Effectiveness of school-based program to preventing mental disorders in school age children: review article

Seyede Zahra Ghaemi (MD)[1], Ali Khakshour (MD)[2*], Zohreh Abasi (MD)[1], Nayereh Azam Hajikhani Golchin (MD)[1]

[1]Department of Midwifery and Reproductive Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[2]Department of Pediatrics, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.

ARTICLE INFO

ABSTRACT

Mental health disorders are prevalent in children in all societies. The onset of most mental disorders is in youth (12–24 years of age), but most of the time they are first detected later in life. Poor mental health is strongly related to other health and development concerns so it is common to show high grade of stress, substance use, violence, and depression. The effectiveness of some interventions has been strongly established, although more researches are needed to improve the range of affordable and feasible interventions. The shortage of educational and fiscal policies and the fairly low attention to this subject is the main challenge addressing mental-health needs. Therefore, universal or early intervention programs are needed to develop protective factors by increasing competence or skills, to reduce existing negative behaviors. Moreover child discipline problems can be reduced by school multicomponent intervention strategies and as a result promotion in student's achievement becomes evident.

Introduction

Mental disorders in children have a high prevalence(1). The reported rates of ranged from 8% (in the Netherlands) to 57% (for young people receiving services in five sectors of care in San Diego, California, USA). Reports in the Australian National Survey of Mental Health and Well Being indicate that at least 14% of adolescents younger than 18 years were diagnosed with a mental or substance use disorder in 12 months and this figure went up to 27% in the 18–24 year age-group (2). It is estimated that about one in five young people suffers from an emotional or behavioral problem in any given year. Five of the ten leading causes of years living with disability in people aged 15–44 years are neuropsychiatric disorders such as unipolar depressive disorders, alcohol use disorders, self-inflicted injuries, schizophrenia, and bipolar affective disorder (3).

In many cases mental health problems fail to be diagnosed or are misdiagnosed, so various types of care for children have been provided by many funded and uncoordinated agencies in the health, education, social services, and recreation and corrections sectors but they still lack the appropriate care that would be achieved by a more comprehensive view of their problems. Undiagnosed and untreated mental health problems can be costly both for themselves and their families and also for the society (such as, the costs of lost potential, school dropout rates, unemployment, and crime)(1).

*Corresponding author: Ali Khakshour.
Department of Pediatrics, School of Medicine, Mashhad university of Medical Sciences, Mashhad, Iran.
E-mail: khakshoura@mums.ac.ir
Tel: 09155199282

Evidence is available that an increasing rate of young people meets the criteria for conducting disorders. This evidence comes from two studied populations; each of them included young people aged 15–16 years(4,5). Apart from disability, mental disorders might also increase the mortality rate in young people. In many societies youth is a period of increased risk of suicide (6). The failure to identify and treat depression can result in suicide which is a leading cause of death among young people in countries such as China (7) and India (8). During10 years from 1992 to 2001 common causes of death in a rural community of 108,000 people in South India were demonstrated in an Indian study. The researchers have reported that suicide accounted for a quarter of deaths in boys and between half and three-quarters of deaths in girls aged 10–19 years (8). For this problem some substantial progress has been made in developing effective interventions. Yet, most mental-health-service needs are not dealt with properly, even in wealthier societies, and the rate of unmet need is nearly 100% in many developing countries. Furthermore, lack of interventions to prevent mental disorders and promote mental health is felt (9).

There exists a huge gap between the mental health needs of children and adolescents and as a result serious differences in resources and effective programs available to meet these needs (10). Prevention (actually early intervention–treatment and developing a full range of care is the primary goal of the collaboration between the education and mental health systems. While success depends on effective collaboration at many levels but this joint effort lessens the burdens on and liabilities of education systems. However sustained collaboration in many levels is needed (11).

A youth-focused model for development of services and integration of mental health with other youth health and welfare concerns has been proposed; so this paper examine the effectiveness and efficiency of mental health services for school-aged children by providing an overview, drawn from literature reviews , and addresses the policy implications of its findings.

Risk Factors

There are a number of known risk factors such as inherited traits and predispositions physical health, cultural norms, parental education, parenting style, income and family stability for developing emotional disorders.

However poverty is known as an indirect risk factor but evidences have proved that growing up in poor household increases the risk of exposure to adversities such as scarcity of food, poor nutri-

tion, violence, inadequate education, and living in a neighborhood characterized by absence of social networks increase the risk of mental disorder (12-14).

