

Brief Number Three: Prevention Research to Promote the Health and Well-Being of Youth

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The following representations of the slides being presented by Dr. Meyer have been re-formatted for the briefing book.

NIDA Prevention Research Branch Mission

NIDA's Prevention Research Branch supports a theory driven program of basic, clinical, and services research across the lifespan to reduce risks and prevent the initiation and progression of drug use to abuse and prevent drug-related HIV acquisition, transmission and progression

NIDA has published A Research-Based Guide: Preventing Drug Use Among Children & Adolescents for Parents, Educators and Community Leaders

Principles Related to Risk and Protective Factors

- *Prevention programs should,*
 - Enhance protective factors and reverse or reduce risk factors
 - Address all forms of drug abuse, alone or in combination
 - Address the drug abuse problems of the local community by targeting modifiable risk factors and strengthening protective factors
 - Tailor to address the risks specific to the target population

Principles Related to Prevention Planning

- *Family programs should,*

- Enhance family bonding, parenting skills and communication

- *School Programs should be specific to the developmental status of the children*

- Before/during the elementary school years: self control, emotional awareness, problem solving, communication & academic readiness/competence

- Middle, junior high and high school: peer relations, study habits and academic support, communication, self-efficacy and assertiveness, drug resistance skills

Family-Level Risk and Protective Factors

Risk Factors:

Harsh discipline

Rejection/neglect

Lax supervision

Parent/sibling drug use

High family conflict

Parent mental illness or life stress

Protective Factors:

Consistent discipline

Close family bond

Monitoring/supervision

Anti-drug family rules

Family communication

Functional family

Principles related to Prevention Program Delivery:

- When communities select programs to meet their needs, the implementation should retain the core elements of the original program***
- Prevention is an on-going effort with repeated programming over time to reinforce earlier goals and develop new skills***
- Teacher training in classroom management is a critical school-based prevention strategy***
- Evidence based prevention interventions are cost effective.***

The Prevalence of Evidence-Based Drug Use Prevention Curricula (EBC) in the Nation's Middle Schools in 2005

- Over 20 years of prevention science has produced many EBCs for school settings
- Long-term follow-up demonstrates impact that lasts into adulthood (with crossover effects)
 - Since 1998, many attempts have been made to promote implementation of EBCs. For example, schools receiving funds through Dept. of Ed's Safe and Drug Free Schools are required to implement EBCs on registries
 - Current study tracks use of universal EBCs into U.S. public middle schools in 1999 and 2005

More Schools Use Evidence-Based Curricula (EBC), but Most Still Do Not

- *Percent using any EBC*

- In 1999, 34.4

- In 2005, 42.6

- *Percent using mostly EBC*

- In 2005, 22.7

Additionally...

- *40% of middle schools used programs that were developed locally (17% used these the most)*
- *In a parallel study of high schools, 10% used EBCs (6% used EBC the most, Ringwalt et al, 2008).*

Research Questions

- Why do 75% of middle schools and 90% of high schools continue to administer curricula not identified as effective?
- Under what conditions do schools choose EBCs and continue to implement them?
- What adaptation, coaching, and technical assistance processes facilitate sustained implementation of EBCs?
- What community drivers promote uptake and sustainability?

Big Picture of Prevention Science

Summary: Using Prevention Research to Promote Health and Well-Being in Youth

•*Program Level*

- What is the evidence to indicate the program affects key risk and protective factors for substance use?
- Has it been implemented outside original site of research?

•*Community Level*

- What data is available about community's strengths and needs?
- What programs match the goals of this community?
- What community-level drivers exist to promote uptake and sustain the effort over time?
- What organizational supports exist within settings?

Abstracts of evidenced-based studies

Small, S.A., Cooney, S. M. & O'Connor, C. (2009). Evidence-informed program improvement: Using principles of effectiveness to enhance the quality and impact of family-based prevention programs. *Family Relations*, 58 (1), 1-13.

In recent years, federal, state, and local governments and other funding organizations have increased pressure for greater effectiveness and accountability of prevention programs, including those oriented toward families. This rising demand for program accountability has fueled a growing interest in evidence-based programs. Drawing on what is known about evidence-based prevention programs we discuss some common principles of effective programs and present a process for how practitioners can use these principles to improve the quality and impact of existing family programs. We term this approach evidence-informed program improvement.

Ringwalt, C. Vincus, A.A., Hanley, S., Ennett, S. T. Bowling, J. M. & Rohrbach, L.A. (2009). The prevalence of evidence-based drug use prevention curricula in U.S. middle schools in 2005. *Prevention Science*, 10 (1) 33-40.

