Multivariate models: Model of covariates on changes in disability status

Missing data and statistical model:
• Our previous trends in disability status in the NLTCS, 1037 (24.3%) had missing data on some covariates.
• Depression and cognitive impairment had the largest amounts of missing data due to proxy respondents (i.e., only survival status is observed on those question)
• We use the approach of list-wise deletion of cases with missing data on covariates.
• We use cumulative logistic model for matched pairs with observations where Y is disability assessment by the screen, and Y2 is disability assessment by the detailed interview.

\[
\logit \left[ \frac{P(Y_1 = 1 \mid X)}{P(Y_1 = 0 \mid X)} \right] = \alpha + \beta X
\]

Table 5: Parameter estimates for matched pairs marginal models

Conclusions from statistical modeling:
• The odds of \( Y_1 = 1 \) equal exp(\( b1 \)) = 0.43 times the odds in Model (a).
• This implies: the detailed interview tends to assign higher disability categories than the screen interview.
• This ordering becomes stronger when we control for other covariates in Model (b).
• Time-lag variable has no significant effect, after controlling for interview type.
• Older people (85+), those with proxy respondents, and women, cognitively impaired and non-response persons tend to be classified into higher disability categories by the detailed interview compared to the screen interview, controlling for other covariates.

References: