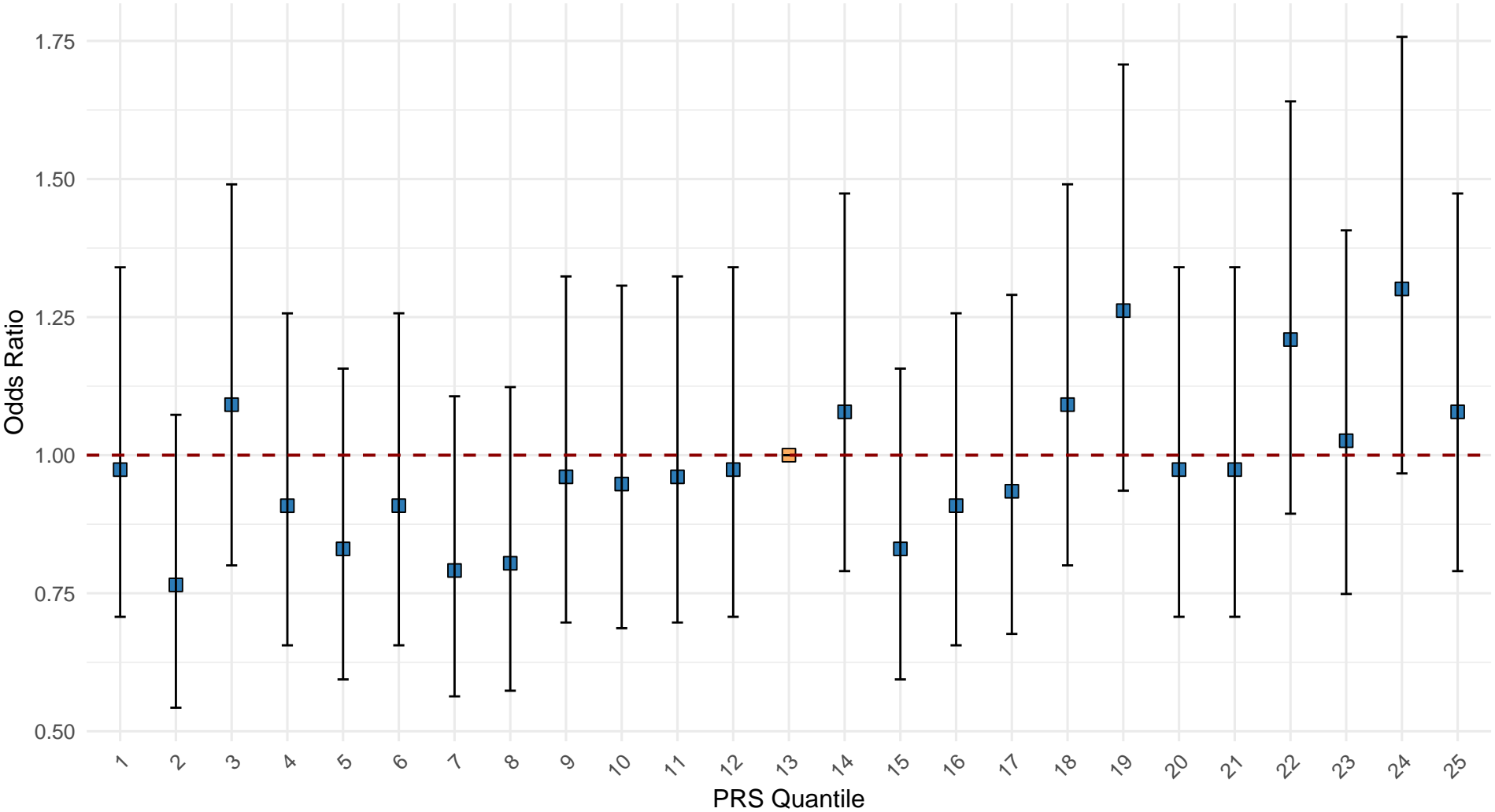Diagnosis: Z01

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.97	0.71	1.34
2	0.77	0.54	1.07
3	1.09	0.8	1.49
4	0.91	0.66	1.26
5	0.83	0.59	1.16
6	0.91	0.66	1.26
7	0.79	0.56	1.11
8	0.8	0.57	1.12
9	0.96	0.7	1.32
10	0.95	0.69	1.31
11	0.96	0.7	1.32
12	0.97	0.71	1.34
13	1	1	1
14	1.08	0.79	1.47
15	0.83	0.59	1.16
16	0.91	0.66	1.26
17	0.93	0.68	1.29
18	1.09	0.8	1.49
19	1.26	0.94	1.71
20	0.97	0.71	1.34
21	0.97	0.71	1.34
22	1.21	0.89	1.64
23	1.03	0.75	1.41
24	1.3	0.97	1.76
25	1.08	0.79	1.47

```
Linear Model Summary for Z01

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-1.254e-03 -6.545e-04  5.370e-06  4.036e-04  1.582e-03

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 5.974e-03  3.280e-04  18.215 3.67e-15 ***
PRS         8.041e-05  2.206e-05   3.645  0.00135 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0007954 on 23 degrees of freedom
Multiple R-squared:  0.3661,  Adjusted R-squared:  0.3385
F-statistic: 13.28 on 1 and 23 DF,  p-value: 0.001353


Log Model Summary for Z01

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0013054 -0.0006375 -0.0001341  0.0004931  0.0017526

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0057474  0.0005315  10.813 1.72e-10 ***
log(PRS)    0.0005482  0.0002161   2.537   0.0184 *
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008831 on 23 degrees of freedom
Multiple R-squared:  0.2186,  Adjusted R-squared:  0.1847
F-statistic: 6.436 on 1 and 23 DF,  p-value: 0.01843


Exponential Model Summary for Z01

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-0.182712 -0.088118  0.006887  0.061354  0.226882

Coefficients:
             Estimate Std. Error   t value Pr(>|t|)
(Intercept) -5.114676   0.045683 -111.961  < 2e-16 ***
PRS          0.011271   0.003073    3.668  0.00128 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.1108 on 23 degrees of freedom
Multiple R-squared:  0.369,  Adjusted R-squared:  0.3416
F-statistic: 13.45 on 1 and 23 DF,  p-value: 0.001279


Power Model Summary for Z01

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0057127  0.0004814  11.866 2.77e-11 ***
b 0.0876223  0.0331726   2.641   0.0146 *
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0008738 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 2.706e-06
```

Prevalence analysis and model fitting for diagnosis: Z37
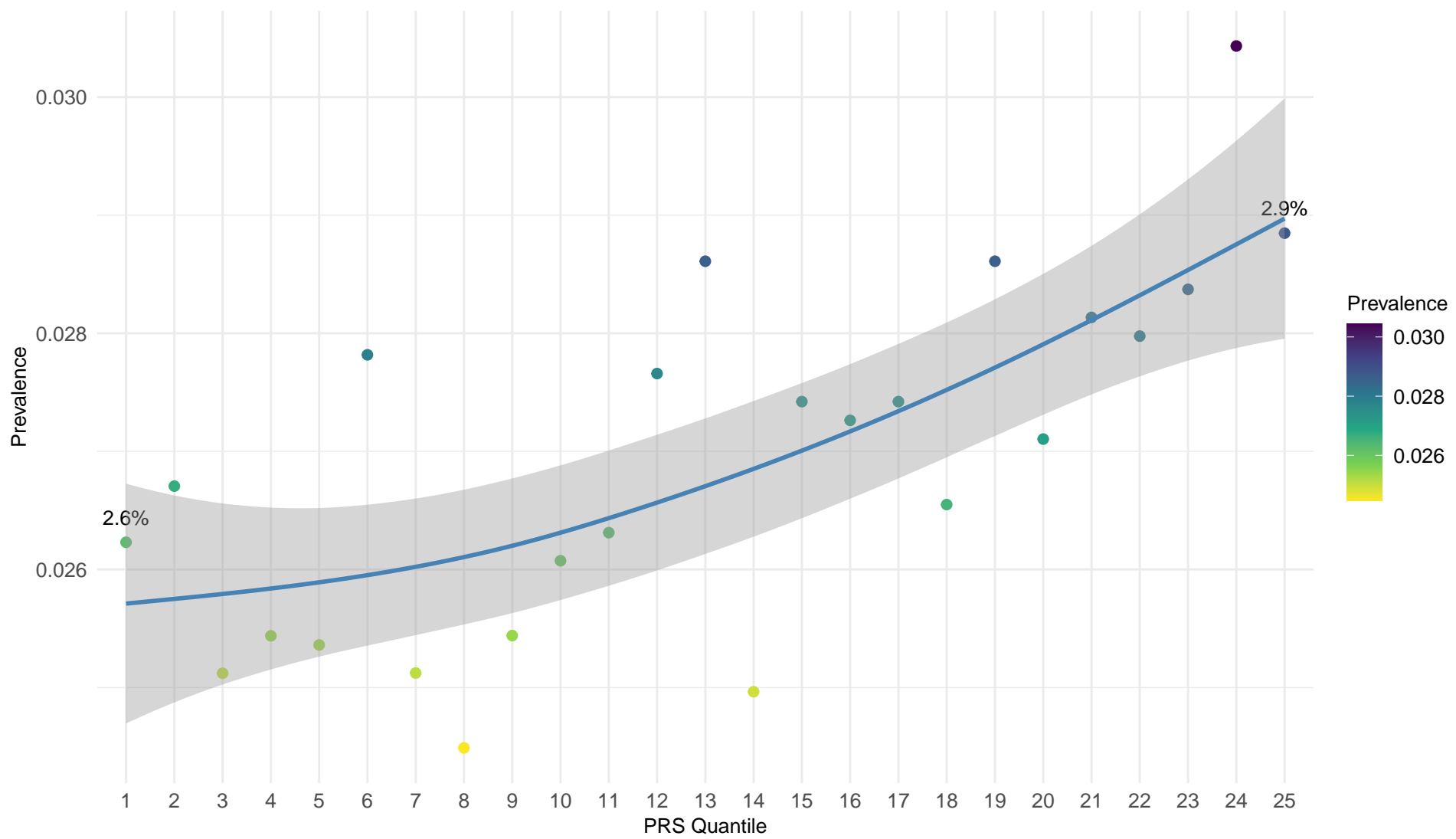
FIGURE 1:Prevalence of Z37 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.03063
2	0.0313
3	0.02943
4	0.02961
5	0.02958
6	0.0324
7	0.02942
8	0.0287
9	0.02985
10	0.03052
11	0.03082
12	0.03246
13	0.0332
14	0.02928
15	0.03204
16	0.03204
17	0.03202
18	0.03121
19	0.03337
20	0.03162
21	0.03295
22	0.03275
23	0.03334
24	0.03549
25	0.03371

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−261.42306	3.310177e−05	0.5308012
2	Power	−252.93483	4.648437e−05	0.3411105
3	Log	−252.53722	4.722958e−05	0.3305476
4	Exponential (lm)	−88.50479	3.269869e−05	0.5365147

FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
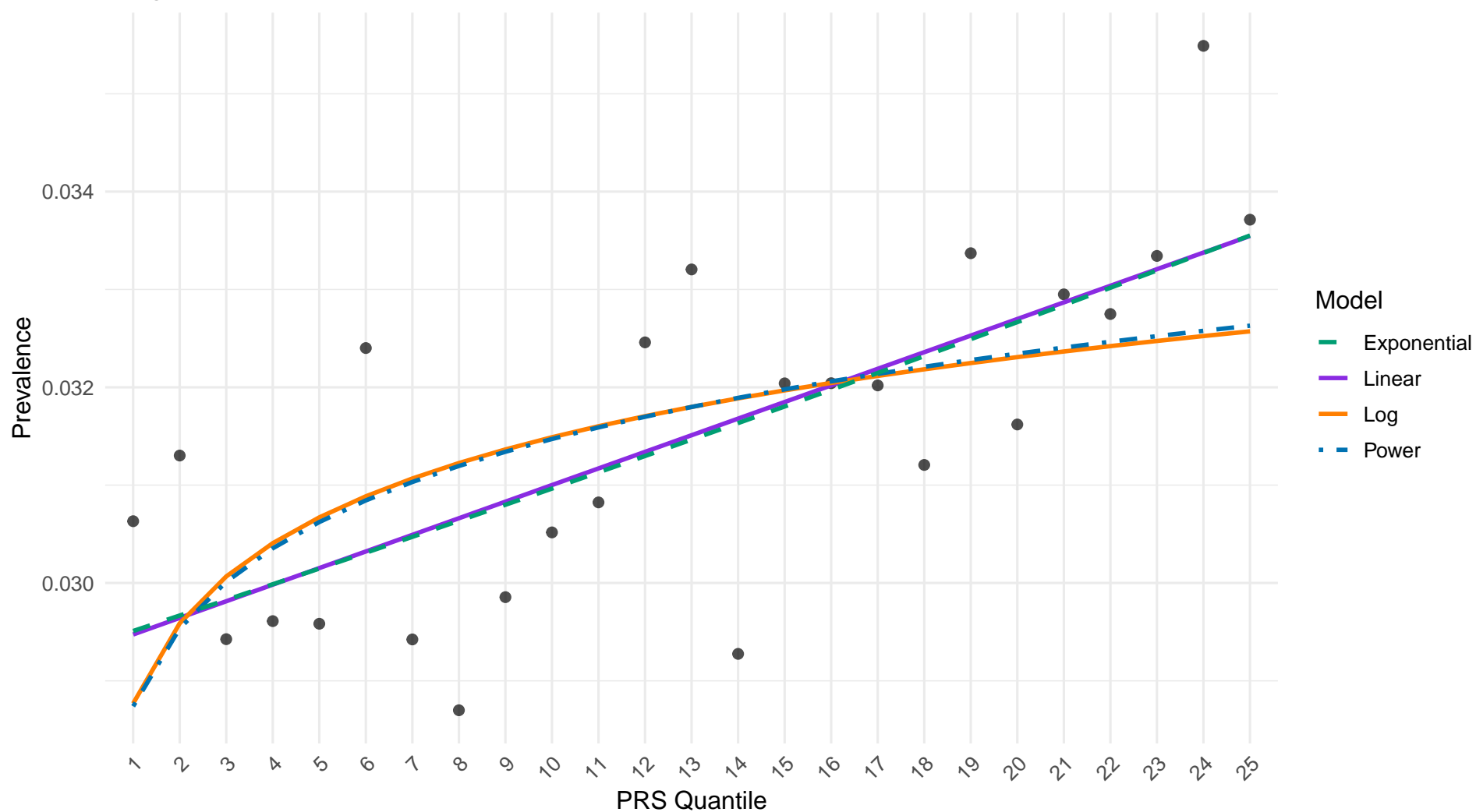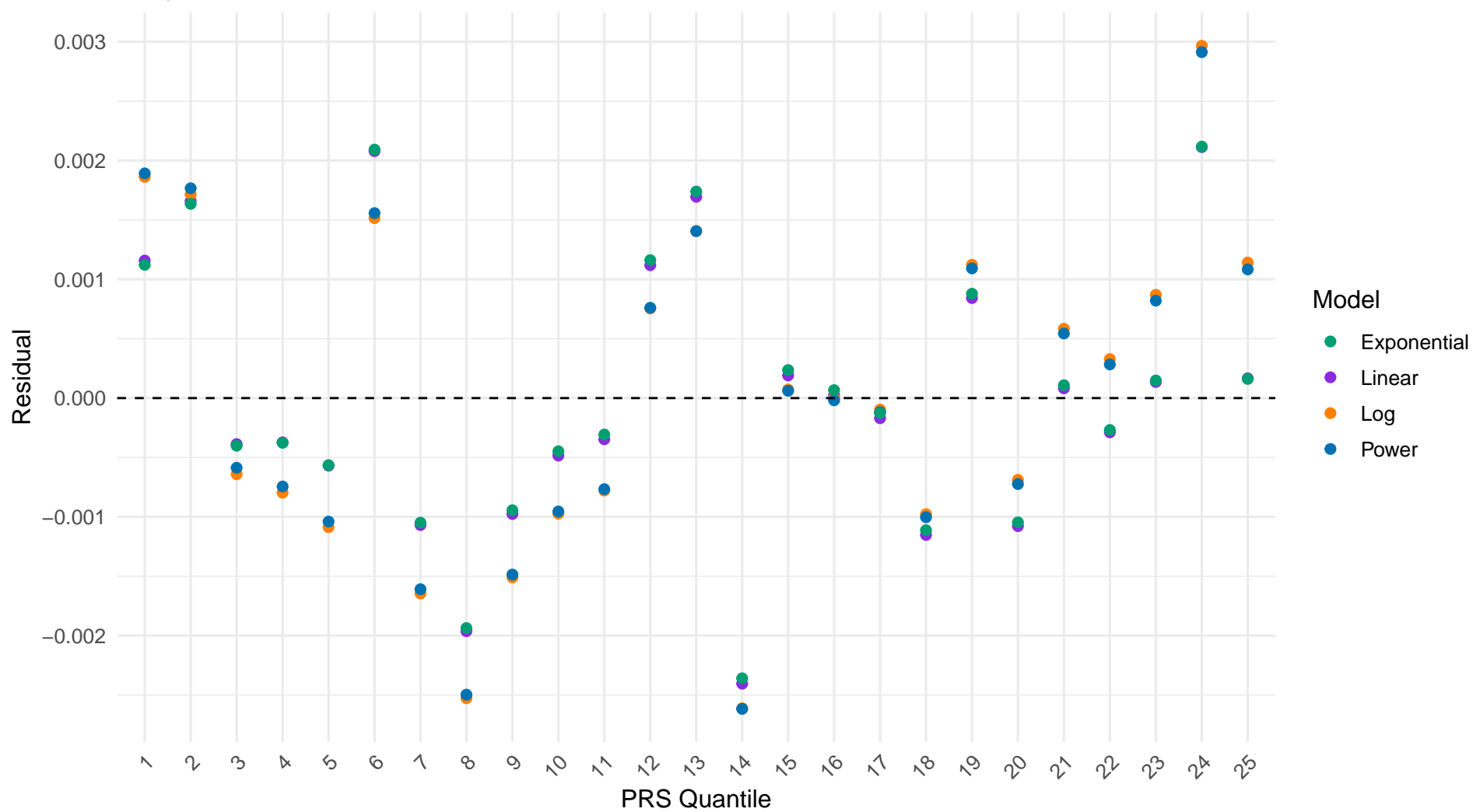Diagnosis: Z37

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: Z37

Chi2 Test for code: Z37

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
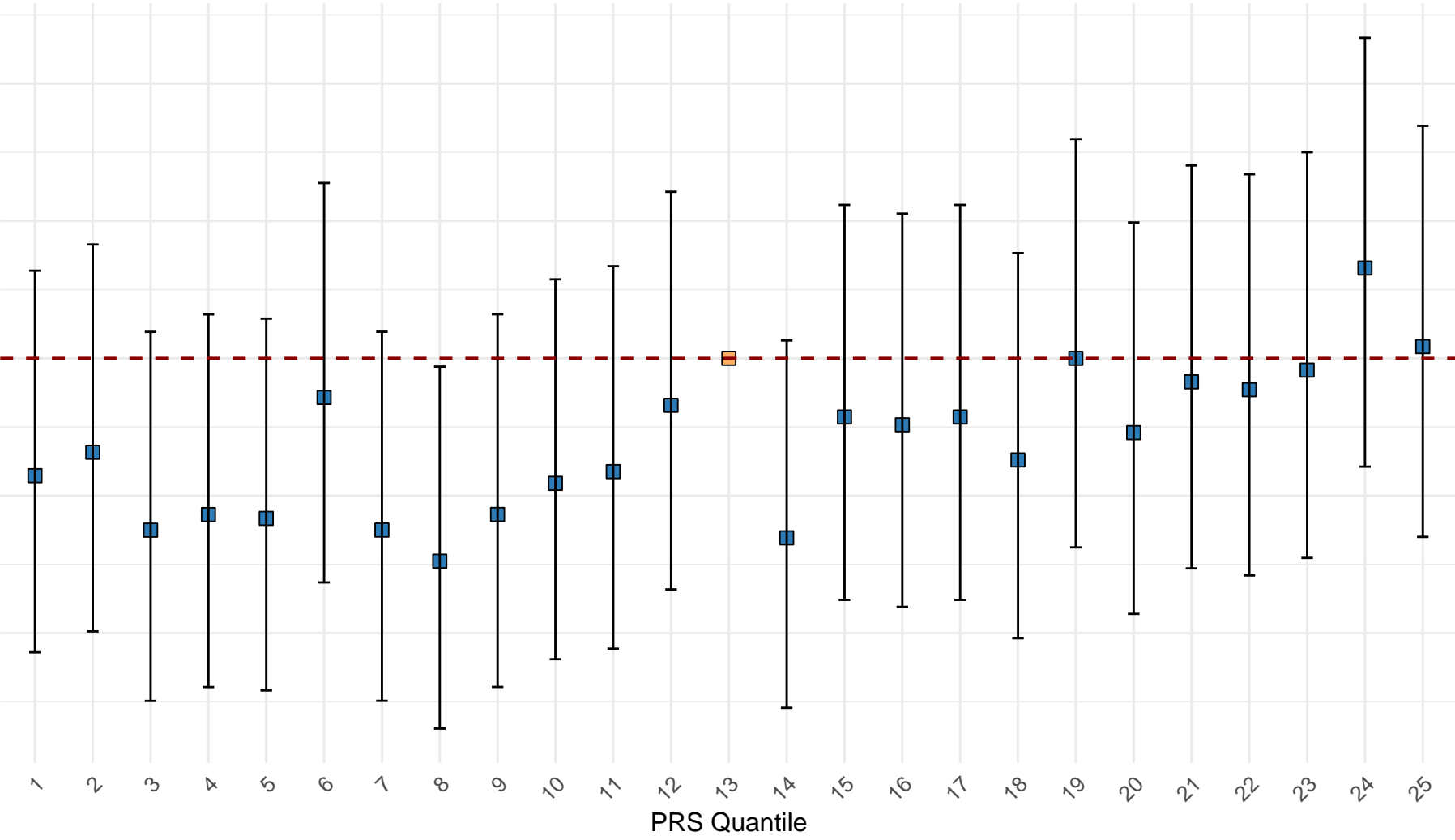Diagnosis: Z37

