The Cost Effectiveness of Prevention Programs

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Prevention programs appear to be the first cut when financial resources become scarce. This philosophy is contrary to the ever-growing literature that reveals the effectiveness of prevention programs and their cost-effectiveness as compared to treatment programs. Although prevention programs usually do not produce immediate outcomes, they can produce long-term results that easily outperform the temporary findings in treatment interventions. This paper will provide a literature review of evaluations of the effectiveness of prevention programs and review cost-benefit analyses conducted on prevention programs from a variety of fields.

Effectiveness of Prevention Programs

Several studies have found that prevention programs have moderate effects on children's behavior (Anderson et al., 2003; Coie et al., 1993; Gorey, 2001; Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; Kazdin, 1991; MacLeod & Nelson, 2000; Nelson, Westhues, & MacLeod, 2003; Olweus, 1994; Walker et al., 1998). For example, The Bullying Prevention Program, which is an early intervention program, included individual, family, and school participation to reduce bullying in elementary and middle school (Olweus, 1993). Schools first assess the level of bullying to raise the school's awareness and to develop their plan of involvement. Schools form a bullying prevention coordinating committee to oversee the intervention plan. Teachers hold classroom meetings to discuss bullying and enforce rules of intervention plan. If an antisocial behavior is observed, staff discussions are held with bullies, victims, and parents of involved students. Olweus (1989) conducted an evaluation of The Bullying Prevention Program using a quasi-experimental design with approximately 2500 students in the fourth, fifth, sixth, and seventh grades. The study found that after 20 months after the intervention, bullying problems were reduced by more than half for both boys and girls across all grade levels. Additionally, reductions in general antisocial behavior were higher in the second year as compared to the first, such as vandalism, fighting, drunkenness, theft and truancy.

Some prevention programs focus on changing the environment to produce a more caring atmosphere in schools rather than an authoritative one. The Child Development Project promotes cooperative learning and self-control that creates an environment where students actively participate in classroom decision-making (Battistich, Schaps, Watson, & Solomon, 1996). Interactive homework assignments with parents encourage the families to be involved with the schools and become part of the education process. Significant reductions in delinquent behaviors, including weapon carrying, skipping school, and vehicle theft, were reported in an evaluation that covered 24 schools throughout the United States (4,500 third- through sixth-grade students).

In a more comprehensive approach, Nelson et al. (2003) conducted a comprehensive meta-analysis investigating the long-term effectiveness of prevention programs for preschool children of disadvantaged families. The study found that preschool prevention programs have moderate positive effects on children's cognitive, social, emotional and parent-family relations in preschool, K-8, and high school. That is, prevention programs that were emplaced in preschool still were effective when children reached high school and beyond. Although the effects were stronger in preschool, the study also found that longer prevention interventions provided greater impact for children.

With the understanding of the effectiveness of prevention programs, several governmental officials and agencies have supported and encouraged the use of prevention programs. For example, a report by the U.S. Surgeon General recommended that children's mental health should focus on prevention rather than on treatment (U.S. Department of Health and Human Services, 1999). In a report to Congress, the Institute of Medicine (1994) stated that prevention research would play a significant role in addressing mental health disorders, even if treatment has not been successful. In addition to the effectiveness of prevention programs, government officials, agencies, and the public may not be aware of the cost-benefits that prevention programs elicit. Below is a limited review of the cost effectiveness of prevention programs.

The U.S. spends approximately $33.5 billion a year on preventable adolescent morbidities (Gans, Alexander, Chu, & Elster, 1995). The most serious, costly and widespread adolescent health problems are potentially preventable, such as unintended pregnancy, sexually transmitted infections, violence, unintended injuries, and the use of alcohol, tobacco, and other drugs (Park et al., 2001). Often, adolescent and preadolescent behaviors contribute most to the leading cause of adult mortality and morbidity. Prevention program such as health education, skills training (conflict resolution and decision-making), and public information campaigns to prevent adolescents from participating in risky behaviors can help establish, compliment, or enhance the clinical prevention services. A variety of studies have revealed the cost-effectiveness of the use of preventative services against intervention or treatment services.

