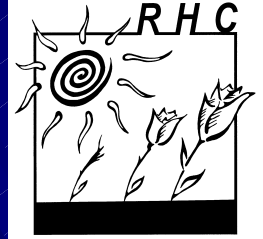




Steering Toward Safety:

Promoting Healthy Driving Behavior through Developmental Prevention



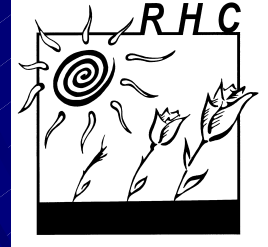
Workshop on the Contributions from the Behavioral and Social
Sciences in Reducing the Preventing Youth Motor Crashes
Board of Children Youth and Families
May 16, 2006

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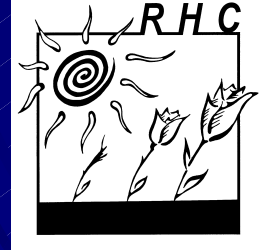
Raising Healthy Children Study Design



- Multi-component social development approach to prevention guided by the our theory Social Development Model (Catalano & Hawkins, 1996).
- 5 matched pairs of elementary schools, randomly assigned to intervention or control condition.
- Study began in 1993 and included a panel of 1040 1st- and 2nd-grade students.
- Annual data collection with teachers, parents, and students.
- Today will report on results at 11th and 12th grade. ²



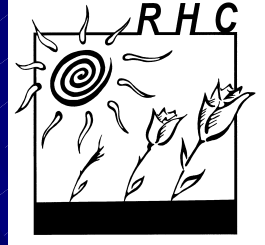
Social Development Approach to Prevention



- Studies have identified risk and protective factors for adolescent behavior located in the individual and environment
- Social Development approaches seek to reduce risk by enhancing environmental and individual protection across development



Risk And Protective Factors Addressed



Risk Factors

■ School

- Low commitment to school
- Academic failure

■ Family

- Poor family management
- Family conflict
- Favorable parental attitudes and involvement in the problem behavior

■ Individual and Peer

- Early antisocial behavior
- Favorable attitudes
- Early initiation
- Friends who engage in problem behaviors
- Constitutional factors

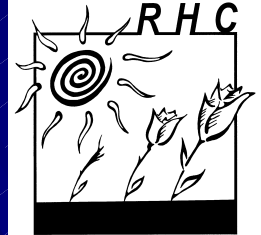
Protective Factors

■ In the socializing units of family, school and peers:

- Opportunities
- Skills
- Recognition
- Bonding
- Healthy beliefs and clear standards



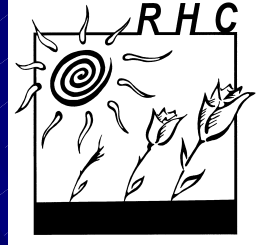
Raising Healthy Children Prevention Strategies



<i>Who?</i>	<i>What?</i>	<i>When?</i>	<i>Why?</i>
School	Teacher and staff workshops that included training in instructional and proactive classroom management techniques.	Grades 1-7	Student cognitive, reading skills, early antisocial behavior, academic performance, bonding to school
Family	Multiple-session parenting workshops. In-home services (selected families) Brief Family Sessions	Grades 1- 9 Grades 9-12	Parenting skills and educational support, family management problems, family standards and rules regarding student behaviors.
Peer Group	Annual summer camps and cognitive and social skills sessions. Developmentally appropriate interpersonal and problem-solving skills	Grades 1-6 Grades 7-8	Opportunity for students to learn and practice social and emotional skills in classroom and social settings.
Individual	After-school tutoring sessions and study clubs. Individualized brief sessions	Grades 4- 6 Grades 7-12	Academic achievement, family and school bonding, refusal skills, prosocial beliefs regarding healthy behaviors.



