

# Sense of Personal Efficacy and Family Social Support As Moderators of the Effects of Stressful Life Event on the Increase in Alcohol Use in Adolescence

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# Abstract

- This study analyzed the relationship between change in stressors and the moderating effects of sense of personal efficacy and family support on the increase in alcohol use for adolescents that have initiated alcohol use before grade 6. Growth curve modeling was used to analyze the relationship between changes in stress and alcohol in a school sample (grades 6 to 9). The data for the study came from healthy for life, an intervention program implemented in Wisconsin in the late 1980's. It was hypothesized that adolescents who had initiated alcohol use before grade 6 would have different rates of increase on alcohol use over time, and that these differences would be related to the risk associated to different stressors. It was further hypothesized that the effects of stressful life events on the increase in alcohol use would be moderated by family social support and sense of personal efficacy.
- The results of the study supported the hypothesized effects of stressful events on the increase in adolescent alcohol use. Family social support was a strong moderator of the effects of stressful life events on the increase in alcohol use.

# Introduction

- Alcohol use is a prevalent phenomena in adolescence.
- While experimentation with alcohol at some point in the school years can be considered normative, increase in use is a sign of adjustment problems.
- It is important to look at individual trajectories of alcohol use and covariates that are related to these two different groups.
- Lifetime prevalence of alcohol use in 10<sup>th</sup> grade has been estimated at over 70% (O'Malley, Johnston & Bachman, 1999).
- 30-day prevalence of having been drunk has been estimated at over 22% (O'Malley, Johnston & Bachman, 1999).

# Framework for the Study

- Stressors and protective factors are conceptualized as changing over time.
- Their measurement and analysis usually does not follow this conceptualization.
- They need to be measured and conceptualized as time-changing covariates.

# Goals of the Study

## General

- Analyze the trajectory of alcohol use in a sample of early adolescents who have started drinking, and the effects of time-varying covariates.

## Specifics

- Look at the (time-varying) effect of stress over alcohol use trajectory.
- Look at the (time-varying) effect of family social support and sense of personal efficacy on alcohol use trajectory.
- Look at the buffering effect of family support and personal efficacy.

# Participants

- The sample for the study consisted of 835 adolescents who were present at the time of the first evaluation (6<sup>th</sup> grade) and who had tried alcohol at least once. They were predominantly white (93%), and male (60%). The mean age was 11.32 years (SD= .52), 12.31 years (SD= .49), 13.33 years (SD= .52), and 14.3 (SD= .50) for grades 6, 7, 8 and 9 respectively.
- They lived predominantly in town or cities (64%), with both parents (70%), mother alone (13%) or mother and stepfather (10%). Sixty-one percent reported that they had lived in this arrangement for all their lives, 13% had lived in this arrangement for at least the past 6 years, 10% between 3 and 5 years and 7% for less than 3 years prior to the beginning of the study.

# Measures

- *Sense of personal efficacy* to lead a healthy life was computed as a composite of the following items: a) I have the skills I need to lead a healthy life, b) There are a lot of things I am able to do to keep myself healthy, c) I am able to resist pressure from friends to do things I know are not right, d) I have control over my own health.
- *Perceived family social support* was measured as a composite of the following items: a) My parents really care about me, b) I can count on my family and talk to them about things that really matter to me, c) My parents would help me if I got into serious trouble, d) I have a good relationship with my parents
- *Exposure to stressful life events* was measured as a simple count of the following nine events happening on the previous year: a) My mother or father died, b) One of my parents became very ill or was hospitalized, c) A grandparent or close relative died or was seriously ill, d) My close friend died or was seriously ill, e) I was seriously ill or hospitalized, f) My parents were divorced or separated, g) One of my parents remarried, h) I had problems in school, i) My favorite pet died.
- *Alcohol use* was operationalized as frequency of drinking in the past month. Question: how often in the past month did you use beer, wine or liquor? Answers ranged from 1 ("not at all") to 5 ("9 or more times").

