

## Journal Article Presentation

**Introduction:** In January 2001, a fire in a café in Volendam, Netherlands wounded 250 adolescents and killed 14. 15 months prior to the fire, 124 Volendam students (31 of whom were at the café during the fire) and 830 from two other area schools completed a baseline youth self-report questionnaire about behavioral and emotional problems. These were to be used to test the effects of a school-health promotion program. 5 months after the disaster, the authors obtained follow up data from the students. The 124 Volendam students were used as the experimental group, and the other 830 acted as the controls.

**Title:**

The effect of a severe disaster on the mental health of adolescents: a controlled study.

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*The Lancet*, 2003, 362, 691-696

**Theory:** Severe disasters greatly affect the mental health of children and adolescents.

**Hypothesis:** Severe disasters will increase anxiety, depression, thought problems, and aggression. Severe disasters will also increase various substance abuses in children and adolescents.

**Theoretical Construct I:** Disaster effect on children's mental health and inclination to use various substances.

**Corresponding Operational Definition:** Youth Self Report questionnaires. (YSR)

**Design:**

**Study (Experimental or Quasi-Experimental):** Quasi-Experimental

**Subjects:** Adolescents aged 12-15 years. 954 at baseline, 734 follow up. 124 experimental, 830 controls.

**Independent Variable I:** Severe Disaster

**Scale of Measurement:** Quantitative

**Dependent Variable I:** Mental Health

**Scale of Measurement:** Ratio

**Dependent Variable II:** Various Substance Abuses

**Scale of Measurement:** Ratio

**Results:**

**Main Effect I (Of First IV):** Increased self-reported anxiety, depression, thought problems, and aggression. Increases were larger in the affected school than the control schools.

**Main Effect II (Of Second IV):** Increased use in substance abuse, all increases larger in the affected school, but differences were only significant for excessive drinking ( $p < 0.0001$ ).

**Interaction (If more than one IV):** Many students may increase drinking or substance abuse to self-medicate symptoms of anxiety, depression, thought problems, and aggression.

**Discussion (This is what YOU, not the Authors, think of the study):**

**Did the Operational Definitions Correspond well to the Theoretical Constructs?**

Yes, for the circumstances. In order to obtain true experimental data, the same questions should be asked before and after the treatment. Obviously, the researchers conducting the baseline study could not foresee a disaster, therefore could not design questions specific to disaster victim's emotions and states of mind. The YSR worked in this case as it measured what the researchers were looking to measure.

**If the results were significant, did they have a big effect?** Increases in outcomes did not differ significantly according to exposure to the disaster, although the differences were larger for Volendam adolescents who were present at the fire. The results were found to be insignificant, which is explained in great detail by the authors. They attribute this insignificance greatly to the fact that 220 students (33 affected, 187 control) were lost in follow up. The author's claim that the proportion of adolescents in the fire who were injured was much larger in those lost to follow-up than in the analyzed group (Many who were injured did not complete follow up questionnaires). These adolescents were more likely to show adverse effects, which implies that the researchers may have underestimated the effects of the disaster. This high mortality rate shows that although the data showed no significance, it was also not completely representative of the sample that the researchers wished to study, as most of the severely affected did not complete follow up questionnaires.

**What are the Potential Confounds?** There are many potential confounds in a survey like this. Mental health and susceptibility to substance abuse is influenced by many factors, not just the experience of a severe disaster. The experimenters countered these

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September 29<sup>th</sup>, 2003

confounds by obtaining data for the student's sex, age, level of education, ethnic background, religion, and parental employment. The study does not, however, show what the experimenters did with this data, just that it was obtained. Also, the baseline was conducted to test the response change after the students completed the health-promotion program. This program may have had some effect on the children's decision-making process. Responses were anonymous and could only be linked by school code, sex, date of birth, and initials of the adolescent, which could help curb experimenter bias.

**Do you agree with the Authors?** I agree that the insignificant results could be linked to a high mortality rate. Children who were the most severely affected are the ones who would probably experience the greatest affect, and many of these children were lost in follow up.

**How would you have done the Study differently?** This is a hard study to repeat, because the chance of a disaster is something completely out of experimental control. YSRs could be changed to account for mental health and substance abuse at the baseline in case this should happen again. I may have also used a different method than just the YSRs, but being as the YSR was used at baseline, the experimenters had to ask the same questions again. Ideally, one could foresee an event happening (ex: an economic slump) and test the effects on children's mental health and substance abuse before and after the event. But due to ethical reasons, it is hard to design a study that tests only the effects of a severe disaster.

**Even if you were completely happy with the Study, what would you do next?** It would be interesting to talk to the children now, and turn it into a longitudinal study. The long-term effects could be significant, in that the disaster may not have affected them shortly after it occurred, but strains on their development could be detrimental in the long run. I would keep following up on these children until they became adults.