

PREVENTION SCIENCE PRINCIPLES FOR INTERVENTION

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There is growing consensus that a risk reduction and protective factor enhancement approach is the most promising approach across a number of fields. Interventions that seek to *both* reduce risk and enhance protection in multiple socializing domains will likely be more effective towards achieving our goal of supporting the healthy development of children. The National Academy of Sciences, the Institute of Medicine, and several U.S. federal governmental agencies including the Departments of Education and Justice, Office of Juvenile Justice and Delinquency Prevention, Centers for Substance Abuse Prevention and Mental Health Services, and the Centers for Disease Control have adopted and supported a risk and protective focused approach to promotion and prevention.

Today, many promotion and prevention interventions that reduce risk and enhance protection have demonstrated effects in interrupting the processes that produce adolescent problem behaviors (including violence, crime and substance use), as well as promoting positive development (academic success, social and emotional competence). This is a significant increase from the early 1970's when a review was conducted on behalf of the Office of Juvenile Justice and Delinquency Prevention of all existing delinquency prevention programmes with strong evaluation designs that were sufficiently rigorous and demonstrated

effectiveness. Of nine programmes with strong evaluation, only one showed positive results.

In delinquency prevention, many alternative programmes were tried in the early 70's, in which youth were removed from their urban environment and given a rural or wilderness challenge type of experience; for example, a programme called National Intervention Programme Using Minibikes (NIPUM) which consisted of motorcycle riding in the desert. What we know from the evaluation of these programmes is that involvement alone did not appear to reduce delinquency. While many of these experiences were attractive to adolescents and staff, especially inner-city adolescents, most of the early programmes made no effort to change the basic criminal environment the children were exposed to on a daily basis. Further, often these experiences had little applicability to children's lives when they returned from these outings.

Research has provided us with a set of prevention principles from which to operate when considering intervention options to optimize effectiveness. These principles include the following:

- Preventive interventions should focus both on reducing risk and enhancing protection.
- Preventive interventions should target individuals exposed to higher levels of risk.
- Address risk and protective factors at developmentally appropriate stages and whenever possible, intervene early.

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- Use data to select priority risk and protective factors in designated communities.
- Select preventive interventions that have empirically demonstrated effectiveness to target the prioritized risk and protective factors.

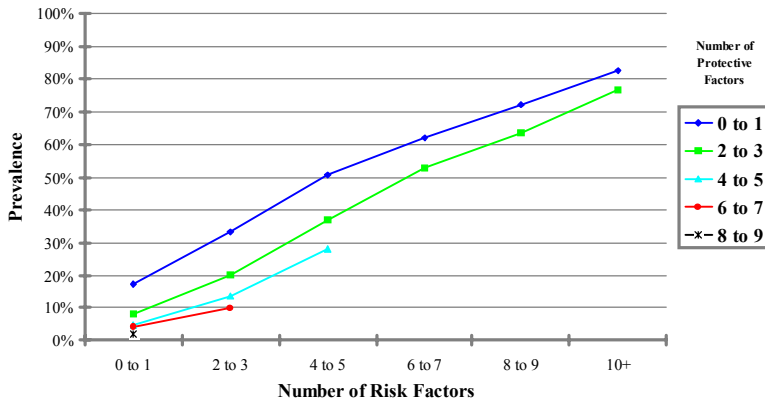
The first principle emphasizes that prevention strategies should focus on reducing risk factors and enhancing protective factors in order to maximize effectiveness. Both an individual's level of risk and level of protection make a difference. Research has shown that high levels of protection are not likely to be found in high risk environments. As such and given likely limited resources, another principle suggests it is essential to target individuals exposed to the highest levels of risk and the lowest levels of protection. It's likely that these individuals will be clustered; hence identifying community areas exposed to high levels of risk and low levels of protection becomes critical.

In order to provide maximum strength of intervention, another principle suggests that interventions should be chosen which address risk and protective factors at appropriate developmental stages. Some risk factors affect children early in life. These should be addressed early and new risk factors that are salient later in life should be addressed as children mature. The earlier we intervene the greater the likelihood that we will be able to change risk factors and patterns of behavior. If we wait until family management problems produce an abused or neglected child we may have waited too long to prevent a lot of damage. Therefore, we need to create a developmental continuum of prevention with programmes appropriately placed to reduce risks associated with each developmental period.