Mental disorder contributes to educational under achievement, loss of employment, and increased health-care costs. Some researches on children with emotional disturbance demonstrated that violence and child abuse are major risk factors for developing mental disorder and young people living in families with parental mental or substance abuse, discord between parents, marital violence, and breakdown, are at greater risk of mental disorders (15).

Many with disorders had experienced physical or sexual violence, while most sexual violence takes place in the context of trusting relationships (for example, peers or relatives), generally most violence takes place in the school or community; in both instances, older peers are the most frequent perpetrators (16). In married young people, young women are most of the time harassed by the husbands or in-laws (17).

Among other pressures limited employment opportunities for out-of-school young people is a main risk factor for suicide and poor mental health (6). Indigenous people of many countries, migrants from rural to urban areas, internally displaced people and refugees who may be historically disadvantaged are at the risk of suicide and poor mental health(18). Young people in these groups might have in their lives and the other is low self-esteem and associations with deviant peers (19).

The prevalence of mental disorder varies greatly according to several cultural factors (20). Viewing young people as a major market and emphasis on certain body shapes, encouraged by the fashion industry is probably a factor in explaining the anorexia fever in developed countries. There is considerable evidence which shows that the globalization of the media is connected with an increase in eating disorders in societies (21-23). Although the final pathway for mental disorders might involve a neural basis, discoveries in genetics and neuroscience have provided strong evidences for genetic and biological contribution in mental illnesses-particularly for depression, psychoses, and severe behavior disorders (24). A history of difficult and disruptive behaviors from childhood can be expected to lead to neurocognitive impairments in adolescence. Developmental disorders such as learning disabilities and neurological disorders, such as epilepsy are considered as potential factors in increasing mental illnesses (25). Gene-environment interactions may explain the increased risk of behavior disorders in boys. Protective factors are essential to understand how the impact of risk factors can be modified or

even eliminated. Social support might be an important psychosocial safeguard in facing the risk factors. Enabling parents to provide adequate psychosocial stimulation during early childhood is perhaps the most important factor for building resilience in youth (26-28).

Primary prevention mental health programs for children and adolescents

However prevention is a priority and the ultimate goal, intervention has an immediate positive impact.Within the spectrum of mental health, preventive interventions will enhance protective factors, which, in general, are positive behaviors or features of the environment that lessen the likelihood of negative outcomes or increase the possibility of positive outcomes (29,30). Some primary prevention programs emphasize more on mental health promotion or enhancement. The main focus of preventive programs is to develop important competencies, that is, to promote wellness (31). In summary, over the past several years promotion of mental health range from a focus on preventing specific problems to prevention of emotional and behavioral dysfunction in general. Therefore, as currently practiced, primary prevention in mental health may be defined as an intervention designed to lessen the future incidence of problems in currently normal populations as well as efforts aimed at the promotion of mental health functioning (22). Two major aspects are the level of the intervention and the way populations are selected for intervention. In terms of the level of intervention, programs can be categorized as either individual or ecological (person-centered or environment-centered respectively). The individual interventions offer services directly to the target population without attempting any major environmental change and the ecological interventions try to change individuals indirectly by modifying the environment. The emphasis of both approaches is on prevention of specific problems or health promotion. Person-centered programs work directly with children and often use or adapt change techniques drawn from the clinical and counseling literature (32).

Of all sectors, schools play the largest role in providing mental health services to children. While schools are by no means serving all children with mental disorders but so little attention has been given to the effectiveness of school programs. Until recently, it would have been impossible to describe in any detail school-based mental health services, because basic instruments were lacking (33).

Indeed, for the large number of the children, the school system provides the only source of mental health service (34). The conceptual model of community care includes school-based services which typically preventive services have not been included in the concept of the system of care and there have been suggestions for their inclusion (35). In this system of care many strategies have been designed to improve the services and outcomes for seriously emotionally disturbed children and adolescents (36,37).

Services provided to the students should be child centered, family focused, community based, and culturally competent based on the notion of a system of care. Furthermore, in the system of care framework, children should receive a range of free services (e.g., outpatient treatment, home-based services, day treatment, case management, crisis services, therapeutic foster care, residential treatment centers, health services, school services, social services) based on their individual physical, emotional, social, and educational needs (33). The system of care works as the foundation for effective comprehensive mental health services within communities. Schools and the health care sector are pivotal to these systems since schools can play each of these duties. Definition of school-based mental health services covers any program, intervention, or strategy applied in a school setting that was specifically designed to influence students' emotional, behavioral, or social functioning (38).

