Randomized Interventions In Longitudinal Settings: A School-Based Example

Preventive Interventions
Randomized Trials

Prevention Science Methodology Group (PSMG)

Developmental Epidemiological Framework:

- Determining the levels and variation in risk and protective factors as well as developmental paths within a defined population in the absence of intervention

- Directing interventions at these risk and protective factors in an effort to change the developmental trajectories in a defined population

- Evaluating variation in intervention impact across risk levels and contexts on proximal and distal outcomes, thereby empirically testing the developmental model

Aggressive Classroom Behavior: The GBG Intervention

Muthén & Curran (1997, Psychological Methods)

The Johns Hopkins Prevention Center carried out a school-based preventive intervention randomized trial in Baltimore public schools starting in grade 1. One of the interventions tested was the Good Behavior Game intervention, a classroom based behavior management strategy promoting good behavior. It was designed specifically to reduce aggressive behavior of first graders and was aimed at longer term impact on aggression through middle school.

One first grade classroom in a school was randomly assigned to receive the Good Behavior Game intervention and another matched classroom in the school was treated as control. After an initial assessment in fall of first grade, the intervention was administered during the first two grades.

Aggressive Classroom Behavior: The GBG Intervention (Continued)

The outcome variable of interest was teacher ratings (TOCA-R) of each child's aggressive behavior (breaks rules, harms property, fights, etc.) in the classroom through grades 1 – 6. Eight teacher ratings were made from fall and spring for the first two grades and every spring in grades 3 – 6.

The most important scientific question was whether the Good Behavior Game reduces the slope of the aggression trajectory across time. It was also of interest to know whether the intervention varies in impact for children who started out as high aggressive versus low aggressive.

Analyses in Muthén-Curran (1997) were based on data for 75 boys in the GBG group who stayed in the intervention condition for two years and 111 boys in the control group.

References For The Baltimore Study

Dolan L., Kellam S.G., Brown C.H., Werthamer-Larsson L., Rebok G.W., Mayer L.S., Laudolff., Turkkan J.S., Ford C., & Wheeler L. (1993). The short-term impact of two classroom based preventive intervention trials on aggressive and shy behaviors and poor achievement. Journal of Applied Developmental Psychology, 14, 317-345.

Ialongo LN, Werthamer S, Kellam SK, Brown CH, Wang S, Lin Y (1999). Proximal Impact of Two First Grade Preventive Interventions on the Early Risk Behaviors for Later Substance Abuse, Depression and Antisocial Behavior. American Journal of Community Psychology, 27, Vol, 5, 599-641.

Kellam, S.G., Ling, X., Merisca, R., Brown, C.H. & Ialongo, N. (1998). The effect of the level of classroom on the course and malleability of aggressive behavior into middle school. Development and Psychopathology, 10, 165-185.

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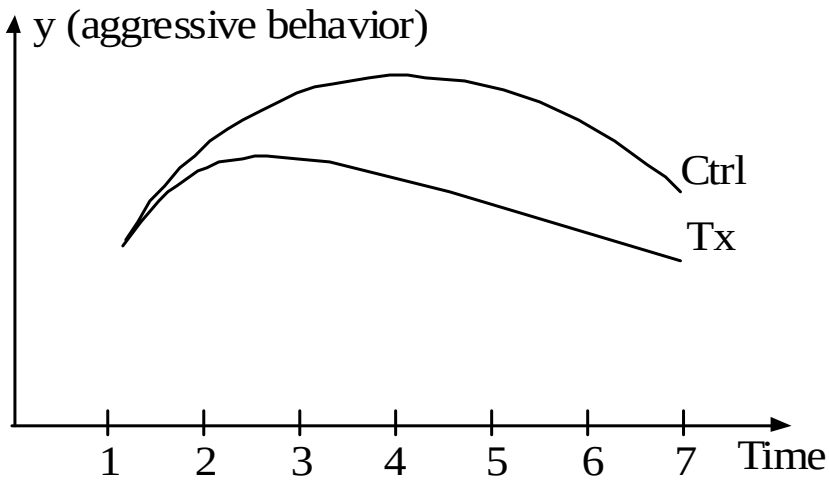
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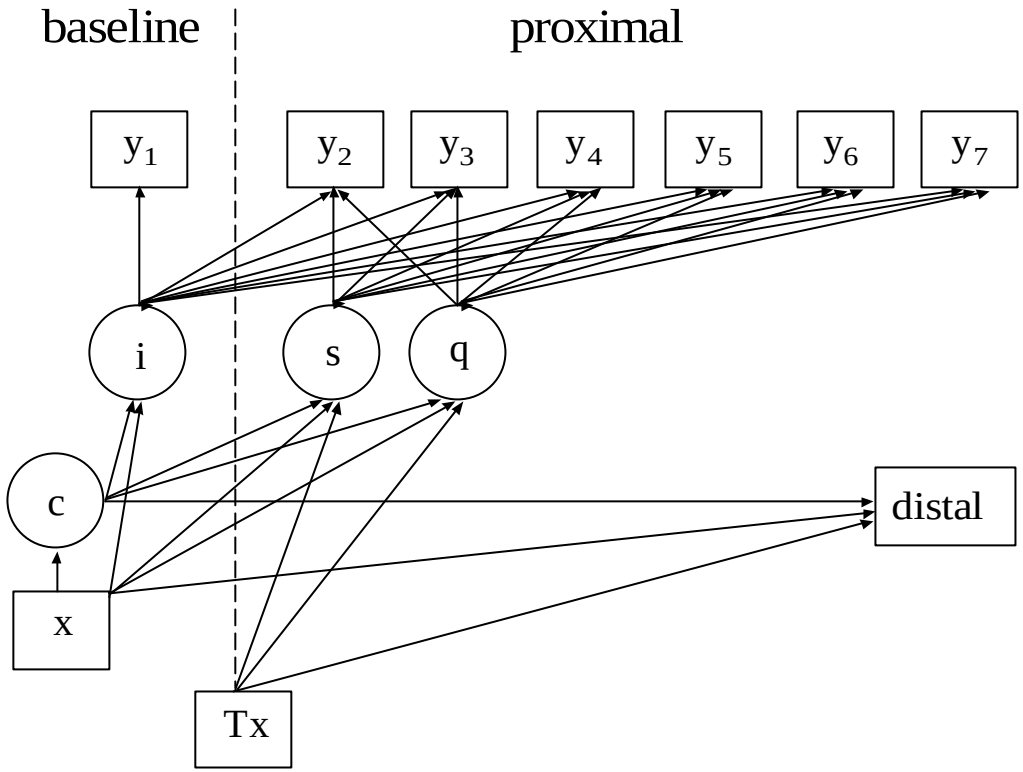
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Methods Topics

- Linear regression, ANCOVA, path analysis, and SEM
- Growth modeling
- Logistic regression
- Survival analysis
- Latent class and growth mixture analysis
- Multilevel regression
- Multilevel growth modeling
- Designs, power
- Causal inference and noncompliance