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.91	0.79	1.06
2	0.93	0.8	1.08
3	0.87	0.75	1.02
4	0.89	0.76	1.03
5	0.88	0.76	1.03
6	0.97	0.84	1.13
7	0.87	0.75	1.02
8	0.85	0.73	0.99
9	0.89	0.76	1.03
10	0.91	0.78	1.06
11	0.92	0.79	1.07
12	0.97	0.83	1.12
13	1	1	1
14	0.87	0.75	1.01
15	0.96	0.82	1.11
16	0.95	0.82	1.11
17	0.96	0.82	1.11
18	0.93	0.8	1.08
19	1	0.86	1.16
20	0.95	0.81	1.1
21	0.98	0.85	1.14
22	0.98	0.84	1.13
23	0.99	0.85	1.15
24	1.07	0.92	1.23
25	1.01	0.87	1.17

```
Linear Model Summary for Z37

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0024046 -0.0005691 -0.0001696  0.0008420  0.0021129

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 2.930e-02  4.946e-04  59.243  < 2e-16 ***
PRS         1.697e-04  3.327e-05   5.101 3.63e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0012 on 23 degrees of freedom
Multiple R-squared:  0.5308, Adjusted R-squared:  0.5104
F-statistic: 26.02 on 1 and 23 DF,  p-value: 3.633e-05


Log Model Summary for Z37

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-2.612e-03 -9.726e-04 -2.840e-06  1.123e-03  2.966e-03

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0287686  0.0008625   33.35  < 2e-16 ***
log(PRS)    0.0011815  0.0003506    3.37  0.00264 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001433 on 23 degrees of freedom
Multiple R-squared:  0.3305, Adjusted R-squared:  0.3014
F-statistic: 11.36 on 1 and 23 DF,  p-value: 0.002644


Exponential Model Summary for Z37

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.07750 -0.01889 -0.00395  0.02668  0.06675

Coefficients:
             Estimate Std. Error  t value Pr(>|t|)
(Intercept) -3.528408   0.015712 -224.566  < 2e-16 ***
PRS          0.005349   0.001057    5.061 4.01e-05 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.03811 on 23 degrees of freedom
Multiple R-squared:  0.5269, Adjusted R-squared:  0.5064
F-statistic: 25.62 on 1 and 23 DF,  p-value: 4.006e-05


Power Model Summary for Z37

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0287393  0.0008234  34.902  < 2e-16 ***
b 0.0394420  0.0114705   3.439  0.00224 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.001422 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 7.195e-07
```

Prevalence analysis and model fitting for diagnosis: Z60
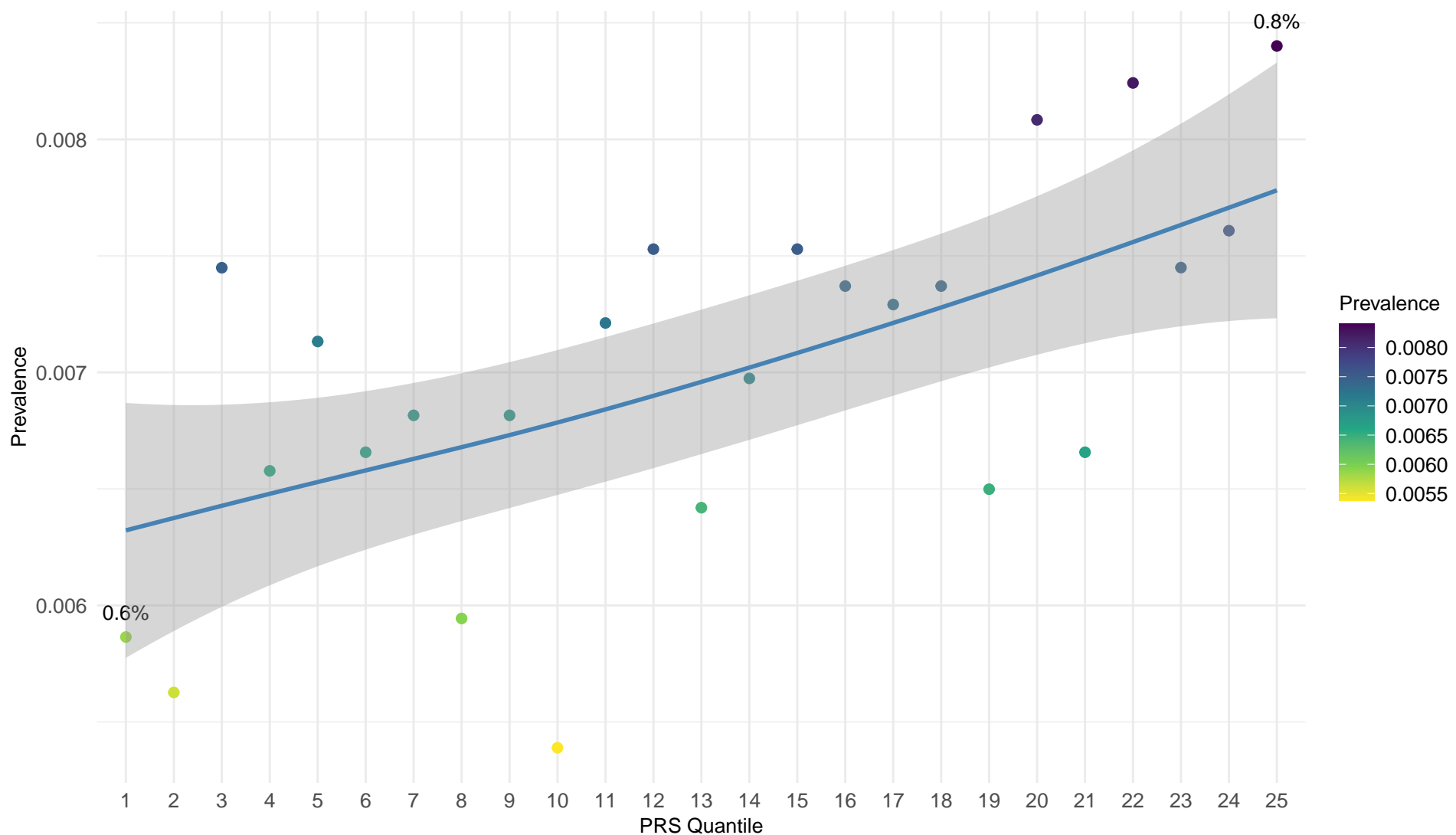

FIGURE 1:Prevalence of Z60 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.00685
2	0.00659
3	0.00873
4	0.00766
5	0.00832
6	0.00775
7	0.00798
8	0.00697
9	0.008
10	0.00631
11	0.00845
12	0.00884
13	0.00745
14	0.00818
15	0.0088
16	0.00866
17	0.00851
18	0.00866
19	0.00758
20	0.00943
21	0.0078
22	0.00965
23	0.00875
24	0.00887
25	0.00982

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−287.06571	1.186842e−05	0.4013083
2	Power	−285.26009	1.275732e−05	0.3564684
3	Log	−284.97640	1.290292e−05	0.3491240
4	Exponential (lm)	−44.80611	1.182865e−05	0.4033145