In this system even healthy child development through risk factor reduction or positive youth development is supported by recreational, educational, or social programs (39).

In this system they believe that universal or early intervention programs may generate protective factors (generally by increasing competence or skills) and these programs are more effective than those programs that try to reduce existing negative behaviors (40). On the other hand, program effectiveness can vary by age, gender, and ethnicity of children (39).

Preschool-age children or younger children benefit more from the programs than older children. However one can not deny the efficacy of the programs for older children. Programs which target a specific problem or problems, which are sensitive to cultural or gender-based differences, are more effective than broad unfocussed interventions.

Programming that has multiple, integrated elements involving more than the single domain of family, school, or community, is more likely to bring positive results than single focus, single domain interventions (41).

In this system it is proven that interventions that both decrease problems and increase competencies not only are more effective but also can lessen the probability of future dysfunction in

comparison with the programs that only reduce problems or symptoms. In summary, over the past several years promotion of mental health range from a focus on preventing specific problems to include the prevention of emotional and behavioral dysfunction in general (38). Since more attention has been given to pre-school research (Zoritch, Roberts, & Oakley, 1998), we focussed primarily on reviews of universal and early intervention services for older children. Programs providing clinical services were excluded.

This study is a narrative literature review. A Comprehensive computerized search of the scientific literature was done to identify studies of school-based mental health services for children. Electronic databases (Proqust, Willey, google scholar, SID, Scopus, Web of Science, Science Direct, Medline), were searched to obtain articles published between 1985 and 2011.

Schools, children, mental health, services, prevention, outcomes, effectiveness and specific syndromes were terms used as key words for identifying the original pool of studies. Here a number of patterns and characteristics are presented.

Mental disorders

Most mental disorders happen in youth and are often detected for the first time in later life. There exists a strong relation between poor mental health and many other health development in young people, notably with educational achievements, substance use and abuse, violence, and reproductive and sexual health.

Intervention strategies for health promotion in schools includes making changes in school environment, community and family involvement, healthy eating and fitness, injury and abuse prevention(42), cognitive and emotional behavior control(43), violence prevention, curriculum-based teaching, conflict resolution, anger management, empathy skills , role playing (40), increase self-esteem, (44) coping with negative feelings, social skills, positive peer relationships(45), decision making (refusal and resistance)(46).

Violence

In a typical national study in 2003, more than 1.56 million victimization events by perpetrators have been reported by adults estimated to be aged between 12 and 20 years old; demonstrating that violent crimes were committed at a rate of approximately 4.2 for every 100 youths in that age group. Youth perpetrators commit violent acts at a higher rate than any other age group(47,48).

The school health policies and programs study (SHPPS) states that most schools in the US report having implemented programs to educate their students about violence and nonviolent behaviors.

Funding or staff development for violence prevention should be available in schools.

Anger management, bullying, prosocial behavior (such as cooperation, praise, or support of others), communication skills, decision-making skills, goal-setting skills, and other techniques for avoiding conflict and violence should be taught in schools (elementary, middle, junior, and senior high)(49). Supportive early childhood intervention for later antisocial behaviors should be performed for children at risk(50).

Depression

Serious deficits in emotional, behavioral, social, and academic functioning are connected with depression, and the risk for depressive episodes in adulthood is increased in depressed children (51). "Early clinical intervention is critical to alleviate distress and to prevent further functional impairment, relapse, and potentially, suicide" based on what Hoagwood, and Mrazek (1999) concluded (35).

Success rate in cognitive–behavioral programs aimed to prevent the development of depressive symptoms and suicidal behaviors among youth were different(52,53). A 12-session education program of coping with distress and self-harm has taught adolescents about the nature and universality of distress, responses to distress, the role of cognitions and emotions, and strategies for reframing distress.

Coping skills, such as positive self-talk, empathy, help seeking, and refuting irrational beliefs have also been taught. In addition, students were taught to identify peer distress and warning signs of suicide. Skills were applied through behavioral homework assignments and inclass feedback.