RHC Changed Risk, Protection and Outcomes Prior to Brief Family Sessions



At grade 10, students from program schools show

At the end of the 2nd and 3rd grades, compared to controls, program students:

Increased

- social competency
- school commitment
- academic achievement

Decreased

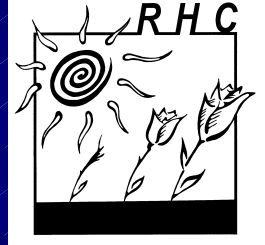
- antisocial behavior

alcohol use
marijuana use





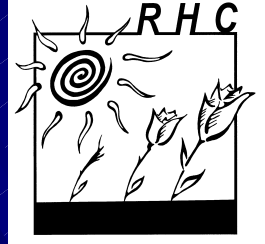
Brief Family Sessions



- Delivered at critical transition points
 - Transition to high school-Grades 8 and 9
 - Transition to driving-Age 15.5 and post licensure
 - Transition out of high school- 11th and 12th grades
- Enhance bonding and healthy beliefs and clear standards through providing developmentally appropriate opportunities, skills and recognition
- Apply parent and child skills taught earlier to new developmental context (eg., **G**uidelines **M**onitoring **C**onsequences, social and emotional skills, negotiation and problem solving)
- In-home delivery with caregiver and adolescent or mail with phone follow-up



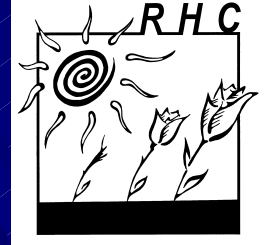
Why is Driving a Critical Transition?



- **Motor vehicle crashes are the leading cause of death among 15- to 20-year-olds in the United States** (National Highway Traffic Safety Administration, 1999)
- **Youth account for only 4.5% of all miles driven, yet 32% of all crash costs** (Miller, Lestina, & Spicer, 1998)



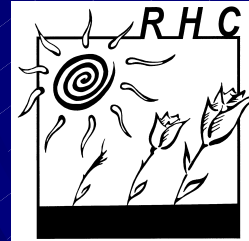
Specific Predictors of Poor Driving



- **Insufficient driving experience** (Doane & Griffith, 2000)
- **Poor judgment and impulsivity** (Doane & Griffith, 2000, Jelalian et al., 2000, Gerrard, et al., 1996)
- **Peer influence** (Preusser, Ferguson, and Williams, 1998)
- **Driving under the influence** (Greening & Stoppelbein, 2000; Grube & Voas, 1996; Harre, 2000; Jaccard & Turrisi, 1999; Thombs, Beck, Mahoney, Bromley, & Bezon, 1994; Townsend, Lane, Dewa, Brittingham, 1998)
- **Parenting Practices** (Bingham & Shope, 2004; Beck, Shattuck, Raleigh, & Hartos, 2003; Hartos, et al., 2000; Griffith, et. al., 2004; National Highway Traffic Safety Administration, 1999a; Schuman, et al., 1971; Simons-Morton, Hartos & Leaf 2002)