FIGURE 2: Prevalence by SCZ−PRS Quantile and Model Fit
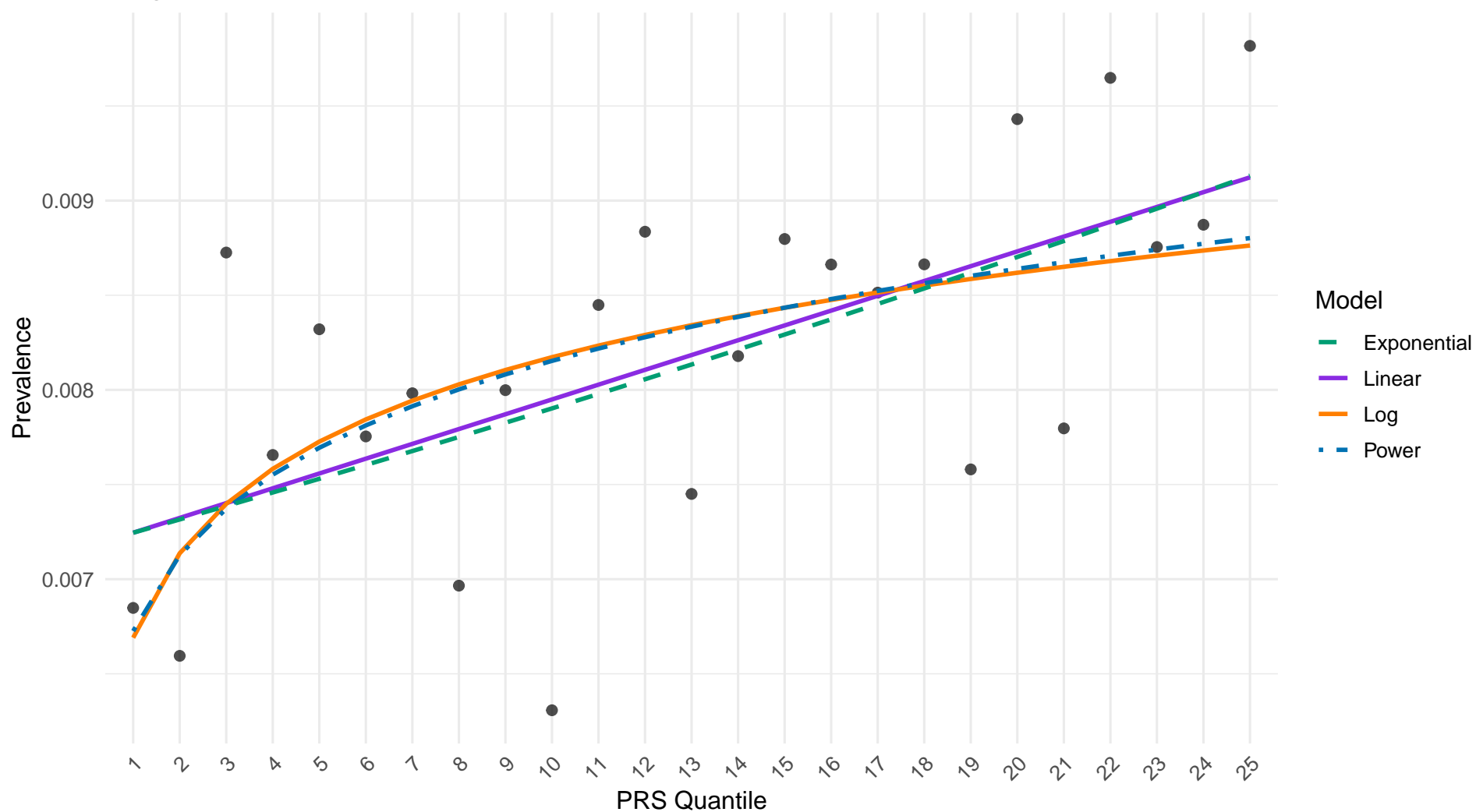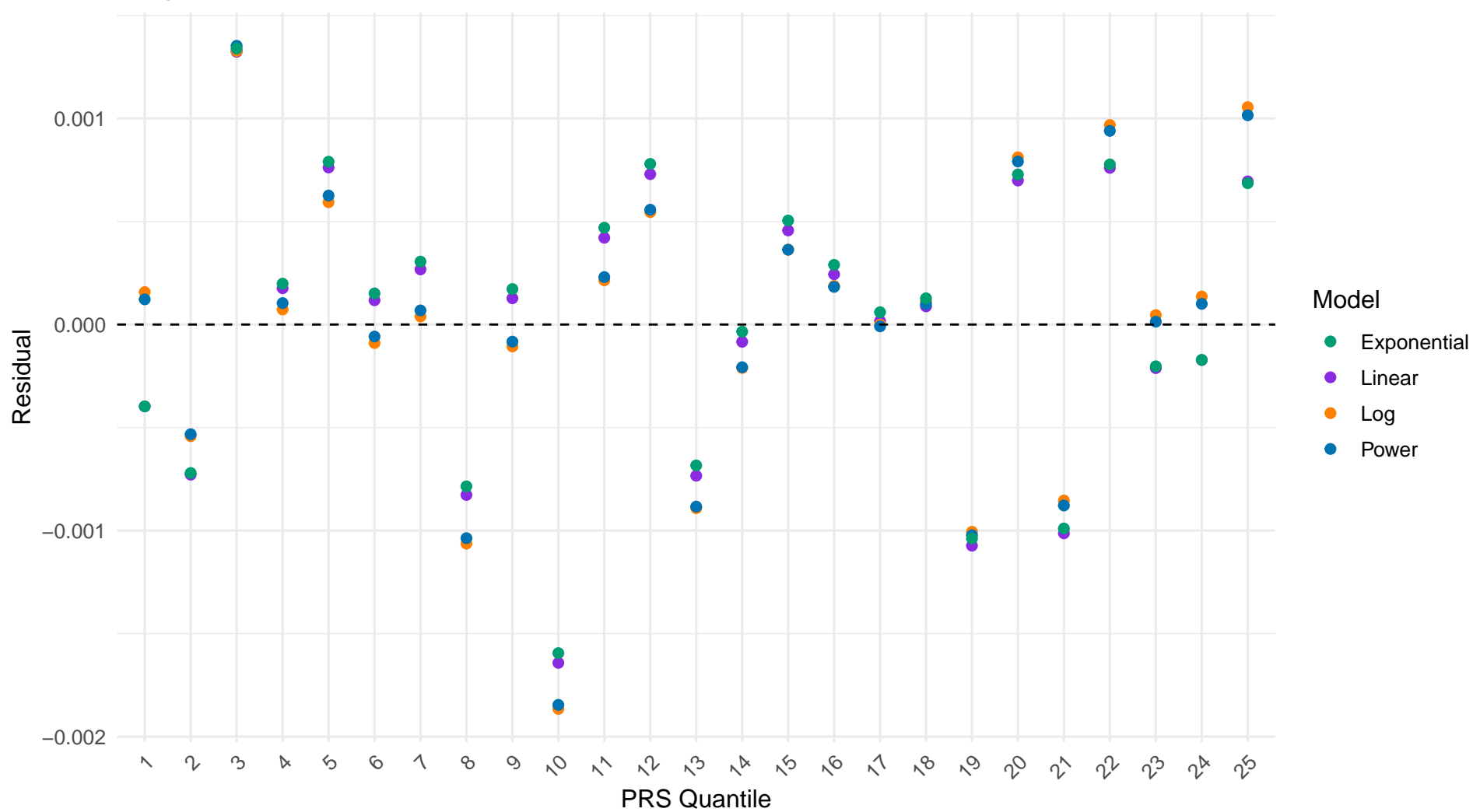Diagnosis: Z60

FIGURE 3: Model residuals by SCZ−PRS Quantile
Diagnosis: Z60

Chi2 Test for code: Z60

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 - 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
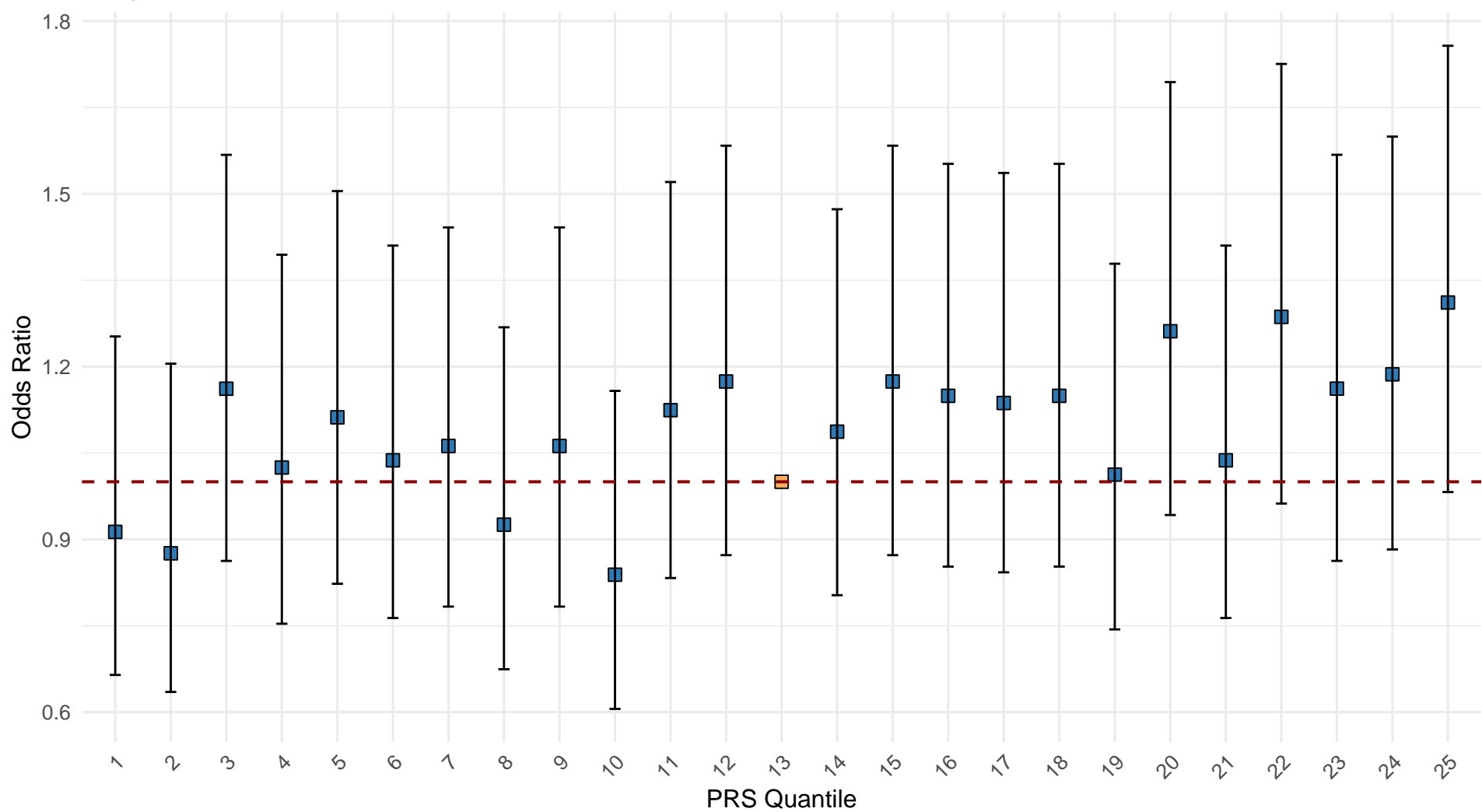Diagnosis: Z60