# Analytic Strategy

- All the analyses were run as structural equation models (SEM) in order to model change in alcohol use as a latent variable. The predictors were modeled as single indicator variables, so their error terms were fixed to zero.
- The following steps were used in the analysis:
  - The baseline growth in monthly alcohol use was modeled to assess the basic shape of growth.
  - Each predictor was introduced in separate analysis to assess their individual contribution to modifying the trajectories of alcohol use.
  - The simultaneous influence of stress and the buffering variables (i.e., family support, efficacy) were modeled including the interaction term.
- Missing data strategy: From the 835 adolescents who were included in the sample for this study, the retention rate was 92% for grade 7, 86% for grade 8 and 78% for grade 9. In order to make full use of the total sample missing data were multiply imputed using Schafer's PAN software (Schafer, 1997; Schafer, 1999, Schafer, 2000; Schafer & Yucel, 1999). Multiple imputation has been successfully used to impute data sets similar to the one used in the present study (see for example Graham, Hofer, Donaldson, MacKinnon & Schafer, 1997).

# Results

## Individual Predictors

- **Change in alcohol use** was modeled as a linear function of grade (Figure 1). We see a moderate increase over time, and significant variability around the growth parameters.
- **Stressors** were introduced in the prediction of level of use at each time. The effect of stress was significant at each time, and we can see a relative increase in the magnitude of the effect over time . Figure 2 presents prototypical trajectories at +/- 1SD in the stress scale.
- **Sense of personal efficacy** was also a significant predictor at each grade, except at the first time of measurement (Figure 3).
- **Family social support** presented a similar pattern of effect over time (Figure 4).