Since the promulgation of its Principles of Effectiveness in 1998, the Office of Safe and Drug-Free Schools of the U.S. Department of Education has promoted the use of evidence-based drug prevention programs in the nation's schools. We report the results of a survey, conducted in 2005, of a nationally representative sample of 1,721 schools with middle school grades. Respondents comprised the staff member in the school identified as most knowledgeable about the school's drug prevention programs.

The total response rate was 78%. Respondents answered questions concerning which drug use prevention curricula they used, and, if they used more than one, which one they used the most frequently. Three federally sponsored registries were used to specify which curricula were considered evidence-based. Findings from 2005 were then compared to earlier estimates based on a similar 1999 survey. We found that 42.6% of the nation's schools with middle school grades were using an evidence-based curriculum, an increase of 8% from our 1999 estimate.

The two most prevalent curricula in use, at 19% each, were Life Skills Training and Project ALERT. We note, however, that only 8% of Life Skills Training users and 9% of Project ALERT users reported using those curricula the most, and that only 23% of respondents overall reported that they used an evidence-based curriculum the most. More information is needed as to why over three-quarters of the nation's schools with middle school grades continue to administer curricula that have not been identified as effective.

Bell, M., Padget, A., Kelley-Baker, T. & Rider, R. (2007) Can first and second grade students benefit from an alcohol use prevention program? *Journal of Child and Adolescent Substance Abuse*, 16 (3), 89-107.

Protecting You/Protecting Me (PY/PM) is a classroom based, alcohol use *prevention* and vehicle safety program for *elementary* students from first through fifth grades developed by Mothers Against Drunk Driving (MADD). PY/PM is one of the first alcohol *prevention* programs to target children as early as first grade. The focus of this study is on the youngest students receiving PY/PM, the first and second graders, who were surveyed over a three-year period. Results indicate that, relative to comparison students from matched classes, PY/PM students

increased their knowledge of vehicle safety, media awareness, growth and development, and dangers of alcohol to young persons. This study demonstrates that despite the inherent difficulties of surveying very young children, these children can benefit from an alcohol use *prevention* program that is carefully designed, implemented, and evaluated.

Kulis, S., Marsiglia, F. F., Elek, E., Dustman, P., Wagstaff, D. A. & Hecht, M. (2005). Mexican/ Mexican American adolescents and keepin' it REAL: An evidence-based substance use prevention program. *Children & Schools*, 27 (3) 133-145.

A randomized trial tested the efficacy of three curriculum versions teaching drug resistance strategies, one modeled on Mexican American culture; another modeled on European American & African American culture; & a multicultural version. Self report data at baseline & 14 months post-intervention were obtained from 3,402 Mexican heritage students in 35 Arizona middle schools, including 11 control sites. Tests for intervention effects used simultaneous regression models, multiple imputation of missing data, & adjustments for random effects.

Compared with controls, students in the Latino version reported less overall substance use & marijuana use, stronger intentions to refuse substances, greater confidence they could do so, & lower estimates of substance-using peers. Students in the multicultural version reported less alcohol, marijuana, & overall substance use.

Although program effects were confined to the Latino & multicultural versions, tests of their relative efficacy compared with the non-Latino version found no significant differences. Implications for evidence-based practice & prevention program designs are discussed, including the role of school social workers in culturally grounded prevention.

Werch, C. E., Moore, M. M., Diclemente, C.C., Owen, D. M., Carlson J. M. & Jobli, E. (2005). Single vs. multiple drug prevention: Is more always better? A pilot study. *Substance Use & Misuse*, 40 (8) 1085-1101.

Objective. The purpose of this study was to compare the effects of a single drug, i.e., alcohol, against a multiple drug preventive intervention. **Methods.** A controlled trial was conducted with 448 8th grade students (mean age = 13 years old) from an inner-city middle school (n = 216) & a rural junior high school (n = 232) in 2000-2001. Students were randomized within school, & 3-month post-intervention follow-up data were collected.

Results. Two risk/protective factors were found to differ significantly in favor of youth receiving the single drug alcohol intervention (p's = 0.03), while the frequency of alcohol use & two additional risk/protective factors approached significance (p's < 0.10). **Conclusion.** These findings support the potential efficacy of a brief, single drug preventive intervention over a brief, multi-drug intervention in producing short-term alcohol outcomes for adolescents, & indicate differential effects of interventions for subgroups of substance using youth.

Botvin, G. J., Griffin, K. W., Paul, E., Macaulay, A. P. (2003). Preventing tobacco and alcohol use among elementary school students through life skills training. *Journal of Child & Adolescent Substance Abuse*, 12 (4), 1-17.