Exercises such as doing role-play, learning to increase self-esteem, and decrease anxiety and irrational beliefs, learning the skill of conflict resolution, social skills self-concept reductions in children's negative behavior, self-modeling cognitive and rational-emotional therapy and cognitive behavior have been more effective (54).

Stress

Coping with an increasingly complex set of environmental and social issues place children and adolescents at risk for the development of emotional, behavioral, and health difficulties (55).

Exercises in this category include: the coping with kids program (56) , a cognitive–behavioral stress control and relaxation training program. Also a program consisted of nine 45-minute sessions in which students were taught methods for coping with stress, anger management, friendship development, and problem solving was performed (38).

Substance Use

Abuse of alcohol and other substances among youth continues to be one of the most serious public health problem associated with a range of immediate and long-term health and social consequences(57). The main intervention components in this class include cognitive–behavioral techniques and social skills trainings (58).

Increased information and social support, skills-building in coping and social competence, problem/emotion focused, social/emotional function, effective programs can build a safety-valve for safe expression of feelings and emotional support(59); knowledge and attitudes concerning drug use, normative expectations, and skills for resisting drug use influences from peers and the media is of utmost importance. Many psychosocial drug abuse prevention programs that focus on the teaching of social resistance skills are the same but focusing on the short-term consequences of drug use, knowledge about the actual levels of drug use among adolescents and adults in order to correct normative expectations about drug use, information about the declining social acceptability of cigarette smoking and other drug use, information and class exercises demonstrating the immediate physiological effects of cigarette smoking, and material concerning peer and media pressures to smoke, drink, are among the most popular strategies used to intervene substance abuse(58).

School-based services and psychosocial interventions by teachers and counselors may prevent depression, aggressive behaviors, and substance abuse among students, yet risk breaches of confidentiality and labeling of participants are undeniable. On the other hand programs operated out of community centers may provide confidentiality and serve a larger catchment area, but reach a smaller proportion of population than school-based programming.

Furthermore the inclusion of families in community-centre-based interventions when children are showing symptoms is an important factor for accomplishment. A comprehensive solution would include services in both venues(60).

Conclusion

For a number of reasons the amount of research on the prevention of emotional, mental, or behavioral disorders and promotion of mental health in children and youth has risen dramatically during the past decade.

Prevention programs can promote mental health and reduce problem behaviors effectively, and also can enhance youth competence based on the obtained results of different studies (61).

Successful implementation of evidence-based practices needs more examination under naturally occurring conditions. Therefore to achieve such success, prevention-oriented, evidence-based researches are growing quickly(62).

Schools as not the only (and in some cases are not even the tertiary) social agency responsible for addressing these significant issues but as the largest source of mental health services for children are not negligible to fulfill this format subjects(63).

Of all sectors, schools have become one of the most prominent settings in which to conduct preventive and wellness-promotion interventions. In addition to their central role in fostering academic development, schools are a prominent source of care and responsible for social-emotional development of students(61).

So, students by using school programs can take advantage of healthy strategies and coping mechanisms (46). Being risk free and being prepared are two distinct subjects(64). Since children usually have a collection of emotional/behavioral problems, interrelated with one another and with external factors, addressing the whole child rather than focusing only on a single problem behavior is more effective.

Both risk and protective factors interact to help determine child development. yet protective factors lessen the effect of risk factors as long as some degree of balance is maintained(46).

However, between the implementation of well-designed interventions in controlled prevention trials and the typical implementation of prevention programs in schools and communities, there is a huge gap.

Even in the implementation of empirically supported programs by schools, achieving the same levels of technical assistance, support, resources, and prevention expertise available in well-funded, controlled prevention research trials is difficult. A more systematic process is warranted to guarantee program effectiveness in a variety of school settings under naturally occurring conditions (65).

There is a strategy to smooth effective program delivery guided by both the conceptual model and the contextual factors that can influence implementation in school-based programs Pre-adoption phase. Administrators, teachers, parents, and students should be involved early on, when selecting a program and planning its implementation. Selected programs should be assessed for their fit to the needs of the school and its students, the available resources, and the goals, philosophy, and organizational capacity of the school. Appointing a project coordinator who will ensure the successful implementation and evaluation of the program in the school setting and allocating sufficient resources to sustain the program with fidelity are

of utmost importance. Implementers must receive proper education prior to implementation so that they become knowledgeable and confident in their skills. Finally, program implementation is largely enhanced by a supportive, problem-solving atmosphere that permits the discussion and facilitates the resolution of difficulties.