Figure 1  
Increase in Alcohol Use by Grade

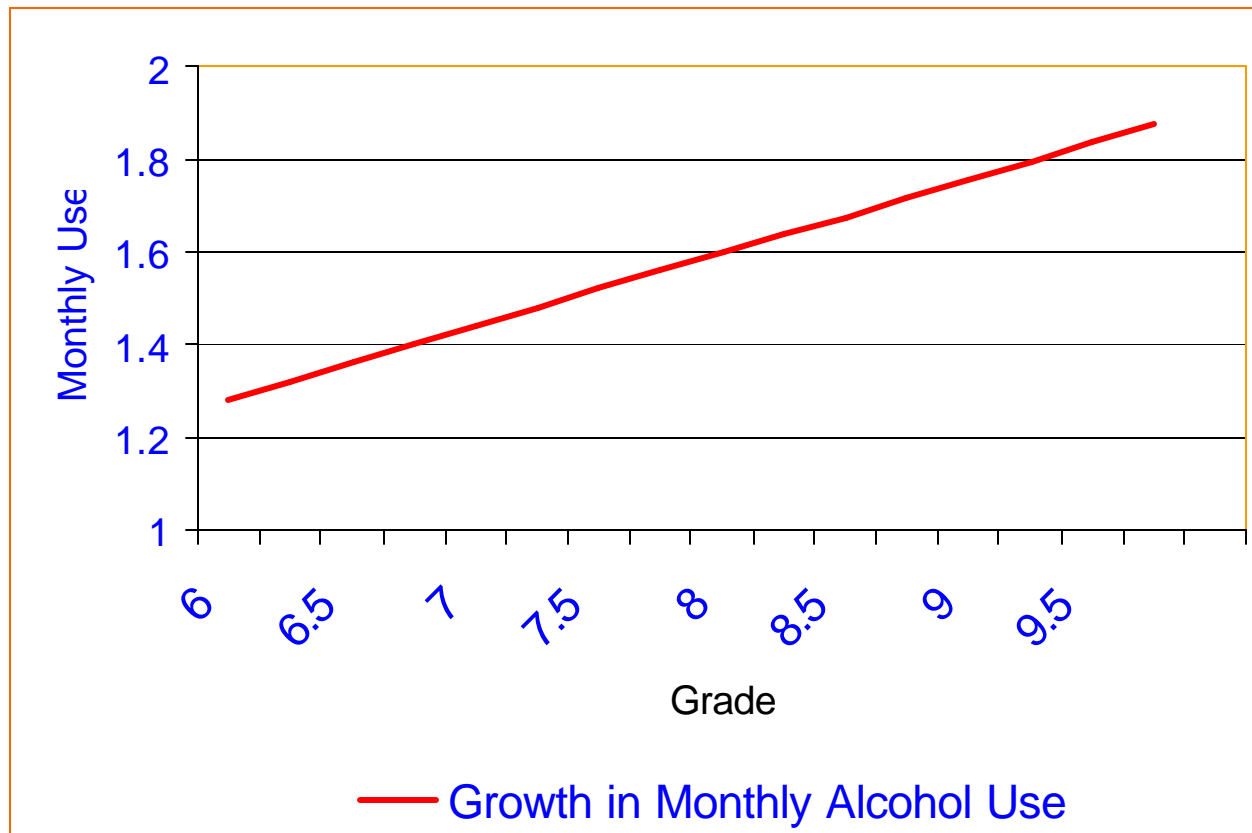


Figure 2  