Let's look at data produced from our work with six states in the Diffusion Project (NIDA funding, PI: Hawkins). School children in this study represent a statewide sample and have responded to survey questions on risk and protective factors and problem behaviors. Figure 1 examines the prevalence of thirty day alcohol use by the number of risk and protective factors reported by the youth. As the number of risk factors increase, the general trend for alcohol use also increases. Additionally, as the number of protective factors increases prevalence of use lowers. Figure 2 examines the prevalence of arrests in the past year also by number of risk and protective factors. A similar pattern is portrayed with the prevalence of arrests in the past year highest for those youths with the lowest level of protection and highest number of risk factors.

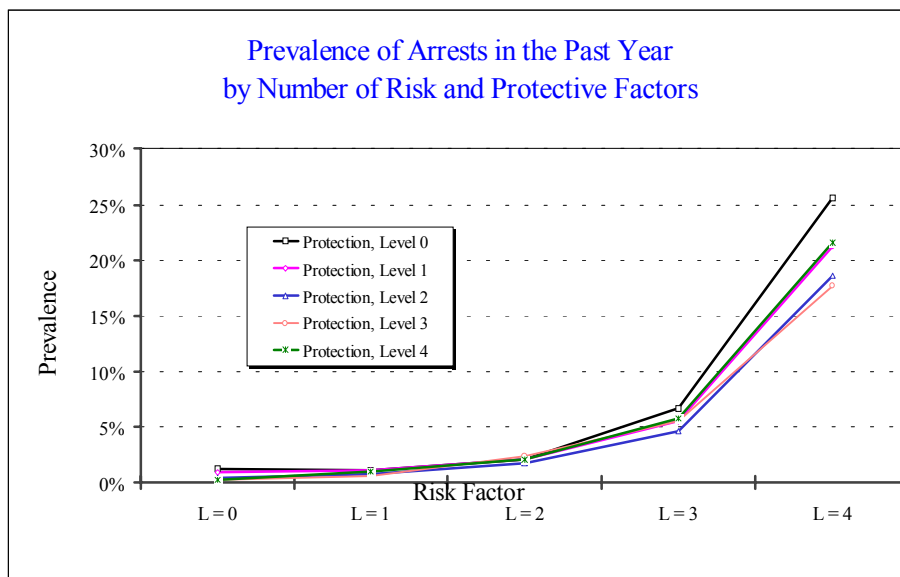
Prevalence of 30 Day Alcohol Use by Number of Risk and Protective Factors

Six State Student Survey of 6th-12th Graders, Public School Students



Relationship Between Risk and Protection

- The more risk factors the greater the prevalence of alcohol use.
- Black line (top line) is the group with no protective factors.
- Red line (bottom line) has the most, 6–7 protective factors.
- The more protective factors— the negative effects of risk go down.



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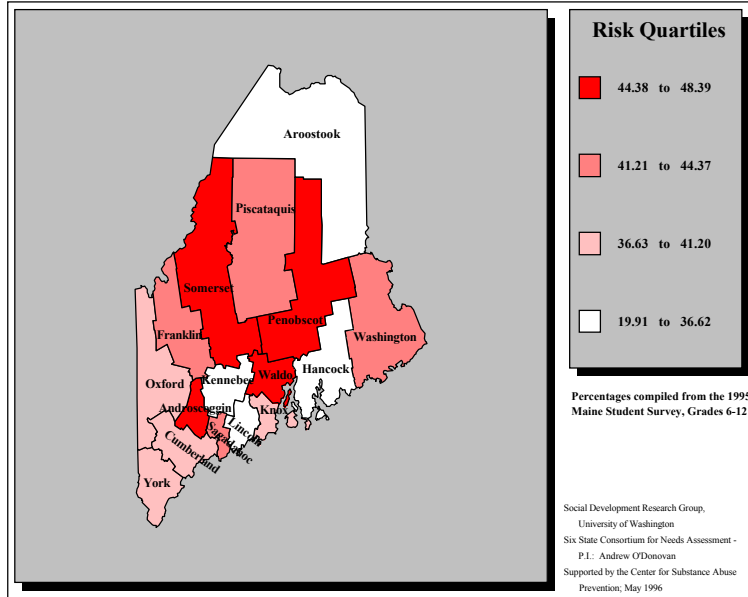
Relationship Between Risk and Protection

- Similar relationship for arrests in past year.
- The difference between 1 and 3 risk factors doesn't seem so strong.
- Having 4 or more risk factors seems to reach a critical level where protection is more important.