Delivery phase. Once program implementation has started, the quality of program must be monitored carefully and constantly. This monitoring requires assessing the implementers' skills and satisfaction and providing them with emotional and practical support. By the help of a comprehensive, theoretically based program model, the intervention should be evaluated. Once the program is running effectively, decisions should be taken by the use of information gathered in the early implementation phases about the program's ongoing viability in order to identify and implement ways to improve its overall quality. Moreover the probability of successful implementation is ensured by maintaining a positive school atmosphere in which open communication, free exchange of ideas, and professional growth are endorsed.

Post-delivery phase. If the program is successful, steps should be taken to integrate the program more broadly into the existing structure of the school. Having a realistic timeline for long-term implementation and for long-term outcomes is essential. To inform the community about the program and its findings, a broad range of dissemination strategies should be examined. Finally, providing feedback to program developers regarding the intervention, the implementation system, and the factors that affected the implementation quality of the project is very important (66-68).

To sum up, educational and fiscal policies that limit the use of schools for non-curricular activities are important challenges to such a solution. It is believed a drastic organizational change in education as the location of professional mental health services inside schools is needed based on our data.

Acknowledgement

Conflict of Interest

The authors declare no conflict of interest.

References

1. Offord DR, Boyle MH, Racine YA, et al. Outcome, prognosis, and risk in a longitudinal follow-up study. J Am Acad Child Adolesc Psychiatry. 1992;31:916-923.
2. Sawyer A, Baghurst C, Graetz K, et al. Mental health of young people in Australia. 2006.
3. Group PH. Victorian burden of disease study: mortality and morbidity in 2001. Melbourne: Victorian Government Department of Human Services; 2005.
4. Collishaw S, Maughan B, Goodman R, et al. Time trends in adolescent mental health. J Child Psychol Psychiatry. 2004;45:1350-1362.
5. Costello EJ, Foley DL, Angold A. 10-year research review: the epidemiology of child and adolescent psychiatric disorders: II. Developmental epidemiology. J Am Acad Child Adolesc Psychiatry. 2006;45:8-25.
6. Vijayakumar L, John S, Pirkis J, et al. Suicide in developing countries (2): risk factors. Crisis. J Crisis Intervention and Suicide Prevention. 2005;26:112.
7. Phillips MR, Li X, Zhang Y, et al. Suicide rates in China. Lancet. 2002;359:2274-2275.
8. Aaron R, Joseph A, Abraham S, et al. Suicides in young people in rural southern India. Lancet. 2004;363:1117-1118.
9. Verhulst FC, Achenbach TM, Van der Ende J, et al. Comparisons of problems reported by youths from seven countries. Am J Psychiatry. 2003;160:1479-1485.
10. Waxman RP, Weist MD, Benson DM. Toward collaboration in the growing education–mental health interface. Clin Psychol Rev. 1999;19:239-253.
11. Flaherty LT, Garrison EG, Waxman R, et al. Optimizing the roles of school mental health professionals. J Sch Health. 1998;68:420-424.
12. Leinonen JA, Solantaus TS, Punamäki RL. Parental mental health and children's adjustment: the quality of marital interaction and parenting as mediating factors. J Child Psychol Psychiatry. 2003;44:227-241.
13. Lapalme M, Hodgins S, LaRoche C. Children of parents with bipolar disorder: a metaanalysis of risk for mental disorders. The Canadian Journal of Psychiatry/La Revue canadienne de psychiatrie. 1997.
14. Obot IS, Anthony JC. Mental health problems in adolescent children of alcohol dependent parents: Epidemiologic research with a nationally representative sample. J Child Adolescent Subst Abuse. 2004;13:83-96.
15. Sansone RA, Songer DA, Miller KA. Childhood abuse, mental healthcare utilization, self-harm behavior, and multiple psychiatric diagnoses among inpatients with and without a borderline diagnosis. Compr Psychiatry. 2005;46:117-120.
16. Patel V, Andrew G. Gender, sexual abuse and risk behaviours in adolescents: a cross-sectional survey in schools in Goa. Natl Med J India. 2001;14:263-266.
17. Patel V, Kirkwood BR, Pednekar S, et al. Gender disadvantage and reproductive health risk factors for common mental disorders in women: a community survey in India. Arch Gen Psychiatry. 2006;63:404-413.
18. Barwick C, Morton L. Refugee children and their families: Exploring mental health risks and protective factors. In: Azima F, Grizenko N, editors. Immigrant and refugee children and their families: clinical, research, and training issues. International Universities Press 2002. p. 37-63.
19. Richter LM. Studying adolescence. Science. 2006;312:1902-1905.
20. Green H, McGinnity Á, Meltzer H, et al. Mental health of children and young people in Great Britain, 2004: Palgrave Macmillan Basingstoke; 2005.
21. Becker AE, Burwell RA, Herzog DB, et al. Eating behaviours and attitudes following prolonged exposure to television among ethnic Fijian adolescent girls. British J Psychiatry. 2002;180:509-514.
22. Blakemore SJ, Choudhury S. Development of the adolescent brain: implications for executive function and social cognition. J Child Psychol Psychiatry. 2006;47:296-312.
23. Schweinsburg AD, Nagel BJ, Tapert SF. fMRI reveals alteration of spatial working memory networks across adolescence. J Int Neuropsychol Soc. 2005;11:631-644.
24. Raine A, Moffitt TE, Caspi A, et al. Neurocognitive impairments in boys on the life-course persistent antisocial path. J Abnorm Psychol. 2005;114:38.
25. Moffitt TE, Caspi A, Rutter M, et al. Sex Differences in Antisocial Behaviour: Cambridge University Press; 2005.
26. Birmaher B, Ryan ND, Williamson DE, et al. Childhood and adolescent depression: a review of the past 10 years. Part I. Journal of the American Academy of Child & Adolescent Psychiatry. 1996;35:1427-1439.