Alcohol Use Trajectory by Stressors

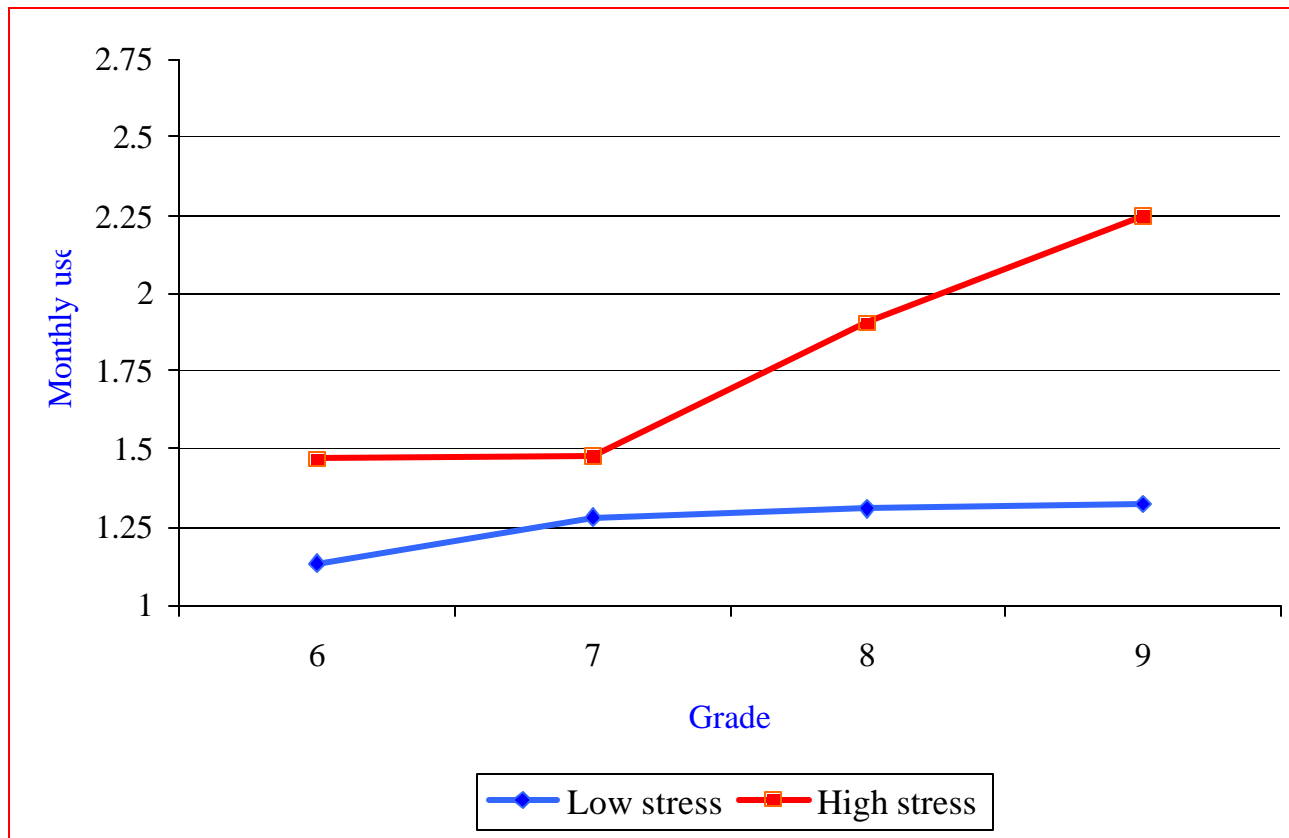


Figure 3  
Alcohol Use Trajectory by Sense of  
