The Case for School-Based Depression Screening: Evidence From Established Programs

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Background

Adolescent depression constitutes a major public health problem. By age 18, an estimated 20% of the U.S. population experiences an episode of major depression, and as many as 65% of adolescents report depressive symptoms (Kessler et al., 1994; Lewinsohn et al., 1993). For adolescents, depressive episodes typically last seven to nine months, and five-year recurrence rates approach 70% (Lewinsohn et al., 1995; McCauley et al., 1993; Rao et al., 1995). Depression is associated with adverse outcomes, including poor school performance, substance abuse problems, and suicide (Armstrong & Costello, 1999; Fergusson & Woodward, 2002; Glied & Pine, 2002; Rao et al., 1995; Rohde et al., 1996; Vander Stoep et al., 2000). The World Health Organization (1996, 2004) has cited depression as the leading cause of disability worldwide and as the fourth leading contributor to the global burden of disease.

Intervention with adolescents experiencing subclinical signs of depression can significantly reduce depressive symptoms and the incidence of depressive disorders (Clarke et al., 2001; Garber et al., 2009; Gillham et al., 1995; Horowitz & Garber, 2006; Jaycox et al., 1994). For adolescents already experiencing depression, early identification and appropriate intervention can result in relief from depressive symptoms, a reduced number of recurrences, and improvement in academic performance (Allgood-Merten et al., 1990; Brent et al., 1997; Garber, 2006; Garber & McCauley, 2002; Kahn et al., 1990; Kazdin & Weisz, 1998; Lewinsohn & Clarke, 1999; Shochet et al., 2001). Longitudinal research indicates that obtaining treatment for adolescent depression leads to a significant reduction in the risk of depression during adulthood (Feehan et al., 1993; Harrington et al., 1996). This reduced risk for long-term adverse outcomes underscores the necessity for early identification. However, depression is more challenging to detect than externalizing conditions such as attention deficit hyperactivity disorder, oppositional defiant disorder, or conduct disorder.

This paper reviews the evidence base that supports early detection of depression through school-based screening. It presents an overview of the rationale for school-based depression screening as well as an evaluation of highlights from established secondary school programs that have been reviewed in the mental health, public health, and education literatures. The main section of the paper describes the University of Washington's Developmental Pathways Screening Program and the growing evidence that supports its development and implementation.

Addressing Depression From a Public Health Perspective

Studies suggest that only one-fourth to one-third of depressed adolescents receive treatment (Mills et al., 2006; Weist et al., 2007; Zuckerbrot et al., 2007). Among those who seek treatment, access is not equally distributed. Factors such as race, ethnicity, language, culture, age, gender, financial status, and insurance status are associated with service utilization (Cassano & Fava, 2002), with historically marginalized and stigmatized populations having the least access to necessary services (Mills et al., 2006). In 2003, the President's New Freedom Commission on Mental Health reported the discrepancy between recognized mental health needs and the receipt of necessary mental health services (Centers for Disease Control, 2003). The failure of the national mental health system to address the emotional health needs of our youth heightens the need for alternative solutions. Effective screening, a mainstay of the public health approach, represents a promising early intervention. Screening interventions that detect early signs of depression and that are implemented in conjunction with programs that provide support to those who screen positive have the potential to halt disease progression and reduce the long-term negative outcomes associated with early onset of depression (Cole et al., 2008).

School-Based Depression Screening

Schools serve as an ideal setting for the early detection of emotional disorders. The public school system touches the lives of most American children, especially those from historically disadvantaged and vulnerable populations. Because of their broad reach, school-based mental health (SBMH) programs can access youth who are typically missed by interventions that are available only in the health care sector (Cuijpers et al., 2006; Mills et al., 2006; Paternite, 2005; Vander Stoep et al., 2005; Weist et al., 2007). Schools have begun to extend mental health services to students as part of coordinated school health programs (Weist et al., 2007). SBMH programs reduce barriers to learning, increase contact with students, and expand the scope of engagement strategies addressing educational, emotional, behavioral, and developmental needs (Weist et al., 2007). Research has established the increasing importance of school-based mental health interventions, finding that 70% to 80% of school-age children who receive mental health services access them through their schools (Chatterji et al., 2004).

Parents, teachers, and school counselors can readily identify some forms of emotional distress, especially those that manifest as disruptive behavior problems. However, the "quieter" forms of distress that manifest their effects on thoughts and feelings, rather than behavior, often go unrecognized in children and adolescents until serious manifestations, such as suicidal ideation or behavior, are evident. Even students

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who are contemplating suicide typically remain unidentified by school personnel (Aseltine & Demartino, 2004).