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.91	0.66	1.25
2	0.88	0.64	1.21
3	1.16	0.86	1.57
4	1.02	0.75	1.39
5	1.11	0.82	1.5
6	1.04	0.76	1.41
7	1.06	0.78	1.44
8	0.93	0.67	1.27
9	1.06	0.78	1.44
10	0.84	0.61	1.16
11	1.12	0.83	1.52
12	1.17	0.87	1.58
13	1	1	1
14	1.09	0.8	1.47
15	1.17	0.87	1.58
16	1.15	0.85	1.55
17	1.14	0.84	1.54
18	1.15	0.85	1.55
19	1.01	0.74	1.38
20	1.26	0.94	1.69
21	1.04	0.76	1.41
22	1.29	0.96	1.73
23	1.16	0.86	1.57
24	1.19	0.88	1.6
25	1.31	0.98	1.76

```
Linear Model Summary for Z60

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0016420 -0.0003973  0.0001176  0.0004566  0.0013237

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 7.167e-03  2.962e-04  24.198  < 2e-16 ***
PRS         7.823e-05  1.992e-05   3.926 0.000675 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0007183 on 23 degrees of freedom
Multiple R-squared:  0.4013,	Adjusted R-squared:  0.3753
F-statistic: 15.42 on 1 and 23 DF,  p-value: 0.0006751


Log Model Summary for Z60

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
       Min         1Q     Median         3Q        Max
-1.865e-03 -2.109e-04  7.313e-05  3.633e-04  1.328e-03

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.0066907  0.0004508  14.842 2.86e-13 ***
log(PRS)    0.0006437  0.0001833   3.512  0.00187 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.000749 on 23 degrees of freedom
Multiple R-squared:  0.3491,	Adjusted R-squared:  0.3208
F-statistic: 12.34 on 1 and 23 DF,  p-value: 0.001871


Exponential Model Summary for Z60

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min       1Q   Median       3Q      Max
-0.22541 -0.05638  0.01966  0.05908  0.16662

Coefficients:
             Estimate Std. Error   t value Pr(>|t|)
(Intercept) -4.937057   0.037653 -131.121  < 2e-16 ***
PRS          0.009643   0.002533    3.807 0.000907 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.09132 on 23 degrees of freedom
Multiple R-squared:  0.3866,	Adjusted R-squared:  0.3599
F-statistic:  14.5 on 1 and 23 DF,  p-value: 0.0009066


Power Model Summary for Z60

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.0067260  0.0004121   16.32 3.86e-14 ***
b 0.0835716  0.0241518    3.46  0.00212 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.0007448 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 5.245e-06
```

Prevalence analysis and model fitting for diagnosis: Z86
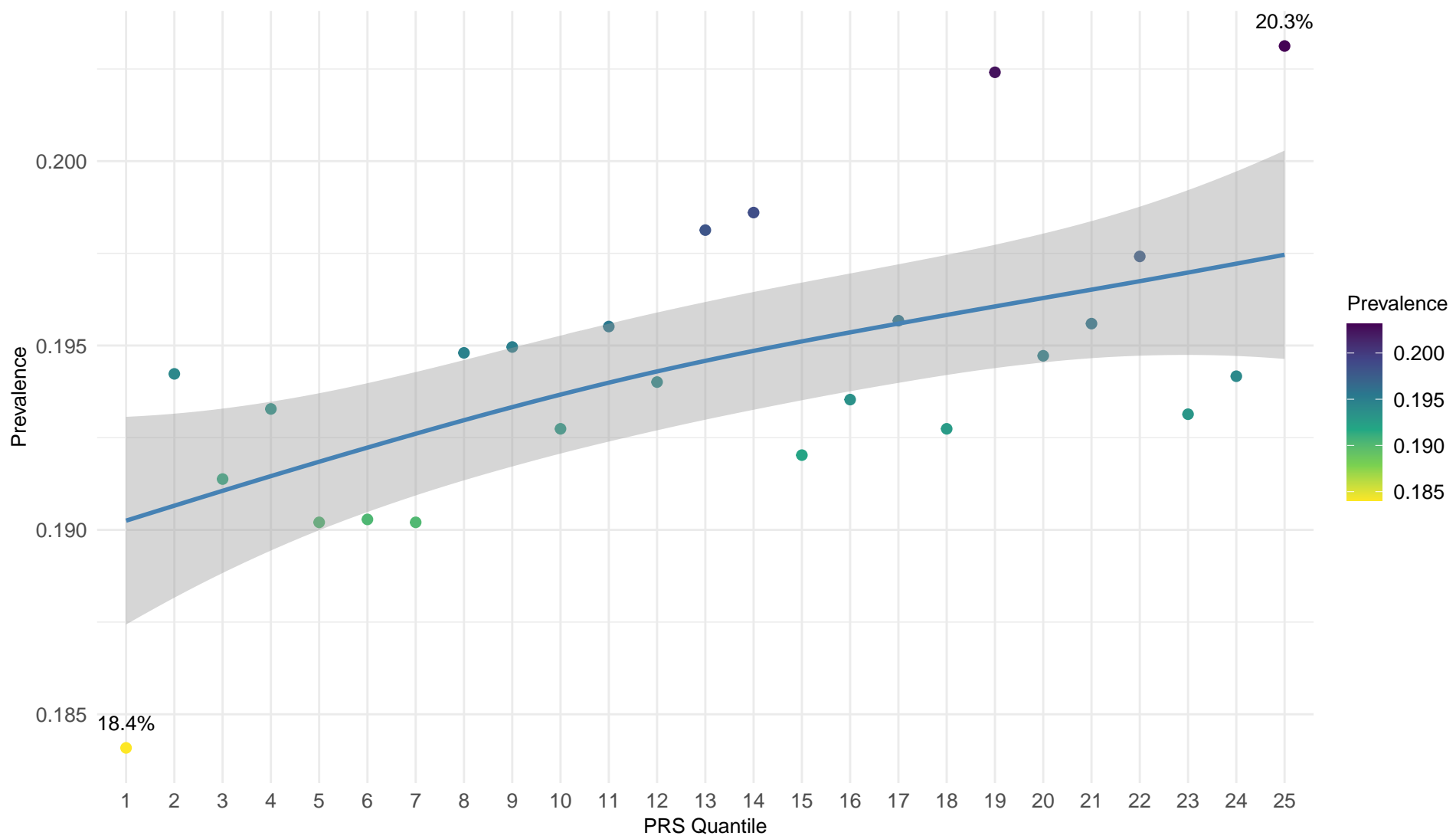
FIGURE 1:Prevalence of Z86 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.21497
2	0.22766
3	0.22417
4	0.22498
5	0.22187
6	0.22164
7	0.22276
8	0.22829
9	0.22879
10	0.22558
11	0.22904
12	0.22768
13	0.22995
14	0.2329
15	0.22437
16	0.22746
17	0.22848
18	0.22655
19	0.23609
20	0.22716
21	0.22907
22	0.2311
23	0.22697
24	0.22643
25	0.23738

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Log	−208.2177	0.0002780505	0.4492936
2	Power	−208.2045	0.0002781970	0.4490035
3	Linear	−205.6801	0.0003077549	0.3904613
4	Exponential (lm)	−131.5200	0.0003083706	0.3892417