Personal Efficacy

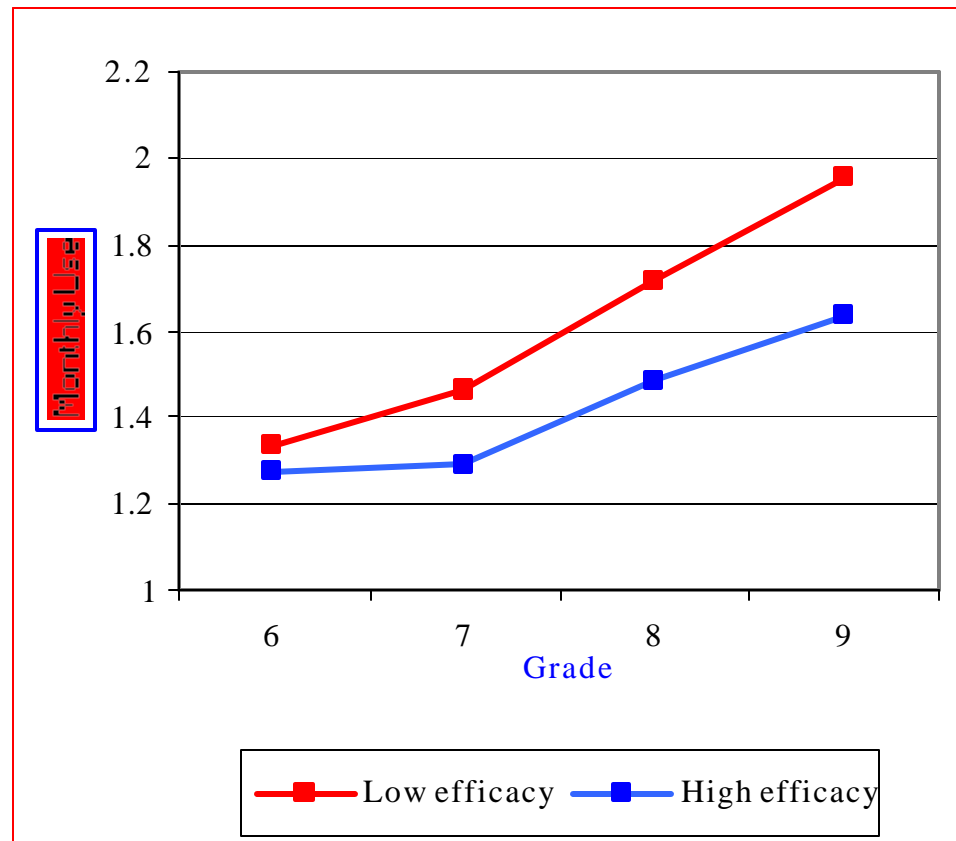
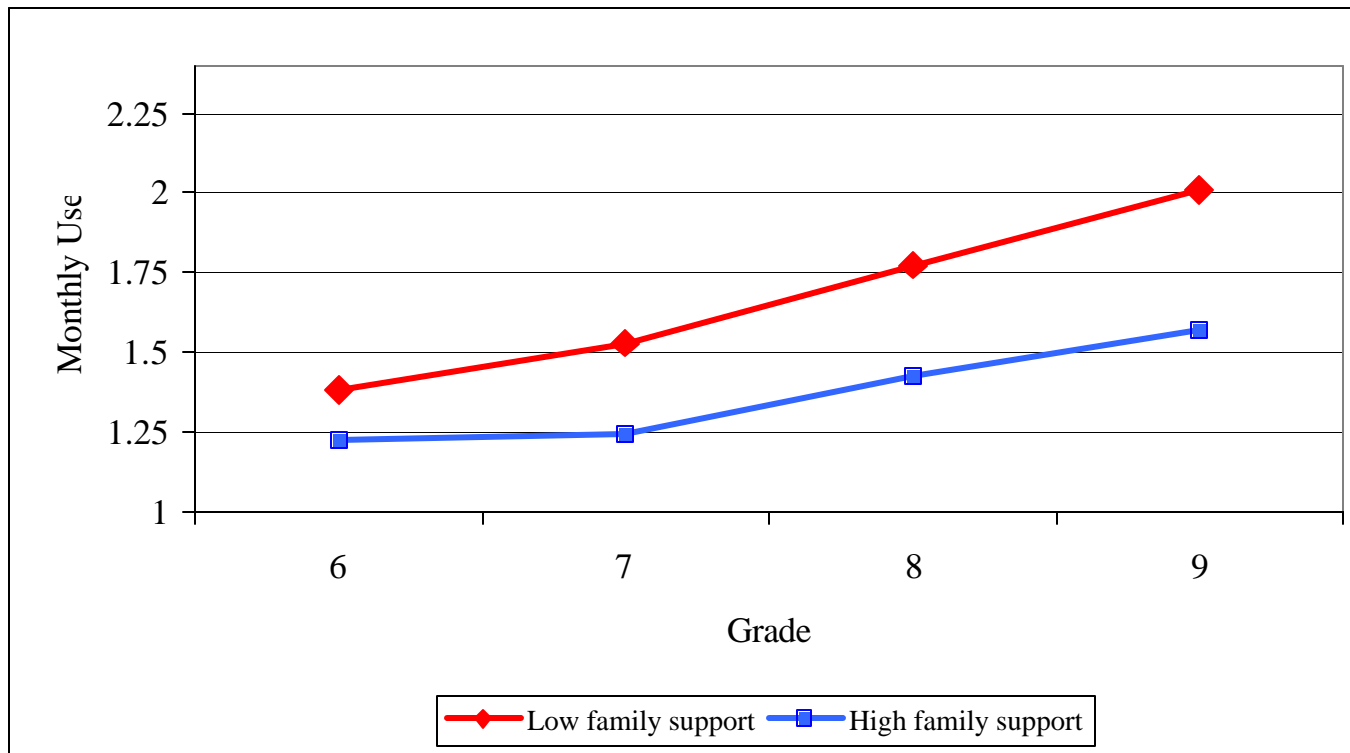