Systematic assessments that target internalizing symptomology can assist in identifying at-risk students (Cole et al., 2008; Mills et al., 2006; Zuckerbrot et al., 2007). Because children may be reluctant to reveal their negative cognitions and emotions and to report potentially stigmatizing information in face-to-face evaluations, researchers have developed and validated self-report screening tools to tap childhood internalizing symptoms (Scott et al., 2009). These tools accurately differentiate distressed from non-distressed children and can be administered confidentially in group settings.

Support for screening is founded on the belief that mental illness has identifiable traits and is highly treatable when identified (Gould et al., 2005). For a screening program to be worthwhile, it should be capable of reliably identifying cases in early clinical stages, and it should lead to the application of effective intervention during this preclinical phase. If both of these criteria are met, the screening program will be effective in halting disease progression (Hennekens & Buring, 1987). Completing a depression screen presents low risk to students but has the potential to yield high benefits in terms of morbidity, disability, and mortality reduction (Kent et al., 1997; Weist et al., 2007).

Children routinely receive physical check-ups that include examinations for illnesses with a low prevalence, such as scoliosis. However, children rarely receive emotional health check-ups, despite the high prevalence estimates of child and adolescent mental illness. The New Freedom Commission and the Child Mental Health Screening and Prevention Act, with the support of the Garrett Lee Smith Memorial Act, stimulated some attention to and funding for mental health screening (Friedman, 2006; Gould et al., 2005). As a result, screening programs have been established in schools across the country.

Four School-Based Screening Models

This section presents four school-based depression screening models. Table 1 summarizes the differing levels of concern and intervention that are intrinsic to each of the screening models.

Reynolds' Multi-Stage Depression Screening. Because of the episodic nature of depressive illness and the often transient nature of depressive symptoms, Reynolds (1986) introduced a multiple-stage screening model. The multiple-stage assessment model addresses the concern of having a high number of false positives in initial screens. In this model, the first round of screening is universal. The second round, administered about three to six weeks after the original assessment, is a rescreening of those who screened high in round one. The third and final round is a clinical evaluation of all the students who screened high in the second round.

At no point in the process are the screens intended to result in formal diagnoses of depression. Rather, the program seeks to identify those at risk of depression and those in need of intervention. Although this program has been described in the scientific literature, no evaluation reports have been published. Recent school-based models, in particular Teen Screen and Signs of Suicide (SOS), have built on and modified Reynolds' early screening model.

TeenScreen. Columbia University's TeenScreen Program is a voluntary mental health check-up program that assists both students and parents in understanding the changes of adolescence. Since its inception, the program has spread from its original location in New York City to more than 500 local sites (schools and community-based settings) in 43 states and Washington, DC. TeenScreen's program, which assesses children aged nine to 18, consists of two parts:

1. Administration of a questionnaire that takes 10 minutes to complete and assesses depressive symptoms, suicidal ideation and attempts, anxiety, substance use, and general health problems; and
2. Follow-up of positive screens by a mental health professional.

The follow-up interview functions as a verification process to confirm whether the questionnaire's result is clinically significant. If deemed necessary, students and parents are offered free referrals for further evaluation. In 2005, the program screened roughly 55,000 students across the United States. Thirty-three percent of TeenScreen participants screened positive, and 17% of the positive screens required further evaluation (Friedman, 2006).

Recently, Scott et al. (2009) evaluated the effectiveness of the TeenScreen Program. In that study, the research staff tested TeenScreen's effectiveness at identifying distressed students. Although TeenScreen aims to identify students at risk, its effort would be redundant if the program identified only students who were already recognized as at-risk by school officials.

The research staff recruited study participants from seven high schools in the New York City metropolitan area. In total, 1,729 students participated in the screening, and 489 students screened positive. The principal nominated staff to serve as identifiers of troubled youth, and each staff member was blinded to the student's screen status. Staff members were asked to assess level of concern about each student's emotional health. Ultimately, the research staff determined that roughly 34% of students who had screened positive with TeenScreen were *not* identified as at-risk by school staff. These findings support the proposition that screening captures manifestations of adolescent distress that are otherwise overlooked by involved adults (Scott et al., 2009).

Signs of Suicide. Signs of Suicide (SOS) is a school-based prevention program that includes both an educational and a screening element. The SOS program includes a short curriculum to increase awareness of suicide and the risks leading to suicide. A unique feature of this education component is the emphasis on peer intervention. The program outlines a response plan entitled ACT that stands for Ask, Care, and Tell. When students suspect a peer is suicidal, they are instructed to ask the peer how he/she is doing, to remind the peer that they care and

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Table 1: Differences in School-Based Depression Screening Models

Program	Target Problem	Action Step
Signs of Suicide	Suicide risk	Immediate attention
Reynolds Screening Program & TeenScreen	Psychiatric disorder	Mental health evaluation & treatment referral
Development Pathways Screening Program	Emotional distress	Linkage to school-based supports

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to tell their concerns about the student to an adult. According to developmental theory, peers serve as the primary sphere of social involvement during adolescence; therefore, SOS's peer-focused intervention appears developmentally appropriate for this age group (Aseltine & DeMartino, 2004).