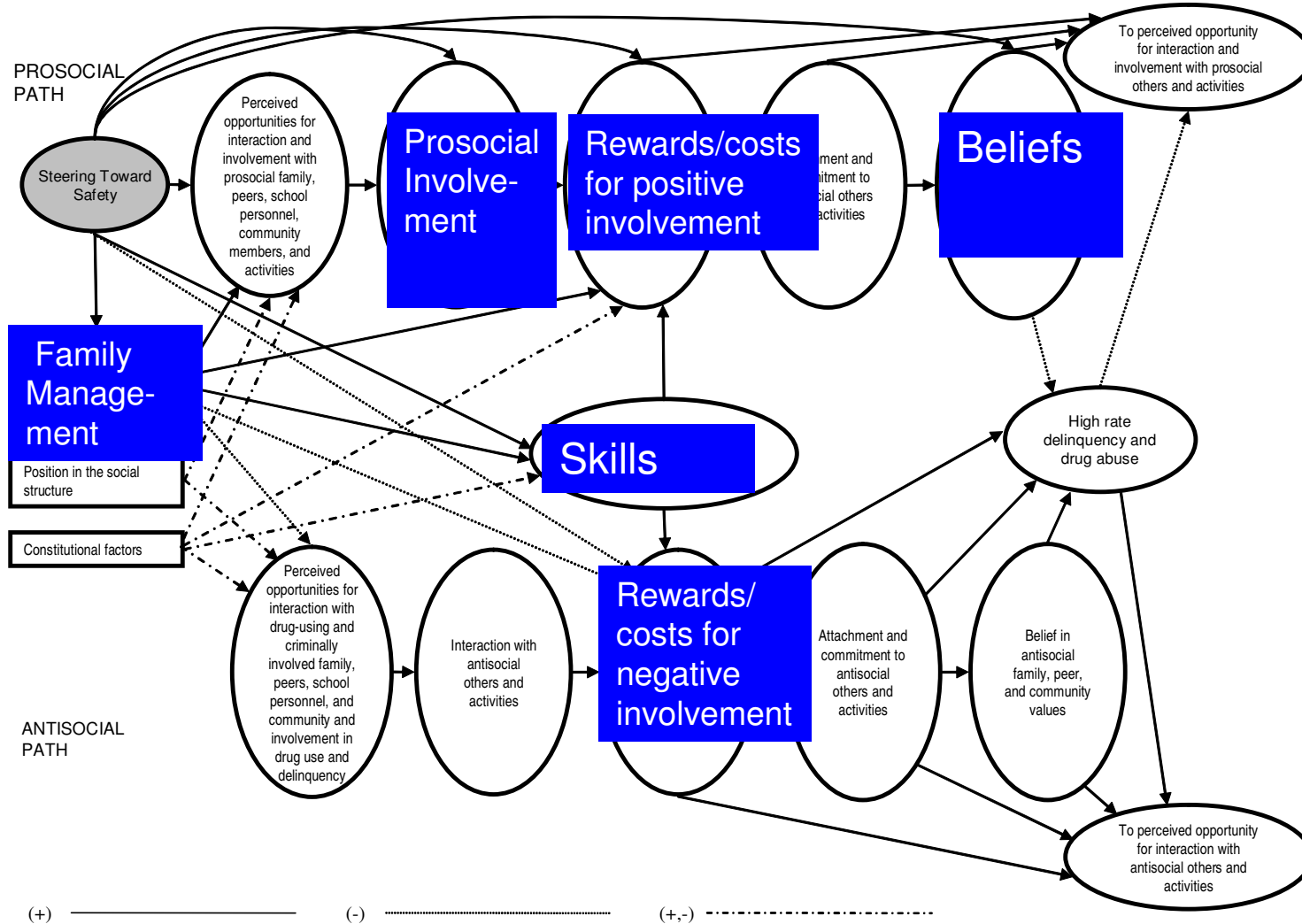
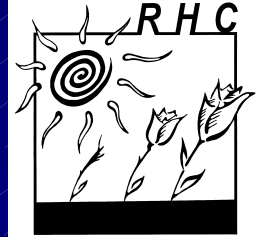
Parenting Affects Poor Driving



- Good parenting reduces poor driving
 - Parent opportunities to communicate expectations
 - Skill development (emotion management, decision making, refusal skills)
 - Limit setting (Guidelines)
 - Parental monitoring
 - Establishing clear consequences related to driving behavior
- Developing driving contracts with juvenile traffic offenders resulted in significantly fewer subsequent traffic citations compared to a control condition who did not receive the intervention (18.2% vs. 28.3%) (Doane & Griffith, 2000).
- Family programs with universal populations have shown promise of affecting driving behaviors (Simons-Morton, et al., 2004)



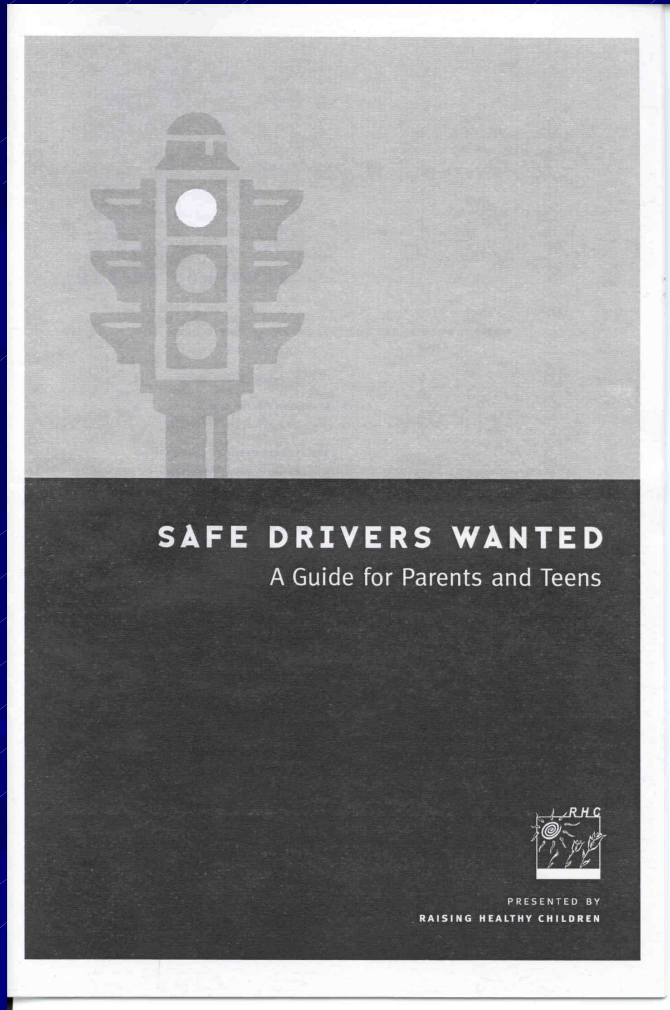
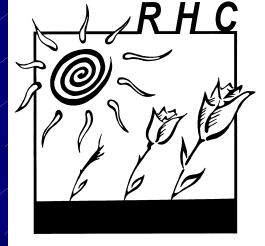
The Social Development Model : *High School Period*