Figure 4  
Alcohol Use Trajectory by Family Social Support



# Results

## Combined Predictors

- The regression coefficients for the interaction of stress and family social support were consistently negative, and marginally significant for grades 6 and 9 (Figure 5).
- The regression coefficients for the interaction of stress and sense of personal efficacy were also consistently negative, but marginally significant for grades 7 and 9 (Figure 6).
- Sense of personal efficacy was also a significant predictor at each grade, except at the first time of measurement (Figure 3).
- Family social support presented a similar pattern of effect over time (Figure 4).

Figure 5  
Alcohol Use by Stress and Family Social Support

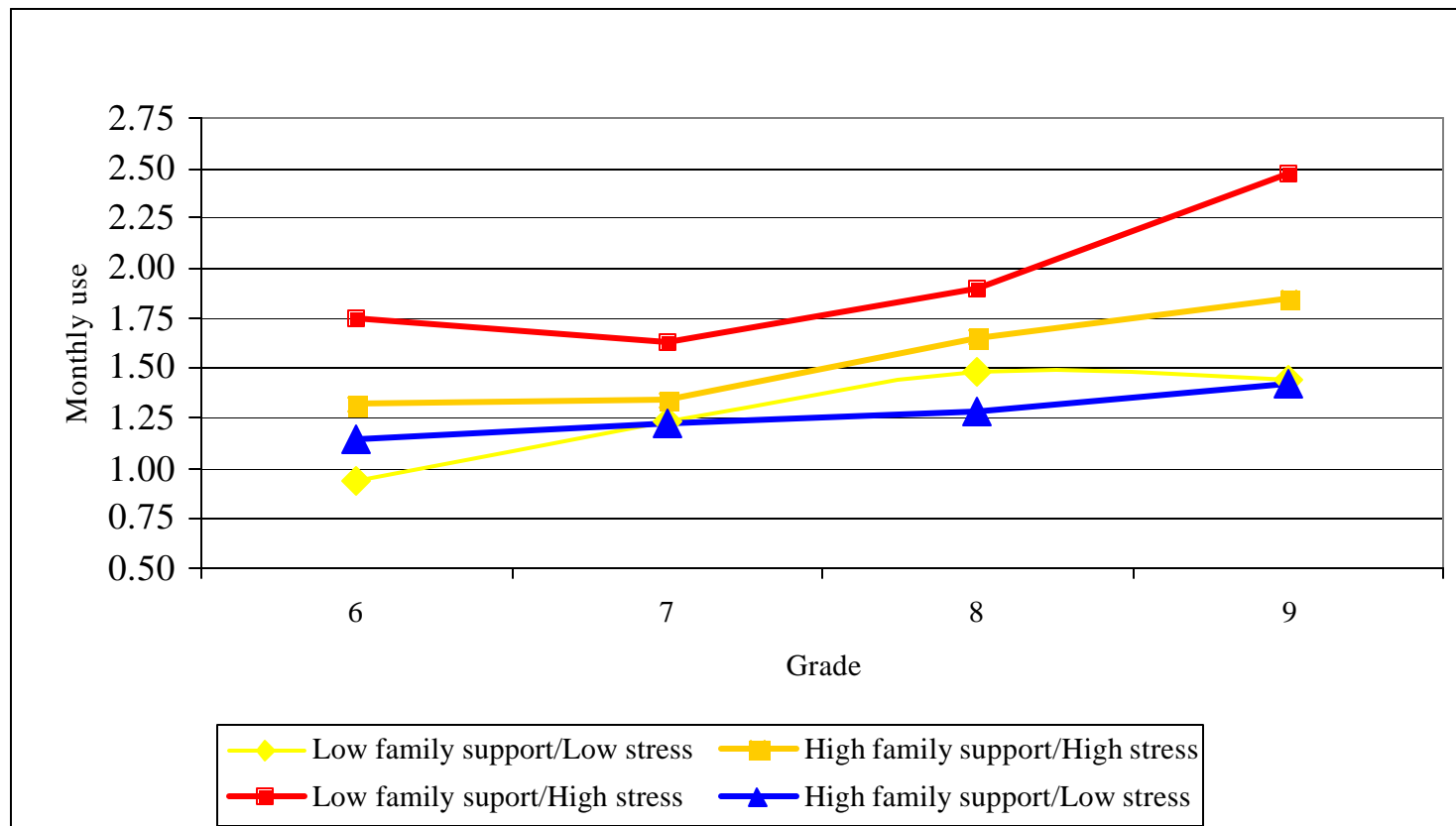
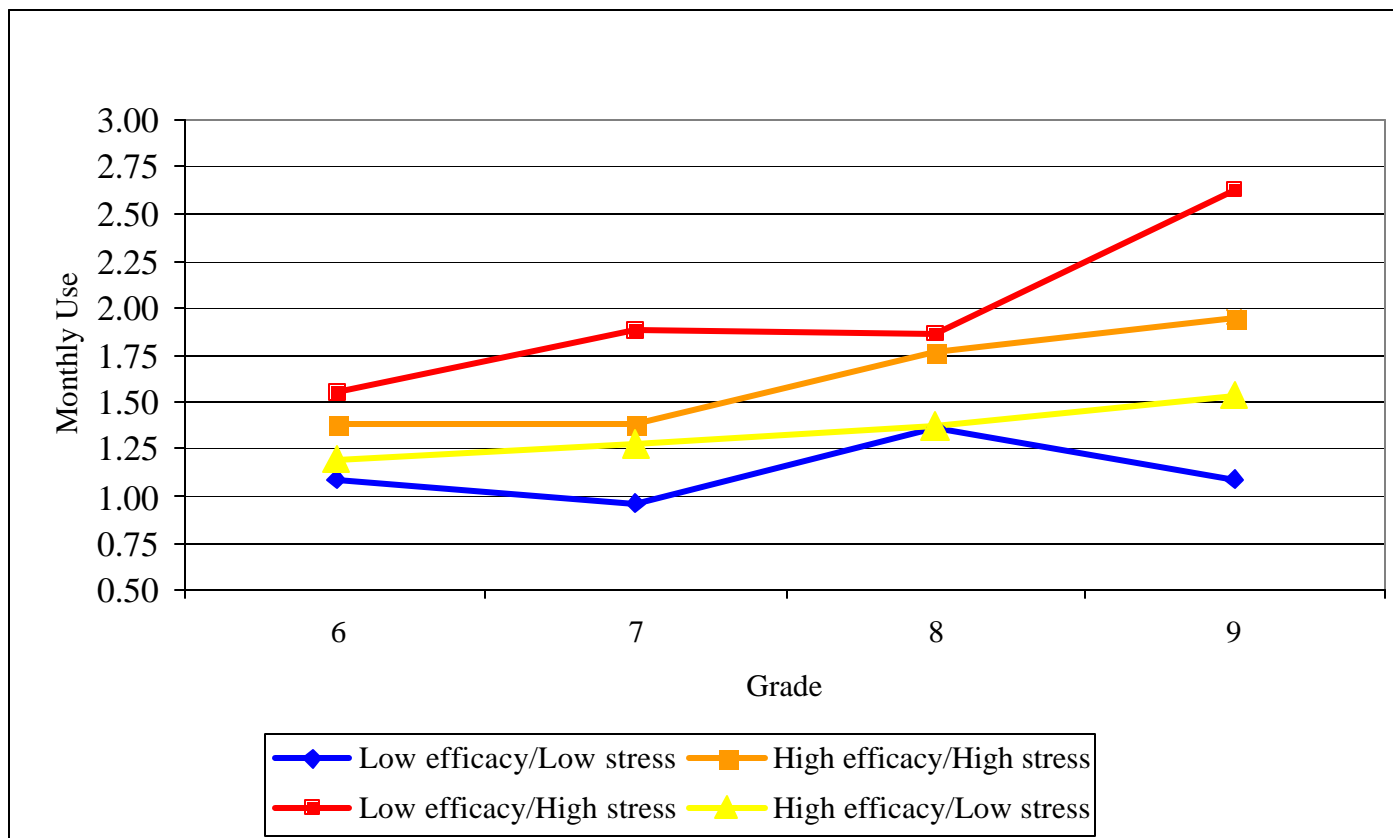