The present study examined the effectiveness of a substance abuse prevention program in preventing tobacco & alcohol use among elementary school students in grades 3 through 6. The prevention program teaches social resistance skills & general personal & social competence skills.

Rates of substance use behavior, attitudes, knowledge, normative expectations, & related variables were examined among students (n = 1,090) from 20 schools that were randomly assigned to either receive the prevention program (9 schools, n = 426) or serve as a control group (11 schools, n = 664). Data were analyzed at both the individual level & school-level. Individual-level analyses controlling for gender, race, & family structure showed that intervention students reported less smoking in the past year, higher anti-drinking attitudes, increased substance use knowledge & skills-related knowledge, lower normative expectations for smoking & alcohol use, & higher self-esteem at the posttest assessment, relative to control students.

School-level analyses showed that annual prevalence rate was 61% lower for smoking & 25% lower for alcohol use at the posttest assessment in schools that received the prevention program when compared with control schools. In addition, mean self-esteem scores were higher in intervention schools at the posttest assessment relative to control schools. Findings indicate that a school-based substance abuse prevention approach previously found to be effective among middle school students is also effective for elementary school students.

Valentine, J., Griffith, J., Ruthazer, R., Gottlieb, B., Keel, S. (1998). Strengthening causal inference in adolescent drug prevention studies: Methods and findings from a controlled study of the urban youth connection program. *Drugs & Society*, 12 (1/2), 127-145.

Evaluates the Urban Youth Connection, a substance abuse prevention program for predominantly Hispanic & African American seventh- & eighth-grade students in Boston, MA. Pre- & posttest data gathered 1993-1996 in quasi-experimental fashion from paired & nonpaired self-administered questionnaires issued at a middle & a high school (total N = 336 students) were compared to data from other schools (total N = 443 students). Results indicate that the intervention helps to reduce the 30-day use of beer at the middle school level & beer, wine, & hard liquor at the high school level. Improvements in risk behaviors related to interpersonal violence & academic involvement were also noted. It is concluded that the program's success resulted from strong program-school collaboration, acceptance of participants at their level of health, gender-specific counseling, & staff role modeling.

DeMar, J. (1997). A school-based group intervention to strengthen personal and social competencies in latency-age children. *Social Work in Education*, 19 (4), 219-230.

The effectiveness of a primary preventive intervention to strengthen factors associated with personal & social competencies related to resilience in children that prevents future chemical dependency was tested in a sample of 57 third-, fourth-, & fifth-grade students in three southern FL elementary schools; 69% were black, Latino, or Asian. In general, the intervention groups performed significantly better than matched control groups in cognitive & behavioral areas.

Significant increases in internal locus of control, frustration tolerance, & assertive social skills were revealed, as well as a significant decrease in acting-out behavior.

Park, J., Kosterman, R., Hawkins, J.D., Haggerty, K. P., Duncan, T.E., Duncan, S. C., Spoth, R. (2000). Effects of the “Preparing for Drug Free Years” curriculum on growth in alcohol use and risk for alcohol use in early adolescence. *Prevention Science*, 1 (3), 125-138. Preparing for the Drug-Free Years (PDFY) is a curriculum designed to help parents learn skills to consistently communicate clear norms against adolescent substance use, effectively and proactively manage their families, reduce family conflict, and help their children learn skills to resist antisocial peer influences.

This study examined the effects of PDFY on the trajectories of these factors, as well as on the trajectory of alcohol use from early to mid adolescence. The sample consisted of 424 rural families of sixth graders from schools randomly assigned to an intervention or a control condition. Data were collected from both parents and students at pretest, posttest, and 1-, 2-, and 3 1/2-year follow-ups. Latent growth models were examined. PDFY significantly reduced the growth of alcohol use and improved parent norms regarding adolescent alcohol use over time. Implications for prevention and evaluation are discussed.

Marilia, F. F., Miles, B. W., Dustman, P. & Sills, S. (2002). Ties that protect: An ecological perspective on Latino/a urban pre-adolescent drug use. *Journal of Ethnic Cultural Diversity in Social Work*, 11 (3/4), 191-220.

An ecological risk and resiliency framework was applied to explore how social contexts, especially the role of families and schools, are affecting Latino pre-adolescent substance use in the urban Southwest. A mixed research design, using both quantitative and qualitative methodologies, guided the study. Quantitative data were collected through surveys administered as part of a school-based prevention intervention experiment (N = 2,125). Individual interviews conducted with a randomly selected number of matched students (N = 60) provided the qualitative data.