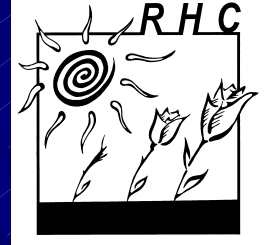
Brief Driving Session #1

Safe Drivers Wanted



Objectives

- Parents and teens discuss trying new things in adolescence and understand their perspectives on risk taking
- Parents and teens understand the current driving laws
- Understand the risks of driving while young and inexperienced
- Teens practice skills for making healthy choices-motivations, consequences
- Parents demonstrate the ability to coach their teen in using decision making skills
 - reduce conflict
 - effective communication
- Parents and teens integrate information and skills into guidelines and expectations for the “driving years”



Sample page

WHEN DEVELOPING A CONTRACT, MAKE SURE THAT:

- The guidelines you develop are clear and specific;
- Teens take an active part in developing the guidelines and the plan for monitoring them;
- The consequences are pre-determined by both parent and teen. In this way, teens are more committed to living with the consequences of their choices and parents don't have to be the heavy all alone. For example, a parent may simply ask—"What was your understanding of the consequence for driving home when it's dark?"

EXAMPLE: DRIVING AFTER DARK

GUIDELINE: Jason is allowed to drive the car only when it is light outside for the first six months.

MONITORING: He will notify parents in advance what time he'll be home.

CONSEQUENCES:

- Following: After six months of driving safely during daylight hours, he is allowed to drive until 10 p.m.
- Not following: The driving at night restriction will continue for another month.

EXAMPLE: DRUGS AND ALCOHOL

GUIDELINE: I will not use alcohol, tobacco or other drugs. It is against the law. I will not put my life in danger by driving under the influence or riding with someone else who has been using.

MONITORING: Parents will talk to friends and parents of friends.

CONSEQUENCES:

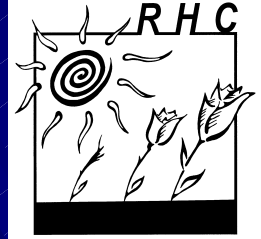
- For following: Use of car.
- For *not* following: If I ride in a car where anyone, including me, has used alcohol, tobacco or other drugs, I will lose my independent driving privileges and for six months and will only be allowed to ride with my parent(s).

- Things to consider in developing a driving contract.
 - Car use(when, where, who)
 - Drug and Alcohol use and driving privileges
 - Finances
 - Procedures, logistics
 - Safety
 - Consequences