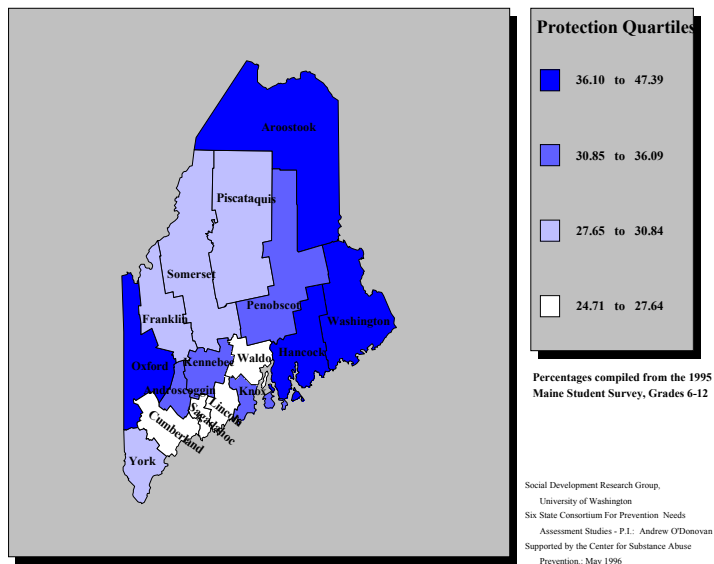
These data illustrate both the need to focus on risk and protection, as well as highlight the impact of greater exposure.

The following figures also from the Diffusion Project illustrate the principle that risk and protection can be identified in geographic clusters. Information such as this can help determine geographic priorities in terms of identifying areas of greatest need.

Maine Student Risk Factor Profile



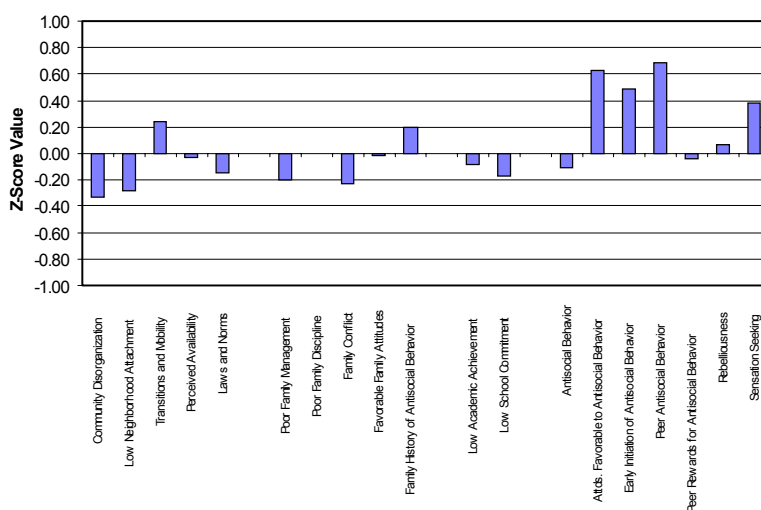
Maine Student Protective Factor Profile



While these figures illustrate areas of need, they do little to help *diagnose* the individual risk and protective factors that should be targeted. Information is needed to determine which factors are at higher levels and therefore should be the focus of our intervention efforts. Let's take for example two neighborhood risk profiles.

The first neighborhood "A" has a unique risk factor profile. For this neighborhood, peer antisocial behavior and attitudes favorable to antisocial behavior appear to be the risk factors at higher levels as reported by youth in this community. This is followed by early antisocial behavior and sensation seeking behavior.