27. Greening L, Stoppelbein L. Religiosity, attributional style, and social support as psychosocial buffers for African American and white adolescents' perceived risk for suicide. Suicide Life Threat Behav. 2002;32:404-417.

28. Joiner TE. The trajectory of suicidal behavior over time. Suicide Life Threat Behav. 2002;32:33-41.

29. Buckner JC. Primary Prevention in Mental Health: An Annotated Bibliography. 1985.

30. Coie JD, Watt NF, West SG, et al. The science of prevention: a conceptual framework and some directions for a national research program. Am Psychol. 1993;48:1013.

31. Cowen EL. The enhancement of psychological wellness: Challenges and opportunities. Am J Community Psychol. 1994;22:149-179.

32. Durlak JA, Wells AM. Primary prevention mental health programs for children and adolescents: A meta-analytic review. Am J Community Psychol. 1997;25:115-152.

33. Friedman RM. The practice of psychology with children, adolescents and their families: A look to the future. In: Hughes J, Conoley J, Greco AL, editors. handbook of psychological interventions for children and adolescents 1: Oxford Oxford Press; 1999. p. 34.

34. Burns BJ, Costello EJ, Angold A, et al. Children's mental health service use across service sectors. Health Aff (Millwood). 1995;14:147-159.

35. Hoagwood K, Koretz D. Embedding prevention services within systems of care: Strengthening the nexus for children. Appl Prev Psychol. 1996;5:225-234.

36. Stroul BA, Friedman RM. A System of Care for Severely Emotionally Disturbed Children & Youth. 1986.

37. Stroul BA. Children's mental health: Creating systems of care in a changing society: Paul H Brookes Publishing Company; 1996.

38. Rones M, Hoagwood K. School-based mental health services: A research review. Clin Child Fam Psychol Rev. 2000;3:223-241.

39. Zoritch B, Roberts I, Oakley A. The health and welfare effects of day-care: a systematic review of randomised controlled trials. Soc Sci Med. 1998;47:317-327.

40. Greenberg MT, Domitrovich C, Bumbarger B. Preventing mental disorders in school-age children: A review of the effectiveness of prevention programs. Prevention Research Center for the Promotion of Human Development, College of Health and Human Development, Pennsylvania State University. 1999.

41. Browne G, Gafni A, Roberts J, et al. Effective/efficient mental health programs for school-age children: a synthesis of reviews. Soc Sci Med. 2004;58:1367-1384.

42. Lister-Sharp D, Chapman S, Stewart-Brown S, et al. Health promoting schools and health promotion in schools: two systematic reviews. Health technology assessment (Winchester, England). 1998;3:1-207.

43. Bennett KJ, Offord DR. Schools, mental health and life quality. In: Health NFo, editor. Determinants of health1998. p. 47-86.