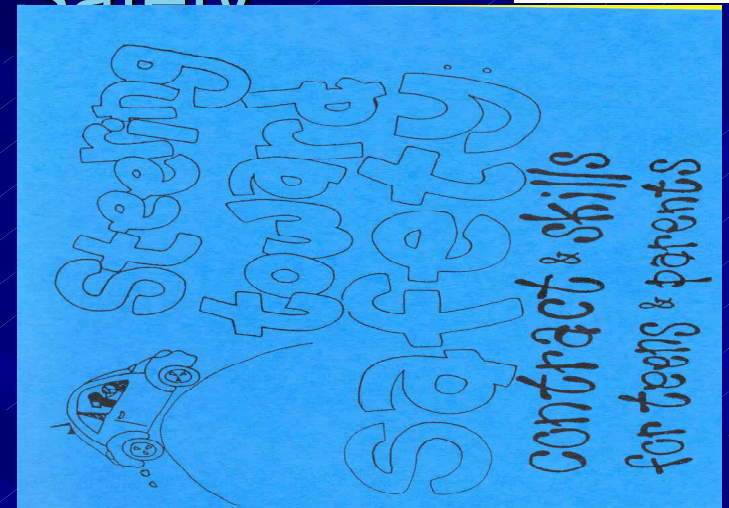
Brief Driving Session #2

Steering Toward Safety

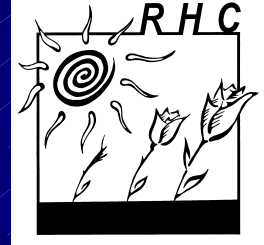


Objectives

- Parents display competence in using communication and anger management skills with their teen.
- Teens learn how to handle accidents, dead batteries, flat tires.
- Implement a family driving contract.
- Apply **GMC** to driving related difficulties and conflict.
 - Demonstrate knowledge and use of effective consequences.
 - Identify ideas for recognizing teens' positive driving behavior.

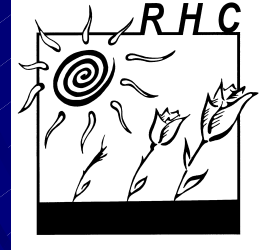


MANAGING EMOTIONS SKILLS	
1. Signal - Recognize your feelings "I feel..." 2. Think about what your options and choose one or more. "I can..." 3. Act on what you decide. "I will..." 4. Review how successful you were at managing your emotions. "That was..." 5. Self-Reward "I feel good when..."	EXAMPLE You are driving at the posted speed limit on a busy road and the driver behind you keeps tailgating and flashing their lights at you. 1. "I feel angry that the other driver is acting like I should go faster when I'm already going the speed limit." 2. "I can..." (a) stay in this lane and maintain my current speed (b) put on my blinker and change lanes as soon as I have a chance (f) make an angry gesture at the other driver 3. Act on what you decide: you turn on your blinker and merge right as soon as there's space. 4. Review how it went: "I moved over and the other driver sped up and started tailgating the next driver. I got to my destination safely and on time." 5. Self-Reward: "I'm really glad that I kept my cool because that other driver seemed reckless."



Study Sample Characteristics

Average Age (as of May 2004)	17.68 yrs
Percent male	53%
Percent who had driver's license	57%
Percent in experimental condition	54%
Grade	
12 th grade	38%
11 th grade	45%
Not attending school	17%
Receiving TANF/Free/reduced lunch at grade 8	23%
Sample size	924

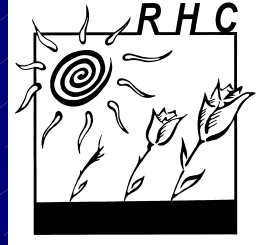


Exposure

- Session #1—Safe Drivers Wanted
 - 96% of the eligible families received the session
 - 56% received a home visit
 - 44% received a mailed packet and a phone follow-up
- Session #2—Steering Toward Safety
 - 80% percent of eligible licensed drivers from experimental schools received the session
 - 59% received a home visit
 - 41% received a mailed packet and a phone follow-up



Specific Research Questions

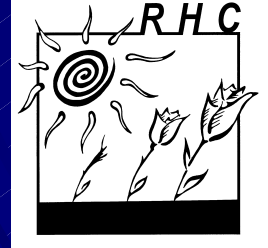


Would participation in Steering Toward Safety Increase:

- Family rules about driving
- Compliance with driving laws

And Reduce:

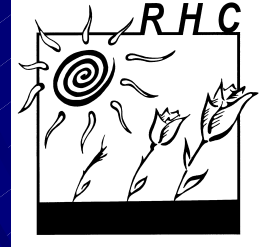
- Driving under the influence of alcohol and other drugs
- vehicle crashes



Controls

measured at 8th grade

- Parenting behaviors, child report of:
 - Guidelines (index of responses of 5 household rules)
 - Monitoring (seven items, $\alpha=.81$)
 - Consequences (likelihood of punishment for skipping school or using drugs, alcohol, $r=.58$)
- Substance use
 - self report of cigarette, alcohol, and marijuana use
- Gender
- Socioeconomic status