The main theme emerging throughout both data sets was a strong resilience against drug use of the participating 7th grade urban youth. The vast majority of students did not use hard drugs, and agreed that alcohol use was inappropriate at their age. A high degree of attachment and strong ties to their parents and their school environment emerged as a shared protective factor. Recommendations include social work interventions that support the resiliency characteristics of urban Latino youth in different social contexts such as communities, schools, and families. Limitations of the study are reviewed and suggestions for future research are offered.

Epstein, J., Collins, K. K., Thomson, N. R., Pancella, T. & Pauley, D. (2007). The Doubles: Evaluation of a substance abuse education curriculum for elementary school students. *Journal of Child & Adolescent Substance Abuse*, 16 (4), 1-22.

"The Doubles," funded by the National Institute on Drug Abuse, is a seven-episode series of media tools designed to teach third- and fourth-grade students about the science of drug addiction. The program's curriculum was delivered through a set of DVDs, interactive CD-ROMs, workbooks, or an Internet Site. Results indicate that although the interventions were successful in teaching students about the biological bases of substance abuse, they had little effect on student attitudes. Implications for future studies are discussed.

Hahn, E. J., Hall, L. A., Rayens, M.K., Myers, A. V. & Bonnel, G. (2007). School and home based drug prevention: Environmental, parental, and child risk reduction. *Drugs: Education, Prevention & Policy*, 14 (4) 319-331.

Abstract: The study purpose was to test the effect of a *school*- and home-based alcohol, tobacco, and other drug (ATOD) prevention program on reducing environmental, parent, and child risk factors for ATOD use. The design was a three-group pretest-posttest with interviews at baseline and 1 and 6 months post-intervention. The sample was 126 parents and their 5- to 6-year-old children from three *elementary schools* serving high-risk children.

The quality of the home environment, parents' depressive symptoms and *school* activity involvement, and parents' perception of child adjustment were measured. A *school*- and home-based version of Beginning Alcohol and Addictions Basic Education Studies (BABES) with a parent-child interaction component (BABES Plus) was compared to a classroom-only version of BABES (BABES Only) and a no-treatment control group.

The quality of the home environment improved and depressive symptoms decreased over the post-intervention period for the BABES Plus group, but not for the other two groups. The BABES Only group had greater parent involvement in *school* activities at 6 months post-intervention, compared to the other groups. Children's anxiety/withdrawal decreased and social competence increased over time for all groups. The effect of the BABES Plus intervention was demonstrated at 6 months for environmental and parental risk factors.

Hill, N. L. (2008). Adolescent substance use prevention interventions outside of classroom settings. *Child and Adolescent Social Work Journal*, 25 (6) 451-467.

Substance use prevention programs empowering individual adolescents to resist substance use through education and skills training are crucial to reducing substance use within this population. However, existing programs of this type are designed primarily for classroom use, and may not meet the needs of social workers intervening with adolescents outside classroom settings. A literature review identified six programs that have demonstrated statistically significant reductions in substance use when implemented outside the classroom. The current study describes these programs, identifies their common characteristics, and draws on additional prevention research to outline recommendations for practitioners seeking to apply the field's most current knowledge base in community settings.

Jenson, J. M., Dieterich, W. A., Rinner, J.R., Washington, F., Burgoyne, K. E. (2006). Implementation and design issues in group-randomized prevention trials: Lessons from the Youth Matters Public Schools Study. *Children & Schools*, 28 (4) 207-217.

Group-randomized trials (GRTs) -- studies that evaluate the efficacy or effectiveness of interventions occurring at the group level -- are increasingly used to assess the effects of school-based prevention programs on behavioral outcomes of children & adolescents. These designs pose many implementation & design challenges for school administrators, teachers, & researchers. This article discusses issues associated with the use of GRTs in school-based prevention experiments. Lessons learned from the Youth Matters prevention study, a GRT currently being conducted in 28 urban elementary schools, are outlined. Implications of GRTs for practice & research are noted.

Velleman, R. D. B., Templeton, L. J., Copello, A. G. (2005). The role of the family in preventing and intervening with substance use and misuse: A comprehensive review of family interventions, with a focus on young people. *Drug and Alcohol Review, 24* (2) 93-109.

The family plays a key part in both preventing and intervening with substance use and misuse, both through inducing risk, and/or encouraging and promoting protection and resilience. This review examines a number of family processes and structures that have been associated with young people commencing substance use and later misuse, and concludes that there is significant evidence for family involvement in young people's taking up, and later misusing, substances.