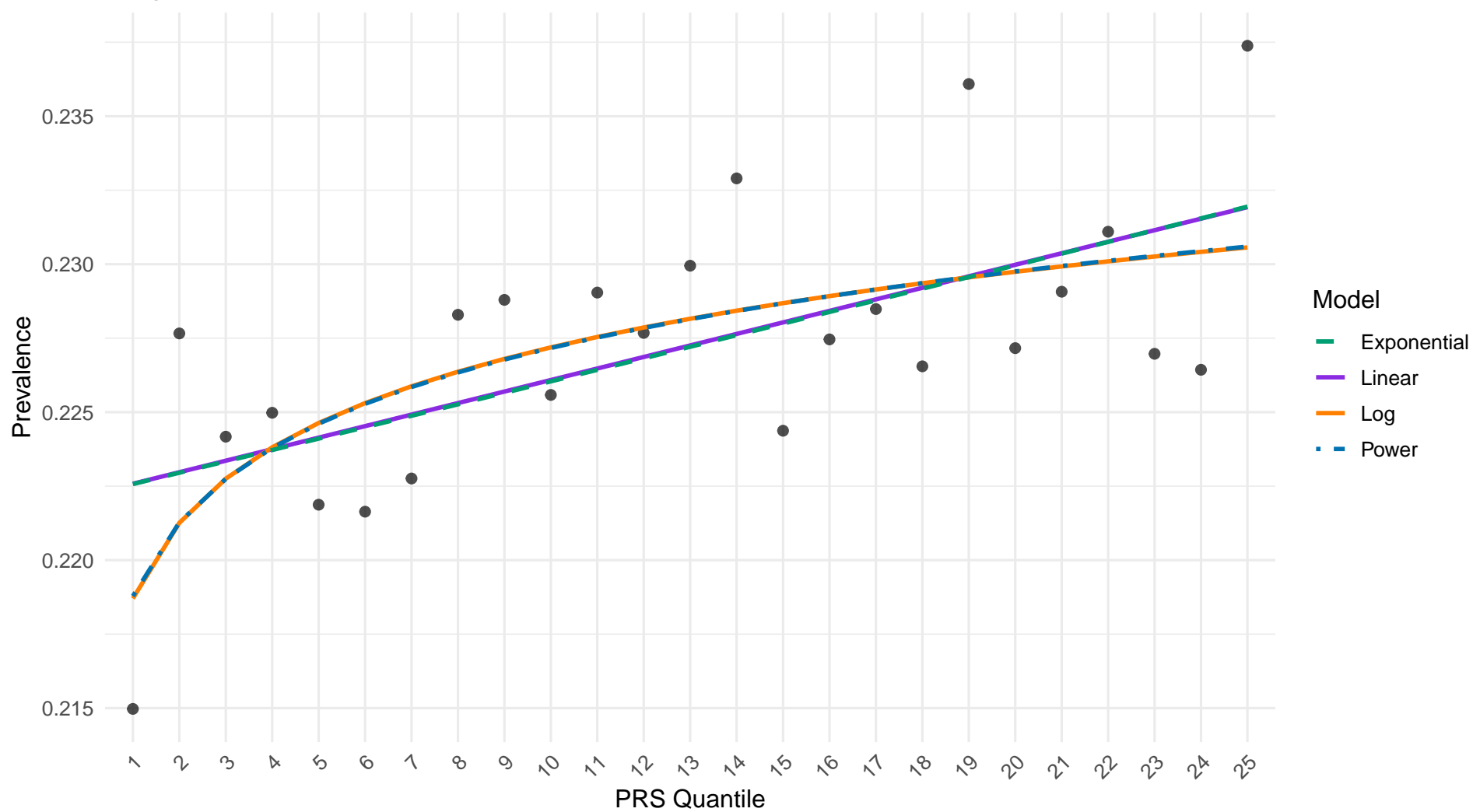FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
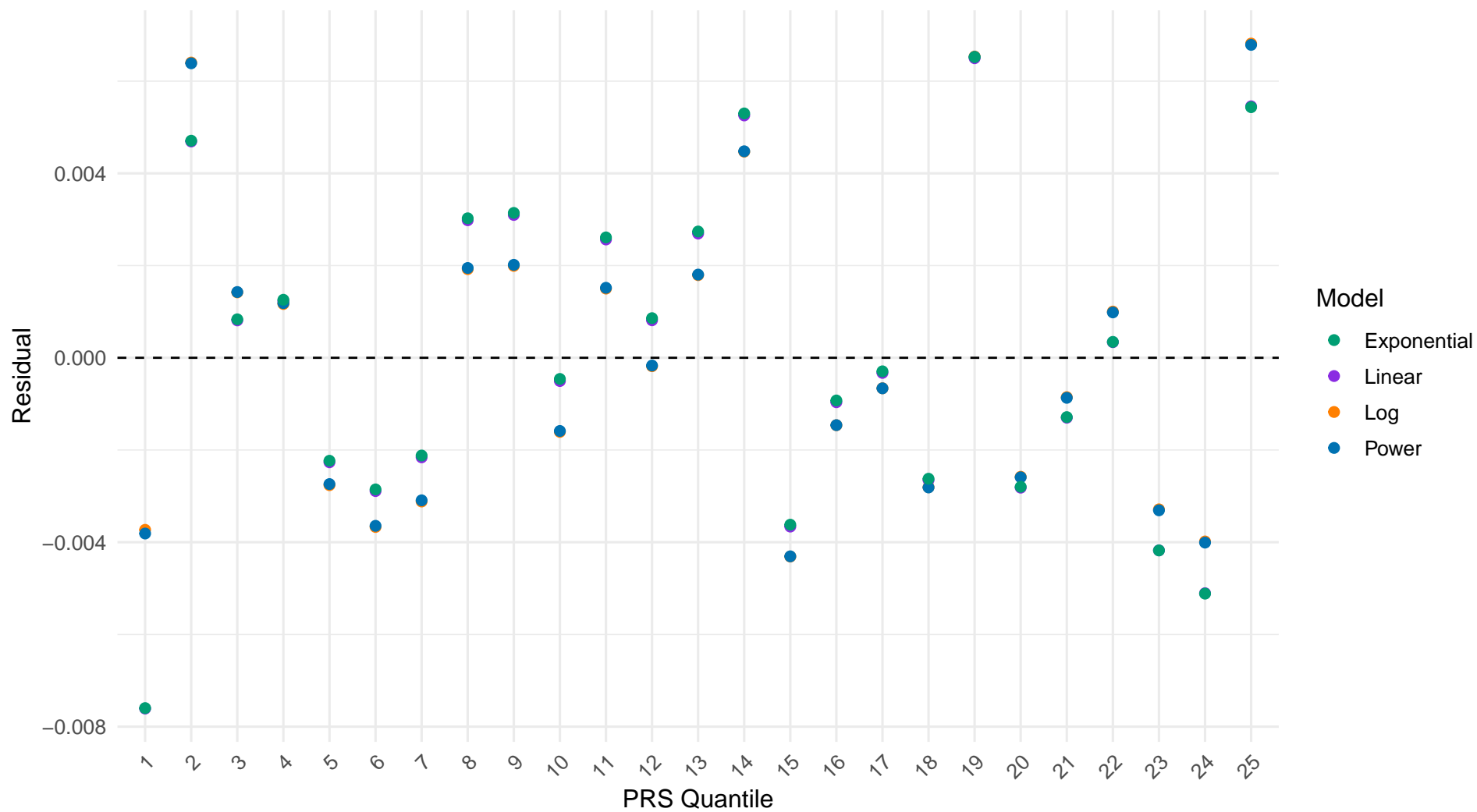Diagnosis: Z86

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: Z86

Chi2 Test for code: Z86

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
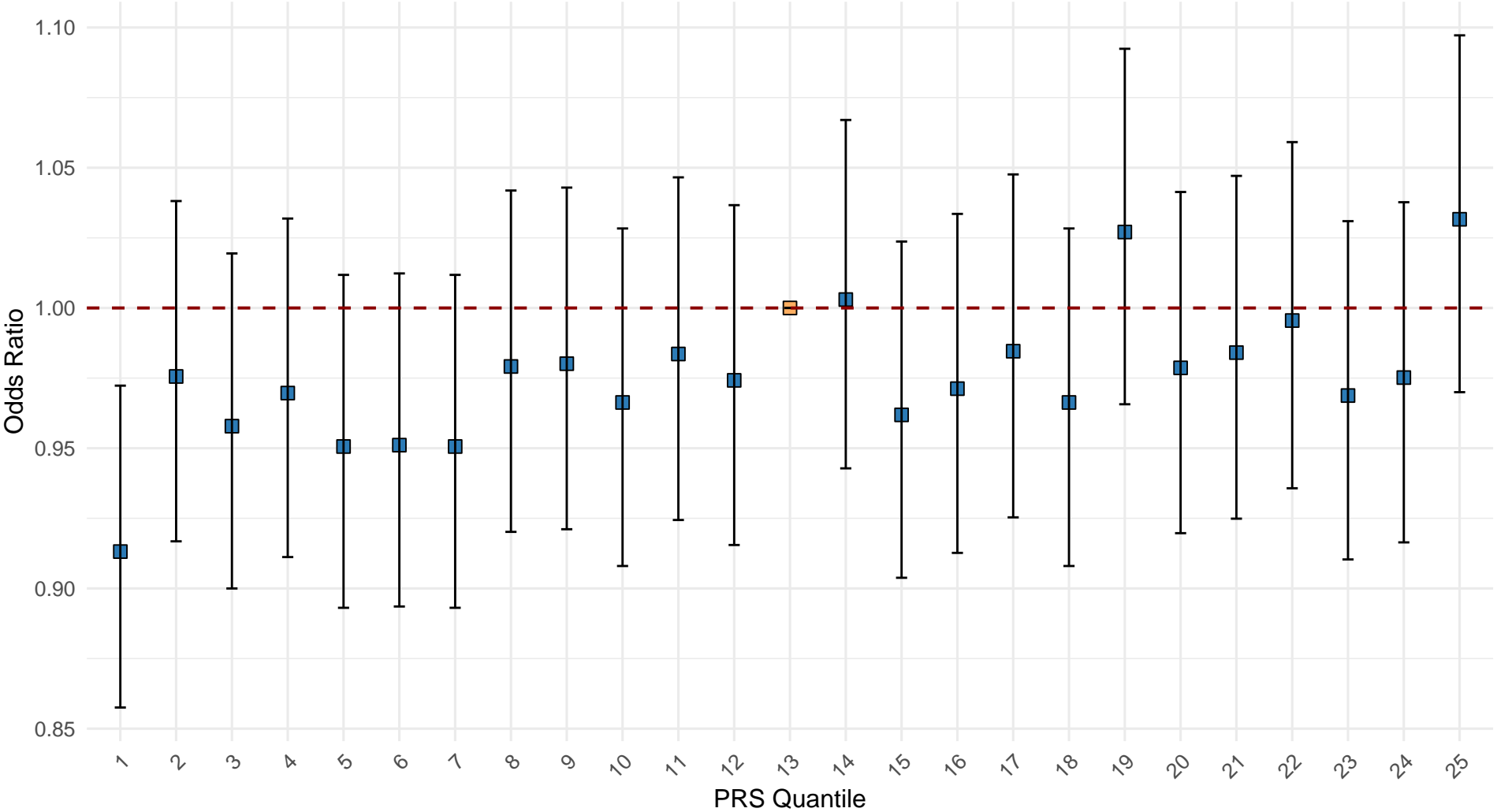Diagnosis: Z86

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.91	0.86	0.97
2	0.98	0.92	1.04
3	0.96	0.9	1.02
4	0.97	0.91	1.03
5	0.95	0.89	1.01
6	0.95	0.89	1.01
7	0.95	0.89	1.01
8	0.98	0.92	1.04
9	0.98	0.92	1.04
10	0.97	0.91	1.03
11	0.98	0.92	1.05
12	0.97	0.92	1.04
13	1	1	1
14	1	0.94	1.07
15	0.96	0.9	1.02
16	0.97	0.91	1.03
17	0.98	0.93	1.05
18	0.97	0.91	1.03
19	1.03	0.97	1.09
20	0.98	0.92	1.04
21	0.98	0.92	1.05
22	1	0.94	1.06
23	0.97	0.91	1.03
24	0.98	0.92	1.04
25	1.03	0.97	1.1

```
Linear Model Summary for Z86

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0076081 -0.0026527 -0.0003278  0.0026942  0.0064972

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.2221918  0.0015082 147.321  < 2e-16 ***
PRS         0.0003894  0.0001015   3.838  0.00084 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.003658 on 23 degrees of freedom
Multiple R-squared:  0.3905, Adjusted R-squared:  0.364
F-statistic: 14.73 on 1 and 23 DF,  p-value: 0.0008396


Log Model Summary for Z86

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0043112 -0.0028070 -0.0006609  0.0017920  0.0068145

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.2187042  0.0020927 104.508  < 2e-16 ***
log(PRS)    0.0036851  0.0008507   4.332 0.000246 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.003477 on 23 degrees of freedom
Multiple R-squared:  0.4493, Adjusted R-squared:  0.4253
F-statistic: 18.76 on 1 and 23 DF,  p-value: 0.0002462


Exponential Model Summary for Z86

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
     Min        1Q    Median        3Q       Max
-0.034729 -0.011510 -0.001284  0.011982  0.028016

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -1.5042320  0.0066468 -226.311  < 2e-16 ***
PRS          0.0017193  0.0004471    3.845 0.000825 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.01612 on 23 degrees of freedom
Multiple R-squared:  0.3913, Adjusted R-squared:  0.3648
F-statistic: 14.79 on 1 and 23 DF,  p-value: 0.0008255


Power Model Summary for Z86

Formula: prevalence ~ a * PRS^b

Parameters:
  Estimate Std. Error t value Pr(>|t|)
a 0.218784   0.002061 106.165  < 2e-16 ***
b 0.016334   0.003804   4.293 0.000271 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.003478 on 23 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.991e-07
```