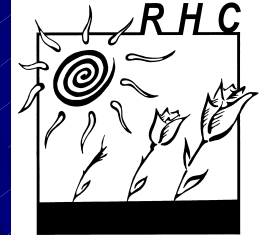


Analyses

1. Multiple imputation of 10 complete data sets using NORM
2. Significance levels and odds ratios for experimental versus control comparisons after controls for covariates assessed using HLM
 - Students nested within original elementary school
 - Experimental condition treated as a school level variable
 - Covariates included as individual level variables
3. Parallel procedures used for the subsample of 526 students (243 C's, 283 E's) who had their driver's license



Results: Full Sample

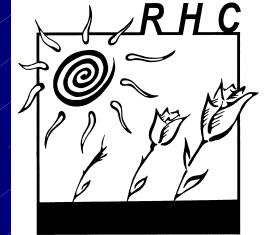


	Cont. % (n=427)	Exp. % (n=497)	Adjusted Odds Ratio
Rules about driving			
Teen Report			
Does your family have a rule about driving?	62.7	67.8	1.23
Did you help make the family rule?	19.9	29.6	1.70*
Does your family have a driving rule in the form of a written contract?	2.6	11.3	4.98*
Parent Report			
Does your family have a driving rule in the form of a written contract?	6.6	21.4	3.58*
Compliance with Driving Laws—Teen Report			
Received a ticket?	23.5	26.6	1.17
Been in an accident?	22.4	21.5	0.96
Driving and Substance Use—Teen Report			
Driven under influence of drugs?	16.1	11.3	0.58 +
Driven under influence of alcohol?	12.0	8.0	0.57*
Driven in a car w someone (< age 21) who drinking?	24.1	18.3	0.65*

*p<.05 +p<.10

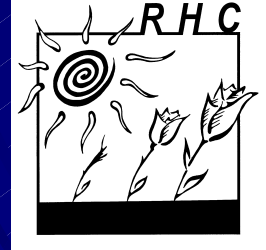


Results: Those with Driver's License



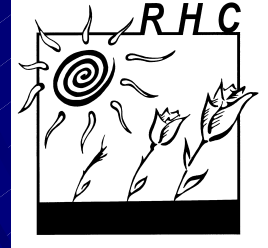
	Cont. % (n=243)	Exp. % (n=283)	Adjusted Odds Ratio
Rules about driving			
Teen Report			
Does your family have a rule about driving?	60.9	67.4	1.35
Did you help make the family rule about driving?	24.3	37.9	1.95*
Does your family have a driving rule in the form of a written contract?	3.7	17.4	5.93*
Parent Report			
Does your family have a driving rule in the form of a written contract?	9.4	31.9	4.34*
Compliance with Driving Laws--Teen report			
Received a ticket?	36.4	42.8	1.3
Been in an accident?	33.1	34.6	1.06
Driving and Substance Use--Teen report			
Driven under the influence of drugs	19.5	14.5	0.59+
Driven under influence of alcohol?	17.8	10.6	0.45*
Driven in a car w someone (< age 21) who drinking?	24.4	17.0	0.56*

*p<.05 +p<.10



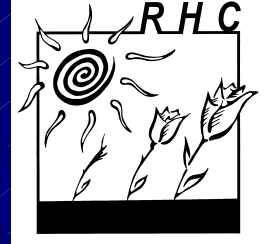
Effects on Driving Outcomes

- Analyses targeted brief family session content and controlled for earlier program impact and parenting behaviors
- Intervention families were 4-6 times more likely to report a driving contract
- Intervention teens reported less driving under the influence of alcohol and riding with peers who had been drinking
- No effects on self-reported vehicle crashes and tickets-**may need more specific consequences**
 - Eg., receiving tickets being tied to the consequence of restricting risky conditions-night time, peers in car, cell phone use, etc.



Limitations

- Brief family sessions were offered as part of a larger social development intervention to reduce risk and enhance protection
 - Earlier results found lower growth in frequency of alcohol and marijuana use (Brown et al., 2005) and early reductions in antisocial behavior and increases in academic performance (Catalano et al., 2003)



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