

An Example Summary of This Analysis

In order to explore the curvilinear relationship between diabetes and BMI, the IV was centered at 20, and then squared and cubed versions of the centered BMI variable were created and entered sequentially (on individual steps) into the analysis. A small percentage (less than 0.4%) of the sample had inappropriate levels of influence by virtue of having standardized residuals greater than $|5.0|$. After these cases were removed, the entry of each term (linear, quadratic, cubic) contributed to a significant improvement in model fit, as Table 7.4 shows. Because all three terms were significant, the final logistic regression equation was used to create predicted values across a broad range of BMI (10–60). These predicted values were converted from logits to conditional probabilities for ease of interpretation.

As you can see in Figure 7.13b, the probability of being diagnosed with diabetes is relatively low and slow to accelerate in adults with low BMI, but it begins to rise more rapidly as BMI moves toward the high 20s and continues to increase rapidly until the high 40s, where it levels off at a high prevalence.