Prevalence analysis and model fitting for diagnosis: Z96

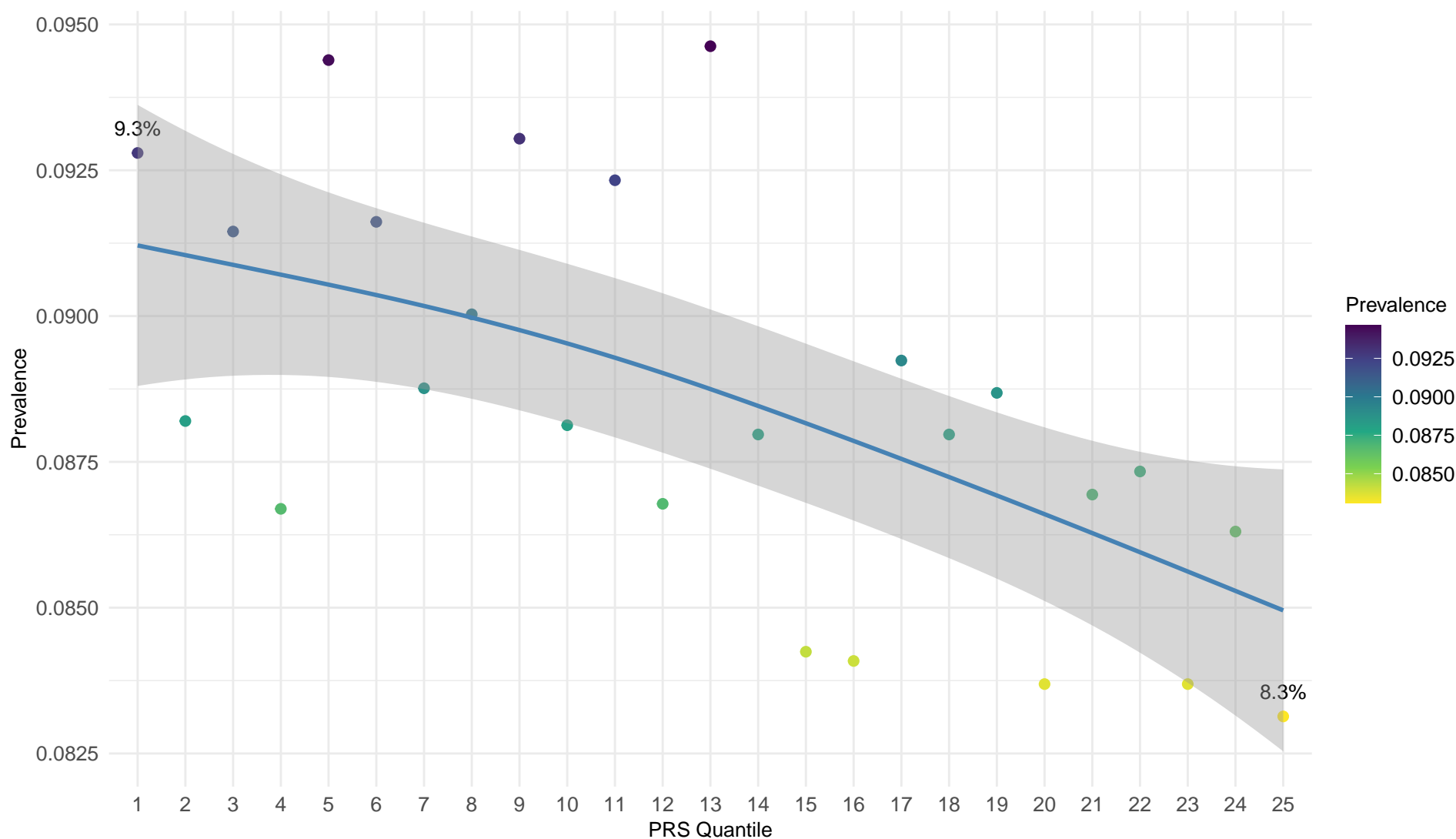FIGURE 1:Prevalence of Z96 across SCZ−PRS quantile:

Table 1 | Prevalence table by SCZ–PRS quantile

PRS Quantile	Prevalence
1	0.10837
2	0.10338
3	0.10712
4	0.10091
5	0.1101
6	0.10671
7	0.10395
8	0.10551
9	0.10919
10	0.10314
11	0.10816
12	0.10184
13	0.10982
14	0.10316
15	0.09844
16	0.09883
17	0.1042
18	0.1034
19	0.10344
20	0.09763
21	0.10182
22	0.10224
23	0.09835
24	0.10065
25	0.09716

TABLE 2 | Model fit comparison for SCZ–PRS quantiles and diagnosis prevalence:

	Model	AIC	RSS	R2
1	Linear	−214.6486	0.0002149843	0.4035593
2	Log	−210.2136	0.0002567144	0.2877855
3	Power	−210.0816	0.0002580739	0.2840136
4	Exponential (lm)	−101.4019	0.0002158465	0.4011671

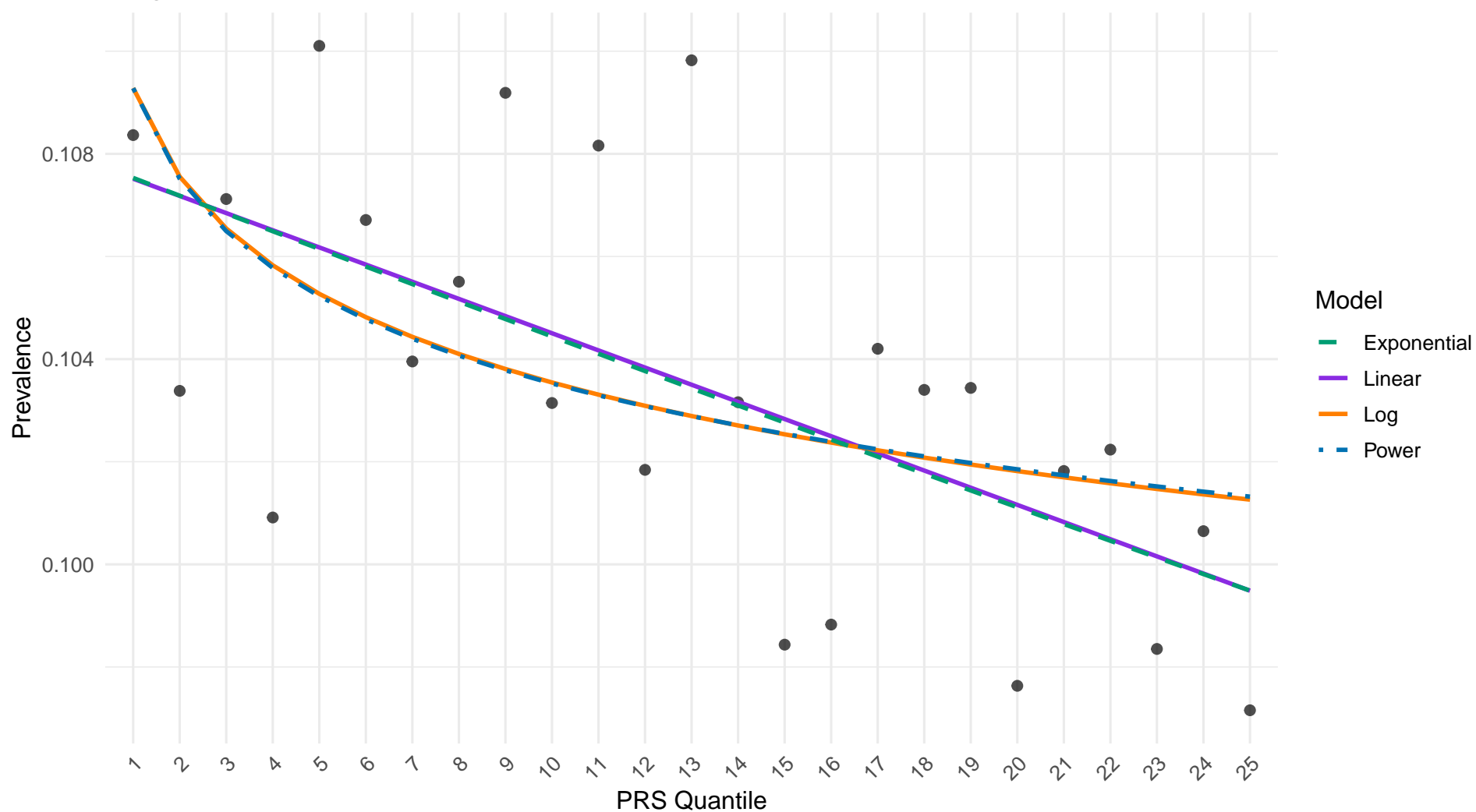FIGURE 2: Prevalence by SCZ–PRS Quantile and Model Fit
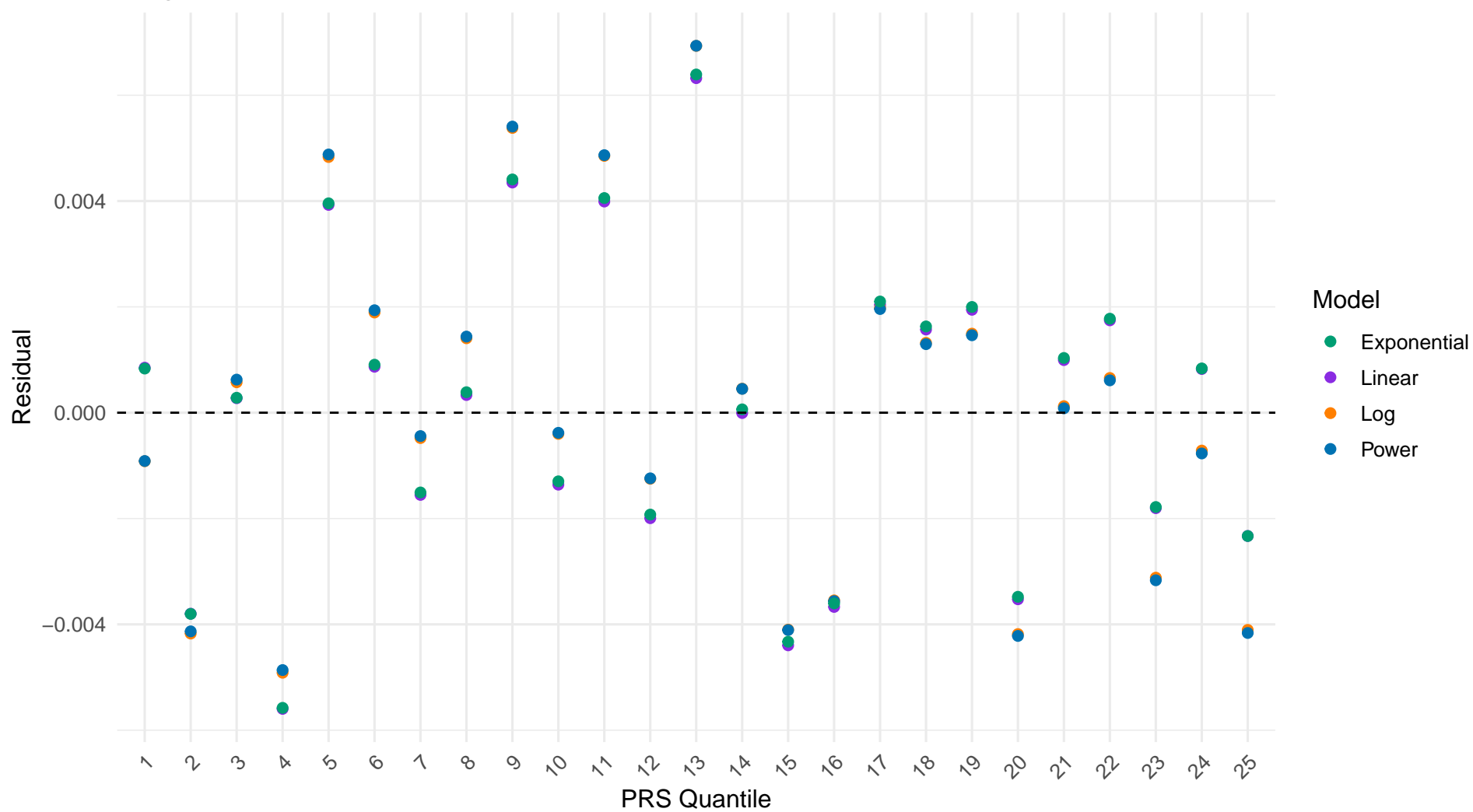Diagnosis: Z96