44. Bauman LJ, Drotar D, Leventhal JM, et al. A review of psychosocial interventions for children with chronic health conditions. Pediatrics. 1997;100:244-251.

45. Hodgson R, Abbasi T, Clarkson J. Effective mental health promotion: a literature review. Health Educ J. 1996;55:55-74.

46. Contento I, Balch GI, Bronner YL, et al. The effectiveness of nutrition education and implications for nutrition education policy, programs, and research: a review of research. J Nutr Educ. 1995.

47. Pastore AL, Maguire K, Flexon JL. Sourcebook of criminal justice statistics, 2003: US Department of Justice, Office of Justice Programs; 2005.

48. Bureau USC. Monthly postcensal resident population,by single year of age,sex,race,and Hispanic origin. Washington DC: Census Bureau; 2006.

49. www.cdc.gov/healthyouth/shpps/factsheets/pdf/violence.pdf CodcapShpapsAa.

50. Greenwood PW, Model K, Rydell CP, et al. Diverting children from a life of crime: Measuring costs and benefits: Rand Corporation; 1998.

51. Lewinsohn PM, Clarke GN, Hops H, et al. A course in coping: A cognitive–behavioral approach to the treatment of adolescent depression. In: Hibbs ED, Jensen PS, editors. Psychosocial treatments for child and adolescent disorders: Empirically-based strategies for clinical practice. Washington American Psychological Association; 1996. p. 109-135.

52. Clarke GN, Hawkins W, Murphy M, et al. School-based primary Prevention of depressive symptomatology in adolescents findings from two studies. J Adolesc Res. 1993;8:183-204.

53. Klingman A, Hochdorf Z. Coping with distress and self harm: the impact of a primary prevention program among adolescents. J Adolesc. 1993;16:121-140.

54. Marcotte D. Treating depression in adolescence: A review of the effectiveness of cognitive-behavioral treatments. J Youth Adolesc. 1997;26:273-283.

55. Nastasi BK. A model for mental health programming in schools and communities: Introduction to the mini-series. School Psych Rev. 1998.

56. Henderson PA, Kelbey TJ, Engebretson KM. Effects of a stress-control program on children's locus of control, self-concept, and coping behavior. The School Counselor. 1992:125-130.

57. Faggiano F, Vigna-Taglianti F, Burkhart G, et al. The effectiveness of a school-based substance abuse prevention program: 18-month follow-up of the EU-Dap cluster randomized controlled trial. Drug Alcohol Depend. 2010;108:56-64.

58. Botvin GJ, Baker E, Dusenbury L, et al. Long-term follow-up results of a randomized drug abuse prevention trial in a white middle-class population. JAMA. 1995;273:1106-1112.

59. Emshoff JG, Price AW. Prevention and intervention strategies with children of alcoholics. Pediatrics. 1999;103:1112-1121.

60. Reynolds AJ, Temple JA, White BA, et al. Age 26 cost–benefit analysis of the child-parent center early education program. Child Dev. 2011;82:379-404.

61. Elias MJ, Zins JE, Graczyk PA, et al. Implementation, sustainability, and scaling up of social-emotional and academic innovations in public schools. School Psych Rev. 2003;32:303-319.

62. Gersten R, Baker S, Lloyd JW. Designing High-Quality Research in Special Education Group Experimental Design. J Special Education. 2000;34:2-18.

63. Taylor HSAL. Mental health in schools: Moving forward. School Psych Rev. 1998;27:175-190.

64. Greenberg MT, Domitrovich C, Bumbarger B. The prevention of mental disorders in school-aged children: Current state of the field. Prevention & treatment. 2001;4:1a.

65. Kutash K, Duchnowski AJ, Green AL. School-based mental health programs for students who have emotional disturbances: Academic and social-emotional outcomes. School Ment Health. 2011;3:191-208.

66. Forman SG, Olin SS, Hoagwood KE, et al. Evidence-based interventions in schools: Developers' views of implementation barriers and facilitators. School Ment Health. 2009;1:26-36.

67. Aarons GA, Wells RS, Zagursky K, et al. Implementing evidence-based practice in community mental health agencies: A multiple stakeholder analysis. Am J Public Health. 2009;99:2087-2095.

68. Domitrovich CE, Bradshaw CP, Poduska JM, et al. Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. Adv Sch Ment Health Promot. 2008;1:6-28.