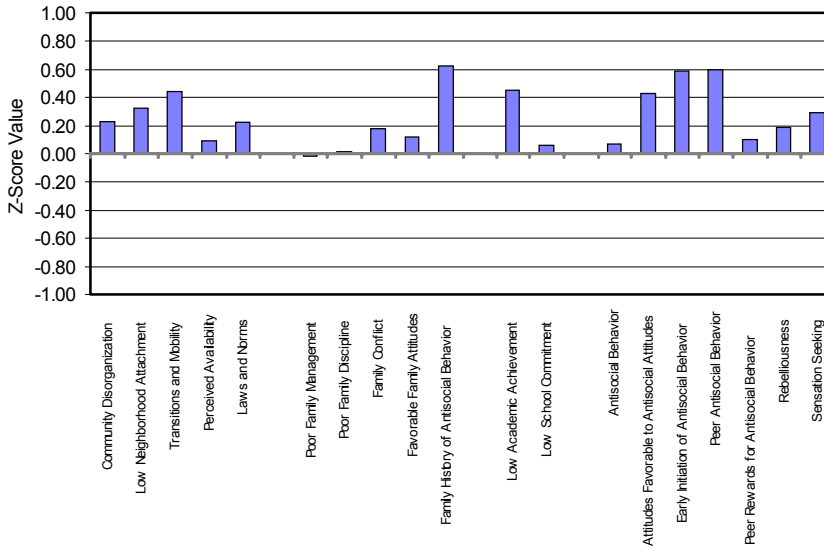
Risk Factor Profile, Neighborhood A



Priorities for Neighborhood A

- (i) Peer Antisocial Behavior
- (ii) Attitudes Favorable to Antisocial Behavior
- (iii) Early Antisocial Behavior
- (iv) Sensation Seeking Behavior

Risk Factor Profile, Neighborhood B



Priorities for Neighborhood B

- (i) Family History of Antisocial Behavior
- (ii) Early Initiation of Antisocial Behavior
- (iii) Antisocial Peers
- (iv) Low Academic Achievement
- (v) Transitions and Mobility

Contrast the risk profile of neighborhood "A" to the risk profile for neighborhood "B". For this neighborhood, a family history of antisocial behavior is reported as a higher level of risk by youth in this community. This is followed by early initiation of antisocial behavior and involvement with antisocial peers. Further, youth in Neighborhood "A" report that low academic achievement and high transitions and mobility are the next more frequent risks. On the other hand, poor family management including poor family discipline appear to be relatively low risks in this neighborhood.

Using the information from the neighborhood risk profiles, we would develop distinctly different logic models to specify both our targeted risk factors and chosen interventions. In neighborhood "A", we would prioritize peers who engage in antisocial behavior as our proximal target. Consequently, we might choose an intervention such as parent education and training to reduce negative peer associations. In contrast for neighborhood "B", family history of antisocial behavior is the priority proximal target and therefore we might choose an intervention such as prenatal and infancy home based services to address this factor. It's critical to note that the selection of priority risk factors does not mean that other factors are not important. Rather prioritization helps with targeting programming to areas most in need.

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One of the last prevention principles suggests that using programmes with demonstrated effects in well-controlled studies increases the likelihood that the programme will be positively evaluated and reduce the priority risk factors and enhance priority protective factors. It is particularly important to use evidence based programmes to increase the chances of successful risk reduction and protection enhancement.

Multiple U.S. federal agencies now require communities to utilize empirically supported programmes when spending governmental block grant funds. For example, the U.S. Department of Education requires communities to select a programme from its list of approved programmes when utilizing funds from the Safe and Drug Free Communities Act. Other organizations such as the Office of Juvenile Justice and Delinquency Prevention have published the "Blue Prints Programme" which highlights programmes that have demonstrated effectiveness. Another example is the Center for Mental Health Services that has a listing for promising violence prevention programmes. While the criteria to demonstrate effectiveness varies across agencies, these programmes are required to affect a change in either a proximal risk factor or protective factor or a change with the target problem behavior. Additionally, the results must be derived from studies that have either an experimental or quasi-experimental design.

The accountability of where public dollars are being spent has significantly increased. Encouraging communities to implement programmes that have demonstrated effectiveness increases the likelihood that money will be spent on programmes which will reach the intended goal of reducing adolescent

problem behaviors such as delinquency. Therefore more and more agencies are adopting this type of empirically supported menu-driven approach to intervention selection. The challenge to prevention scientists and community programmes is to ensure that research be conducted to provide the needed empirical support for promising programmes. More over, prevention science offers a set of principles that can assist communities in allocating resources towards maximizing it's prevention efforts.