FIGURE 3: Model residuals by SCZ–PRS Quantile
Diagnosis: Z96

Chi2 Test for code: Z96

TABLE 3 | Contingency table of diagnosis by SCZ-PRS quantile group (Q1 vs. others):

Quantile	Cases	Controls
Q1	21568	410672
Others	512167	9842873

OR (Q1 vs Others): 1.009 [95% CI: 0.995 – 1.024]

Test Result:

 Pearson's Chi-squared test with Yates' continuity correction

data: matrix_chi2
X-squared = 1.6798, df = 1, p-value = 0.1949

FIGURE 4: Odds Ratio by SCZ–PRS quantile (Reference = Quantile 13)
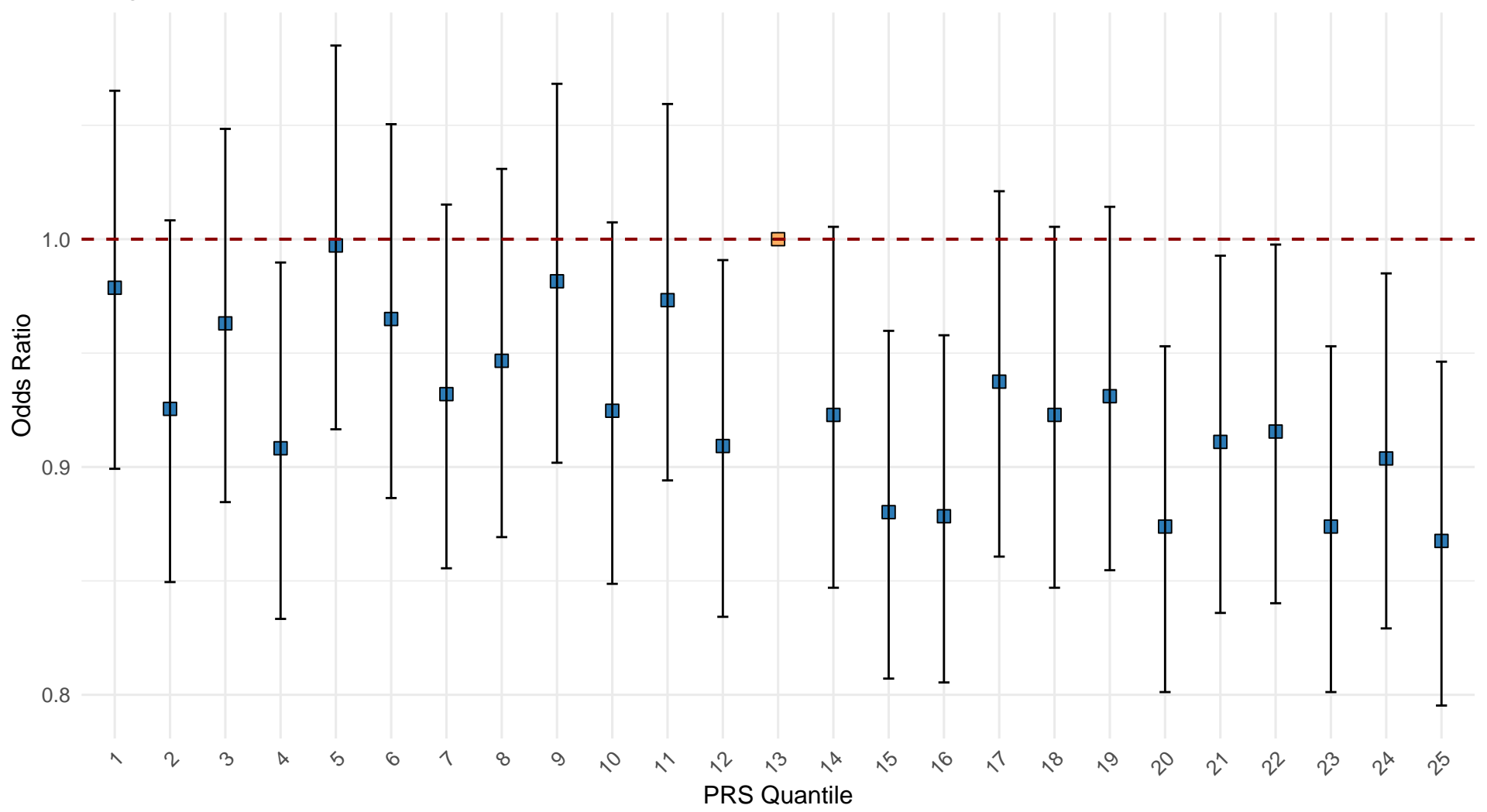Diagnosis: Z96

TABLE 4 | Odds Ratios by SCZ–PRS Quantile (ref = Q13)

PRS Quantile	Odds Ratio	CI Lower	CI Upper
1	0.98	0.9	1.07
2	0.93	0.85	1.01
3	0.96	0.88	1.05
4	0.91	0.83	0.99
5	1	0.92	1.09
6	0.96	0.89	1.05
7	0.93	0.86	1.02
8	0.95	0.87	1.03
9	0.98	0.9	1.07
10	0.92	0.85	1.01
11	0.97	0.89	1.06
12	0.91	0.83	0.99
13	1	1	1
14	0.92	0.85	1.01
15	0.88	0.81	0.96
16	0.88	0.81	0.96
17	0.94	0.86	1.02
18	0.92	0.85	1.01
19	0.93	0.85	1.01
20	0.87	0.8	0.95
21	0.91	0.84	0.99
22	0.92	0.84	1
23	0.87	0.8	0.95
24	0.9	0.83	0.98
25	0.87	0.8	0.95

```
Linear Model Summary for Z96

Call:
lm(formula = prevalence ~ PRS, data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0055982 -0.0019938  0.0003342  0.0017456  0.0063226

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.078e-01  1.261e-03  85.557  < 2e-16 ***
PRS         -3.345e-04  8.479e-05  -3.945 0.000645 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.003057 on 23 degrees of freedom
Multiple R-squared:  0.4036, Adjusted R-squared:  0.3776
F-statistic: 15.56 on 1 and 23 DF,  p-value: 0.000645


Log Model Summary for Z96

Call:
lm(formula = prevalence ~ log(PRS), data = df_code)

Residuals:
      Min         1Q     Median         3Q        Max
-0.0049147 -0.0031175  0.0001235  0.0014936  0.0069326

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.1092825  0.0020108  54.348   <2e-16 ***
log(PRS)    -0.0024920  0.0008174  -3.049   0.0057 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.003341 on 23 degrees of freedom
Multiple R-squared:  0.2878, Adjusted R-squared:  0.2568
F-statistic: 9.294 on 1 and 23 DF,  p-value: 0.0057


Exponential Model Summary for Z96

Call:
lm(formula = log(prevalence) ~ PRS, data = df_code)

Residuals:
      Min        1Q    Median        3Q       Max
-0.053804 -0.018729  0.003677  0.017532  0.059966

Coefficients:
              Estimate Std. Error  t value Pr(>|t|)
(Intercept) -2.2267312  0.0121398 -183.424  < 2e-16 ***
PRS         -0.0032397  0.0008166   -3.967  0.00061 ***
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.02944 on 23 degrees of freedom
Multiple R-squared:  0.4063, Adjusted R-squared:  0.3805
F-statistic: 15.74 on 1 and 23 DF,  p-value: 0.0006101


Power Model Summary for Z96

Formula: prevalence ~ a * PRS^b

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a  0.109279   0.002061  53.032  < 2e-16 ***
b -0.023492   0.007741  -3.035  0.00589 **
---
Signif. codes:  0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ....... 0.1 ... ... 1

Residual standard error: 0.00335 on 23 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.563e-07
```