The estimate above by Gans et al. (1995) includes only direct medical costs of the total impact of adolescent morbidity and is eclipsed by the Hedberg, Bracken, & Stashwick (1999) study that estimated the costs of preventable adolescent morbidities in excess of $700 billion per year. The results are higher because the authors included adolescents' risky behaviors that exponentially impact the long-term health on adults, such as adolescent smoking, drug use, violence and unprotected sex. The costs include "the value of loss of productivity and workdays due to illness, disability and premature death, legal costs associated with crime and risky behavior, the costs of treating pelvic inflammatory disease and infertility, and societal costs associated with pregnancy and childbirth, tobacco use, obesity, alcohol and drug abuse, injuries and unprotected sex" (p. 139). Even at such a high price for preventable morbidities, other preventable conditions such as depression, diabetes, asthma, dental care, and measles were not included, which would significantly raise the costs of adolescent morbidities. An estimated cost for providing comprehensive clinical preventative services to all 10-24 year olds in 1998 was $4.3 billion. The argument for funding cuts on prevention programs is not fiscally responsible when comparing $4.3 billion in prevention costs versus $700 billion in treatment cost. Although prevention will not prevent all morbidity, it is still a conservative estimate as other preventable conditions such as depression, diabetes, asthma, dental care, and measles were not included in the estimate of treatment, raising the overall costs.

A cost-effectiveness analysis conducted in family planning clinics suggests that age-based screening for chlamydia can prevent costly episodes of pelvic inflammatory disease and result in significant cost savings (Howell, Quinn, & Gaydos, 1998). School-based health centers documented savings of $1.38 to $2.00 for every dollar spent based on estimated reductions of emergency rooms use, lower pregnancies, early prenatal care, and early identification of chlamydia (Brindis, Morales, McCarter, Dorbin, & Wolfe, 1993). Barnett (1996) conducted a cost-effectiveness analysis of prevention programs investigating 27 year-old participants that had participated in preschool prevention programs. The Barnett found that the prevention programs could save over $95,000 per participant, with a return on investment of more than an $8 for every dollar invested. In another study, Cohen (1998) estimated the savings of diverting one child from a life of crime are as high as $1.7 to $2.3 million. Nix (2003) argued that implementation of preschool prevention programs should be considered even if success was limited to one child out of 100.

Conclusion

Greenberg, Domitrovich, and Bumbarger (2001) reviewed several primary prevention programs that have used quasi-experimental or randomized evaluation methods and found that these prevention programs had a moderate impact on reducing symptoms related to mental illness. The authors report that there is still a large need for future research to reveal the most effective and efficient factors related to mental health. The authors made the following recommendations (p. 37):

1. There needs to be more replication of program effects by independent investigators.
2. There needs to be long-term follow-ups to examine stability of program effects.
3. There needs to be an increase in comprehensive follow-up data to chart the developmental processes of program participants in the years after receiving interventions.
4. Greater attention to preventive interventions focused on externalizing disorders (e.g., disruptive behavior disorders), therefore, there needs to be an increase focus on internalizing disorders (e.g., anxiety or depression).
5. Intervention projects should examine effects that interventions might have on individuals with co-morbidity of internalizing and externalizing problems.
6. Outcome measures should include assessment of both externalizing and internalizing symptoms.

7. Focus on the factors in the child (e.g., gender, ethnicity) or environment (e.g., quality of home environment) that might moderate the impact of intervention.
8. There is a need for greater attention to both the measurement of dosage as well as the quality and fidelity of the intervention delivery.
9. Measures of multiple dimensions of outcome are necessary to address multiple problem behaviors (e.g., substance abuse and psychological symptoms).

Finally, Greenberg et al. (2001) report that more studies need to be conducted to evaluate the actual implementation process of prevention programs. Many children and adolescents that have a high probability of suffering from mental illness do not receive therapeutic services until they enter an intervention or treatment system, such a special education or the juvenile justice system.

Social workers are an essential element in keeping prevention programs on the political, research, and clinical agenda. The Maternal and Child Health Bureau from the U.S. Department of Health and Human Services recommended that social workers should be used to help expand the deliver system of preventative strategies, such as peer counseling, health education, and risk assessment (Parks et al., 2001). Social workers participating in political advocacy for prevention programs should have readily available results from rigorous research studies from a variety of fields, including both effectiveness and cost-benefits of prevention programs. During times of decreased revenues, federal, state, and local officials should not immediately begin cutting prevention programs with the belief that these programs are the most expendable. To the contrary, after reviewing the literature, the benefits of prevention over treatment should be convincing evidence of continued support of prevention programs, especially during a period of scarce resources.

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