Figure 6  
Alcohol Use by Stress and Sense of Personal Efficacy



# Discussion

## On Alcohol Use Increase

- As a group, young adolescents who have tried alcohol by grade 6 show a systematic increase in alcohol use as they move from early to middle adolescence. This finding is consistent with previous studies showing an average increase in alcohol use through adolescence (O'Malley, Johnston & Bachman, 1998).
- Behind this average increase in alcohol use we can observe individual variability in both the level of use and the rate of increase in alcohol use.

# Discussion

## On Stress as a Risk Factor

- The hypothesis that the differences in level and rate of increase in alcohol use were related to individual risk and protective factors was supported by the results of this study. Specifically, stressful life events are directly related to the level of alcohol use, and increase the likelihood of sustained increment in alcohol use over time.
- The influence of stressful life events tends to increase over time, as the relationship seems to be stronger for older adolescents.

## Discussion

### On Family Social Support and Sense of Personal Efficacy as Protective Factors

- Family social support and sense of personal efficacy had a positive effect in slowing the increase in alcohol use. Furthermore, these two characteristics effectively operated as protective factors, decreasing the impact of stressful events on the individual trajectories of alcohol use.
- The continuous presence of family social support and sense of efficacy seem to operate in such a way as to augment the difference between those adolescents who have them and those who do not.

# Final Thoughts

- The finding that the stable presence of risk or protective factors over time may increase the differences in trajectories of alcohol use in adolescents suggests that they may operate as mechanisms that favor the continuity of behavioral characteristics (Caspi & Bem, 1990). That is, persistent stressful events and lack of family or personal resources lead to continuity in the pattern to alcohol use increase over time. Furthermore, the persistent presence of risk or protective factors acts to accentuate a pattern of adaptation over time, as for example in the increase in alcohol use.