Given this family involvement, the review explores and appraises interventions aimed at using the family to prevent substance use and misuse amongst young people. The review concludes that there is a dearth of methodologically highly sound research in this area, but the research that has been conducted does suggest strongly that the family can have a central role in preventing substance use and later misuse amongst young people.

A Comparison of Current Practice in School-Based Substance Use Prevention Programs with Meta-Analysis Findings

Ennett, S. T., Ringwalt, C. L., Thorne, J., Rohrbach, L. A., Vincus, A., Simons-Rudolph, A. & Jones, S. (2003). A comparison of current practice in school-based substance use prevention programs with meta-analysis findings. *Journal of Prevention 4* (1), 1-14.

The series of seminal meta-analytic studies of school-based substance use prevention program studies conducted by the late Nancy S. Tobler and colleagues concluded that programs with content focused on social influences' knowledge, drug refusal skills, and generic competency skills and that use participatory or interactive teaching strategies were more effective than programs focused on knowledge and attitudes and favoring traditional didactic instruction.

The present study compared current school practice against evidence-based standards for “effective content” and “effective delivery,” derived from the Tobler findings. Respondents were the lead staff who taught substance use prevention in the 1998–1999 school year in a national sample of public and private schools that included middle school grades ($N = 1,795$). Results indicate that most providers (62.25%) taught effective content, but few used effective delivery (17.44%), and fewer still used both effective content and delivery (14.23%).

Those who taught an evidence-based program (e.g., Life Skills Training, Project ALERT), however, were more likely to implement both effective content and delivery, as were those teachers who were recently trained in substance use prevention and were comfortable using interactive teaching methods. The findings indicate that the transfer to practice of research knowledge about school-based substance use prevention programming has been limited.

Paski, B. Demetrovics, Z., Czako, A. (2002). Evaluation of school drug prevention programs--II. Summary of outcome evaluation results. *Addiktologia, 1* (1) 38-49.

(NOTE: This study was done in Budapest.)The outcome of seven school drug programs in the Budapest area, directed towards 5th-10th-grade students was evaluated, drawing on paired pretest & posttest questionnaire data from 958 program participants. Significant differences in gender & program participation were found between the paired (evaluated) & unpaired (total) population. Findings indicate that 23.1% of the students felt that they knew more about drugs

after participating in the programs, with significant differences between individual programs. The proportion of those who felt they "knew everything they wanted to know" increased from 36.9% to 45.6%. No changes in self-efficacy were seen in any of the programs, although high basal levels of self-efficacy (over 3 in a scale of 4) may be responsible for this lack of effect.

Although in general no significant changes in the goal variables were observed, the self-efficacy of students with low (1-2) basal levels (a 25% of the population) increased, supporting the notion that drug prevention programs work for the more endangered populations. In relationship to the health belief model, perceived susceptibility was measured as the possibility of future drug use. Surprisingly, for all programs the possibility of future drug use increased significantly, 66% projected in the near future & 80% in the far future, with a positive correlation to the number of nights spent outside the home.

The effect on perceived susceptibility might be partly due to an involuntary effect of the program, i.e. "sensitization" to reality ("it can happen to me"). Perceived severity was measured as potential problems of drug use & potential dangers of consumption. The former also exhibited significant unfavorably changes, but there was an increase of the perceived danger of drug consumption, particularly of amphetamine, ecstasy & medications (very widespread in Hungary).

There were no significant differences related to the perceived barriers, although when analyzed at the different levels this was the area with most positive results. Of particular interest are here the issues related to peer pressure. In general there was a correlation between the basal level of the indicators & the effect obtained. Of the 181 expected changes, 24% moved in the expected direction, & 18% of them were significant. There was an 8% significant change or trend in the unfavorable direction. The range of positive changes varied among programs, between 6%-58%. Inconsistencies of the interpreters affected negatively the achievement of specific goals. Methodological recommendations for future studies are discussed.

Walsh, R. A. & Tzelepis, F. (2007). Adolescents and tobacco use: Systematic review of qualitative research methodologies and partial synthesis of findings. *Substance Use & Misuse*, 42 (8), 1269-1321.

After a brief overview of adolescent tobacco control, methodological features and content areas of 78 qualitative studies of adolescent smoking published in English prior to September 2002 were assessed. Narrative syntheses of three content areas - peer influences, access/sales issues, and dependence/addiction - were also undertaken. Many studies failed to provide sufficient sampling and subject characterization details and more effort was required to demonstrate data validity and reliability. Syntheses of the content areas revealed important common themes. Relationships to quantitative research were informative and suggested other research questions. The review highlights the heuristic value of qualitative research on adolescent smoking.