The screening portion of this project varies from TeenScreen's model. In the SOS program, students voluntarily complete a screening questionnaire that taps depressive symptoms and suicidal thoughts; then students are responsible for scoring their own questionnaires. SOS program staff inform students about what constitutes a positive screen, and the onus to follow up with appropriate services is on the student.

In an outcome evaluation conducted by Aseltine and DeMartino (2004), SOS demonstrated a short-term impact on students' attitudes and behavior toward suicide. In the study, 2,100 students in five schools (three in Hartford, CT, and two in Columbus, GA) participated in a randomized control study. These students represented a racially and economically diverse sample. Students in the intervention group were administered the two-day SOS program in either health or social studies class. Students in the control group were not exposed to the SOS program until the evaluation was complete. Three months after introducing this program to the intervention group, participants in the entire study sample were surveyed about their attitudes and behaviors with regard to suicide. Results showed that students in the intervention group maintained lower rates of suicide attempts, had greater knowledge about how to prevent suicide prevention, and demonstrated a more sympathetic attitude toward depression and suicide. Students in the intervention group felt more empowered to help and/or act when they encountered suicide risk. Although noteworthy in its positive impact on self-reported suicide attempts, the long-term effects of this program on suicide completion have not been evaluated (Aseltine & Demartino, 2004).

Thus, several program models incorporating mental health screening in school settings have been implemented and evaluated. Two of the models extend the reach of early identification by making straightforward screening approaches available within the school setting and providing resources for (TeenScreen) or encouragement of (SOS) a follow-up response to a positive screen. None of the three models coupled the multiple-stage screening model with a systematic on-site follow-up that actively facilitates student linkage to supportive services.

The Developmental Pathways Screening Program. The Developmental Pathways Screening Program (DPSP) was designed to identify students experiencing emotional distress as they transition to middle school, to determine the source of their distress, and to link these students to supports to enhance their chances for a healthy, successful start to middle school. The program targets a developmental transition from elementary school to middle school, a time of vulnerability that can adversely affect a child's self-esteem, social engagement, and scholastic performance. DPSP identifies students early in the transition period, when the risk of emotional distress is heightened and when even those with distress levels below diagnostic thresholds face adverse long-term outcomes if their distress is not addressed. The screening program is implemented universally, because some manifestations of distress remain invisible and thus are frequently overlooked. Child mental health professionals visit schools to conduct follow-up evaluations of students who screen positive. Need for support is determined, and linkages to school and community-based academic, social, and mental health supports are facilitated.

The Theoretical Model Underlying DPSP

DPSP retains important components of prior mental health screening models. First, the project is implemented in the school setting. All participating students initially complete a brief, valid confidential screening questionnaire assessing their depressive and conduct problem symptoms. Child mental health professionals provide on-site follow-up evaluations for positive screens and contact parents of all students who undergo evaluation to deliver recommendations for support.

The model extends previous screening models in several important ways. DPSP targets children prior to the high school years when a precipitous increase is observed in the incidence of depressive disorders. Because the normative transition to middle school is stressful to most students and can trigger previously latent emotional distress in vulnerable students, the initial round of screening is universal in nature.

In the middle phase of program implementation, students are considered to have positive screens if they show early signs of distress, scoring below a cut-off score threshold that is set below the clinical range established for the screening measures. Child mental health professionals (CMHP) offer on-site follow-up evaluation to all students showing positive screens. During and after this evaluation, the CMHP facilitates the student's connection to appropriate academic, social, and mental health services by using motivational interviewing techniques in conversations with students and their caregivers.

DPSP seeks to shorten the typical six- to eight-year delay between the onset of a mood disorder and treatment seeking (Friedman, 2006) and to improve sixth graders' adjustment to middle school through early identification of distress as well as active linkage with appropriate services. Table 2 describes some of the specific features of the DPSP screening program.

Evaluation of the DPSP

Over the years, a series of evaluations of the DPSP have been carried out to determine if:

- Implementation of school-based mental health screening is *feasible*;
- Screening is *acceptable* to families from a variety of racial and ethnic backgrounds;
- The DPSP is *cost effective*;
- Active or passive parental *consent* matters;
- Screening generates an unacceptable number of *false positives*;
- *Linkages* to needed supports are successfully facilitated and
- Implementation of the DSPS screening model with feedback to parents delivered using motivational interviewing techniques is associated with better *linkage to supports*, *school adjustment*, *and parent satisfaction*, compared to screening with minimal feedback to parents.

Evaluation study methods and results are summarized below.

Feasibility. Initially, our concern was whether we could successfully inform families about the program and encourage them to participate, implement confidential screening in classrooms, and train and deploy part-time clinicians to conduct on-site follow-ups.

The DPSP was initially implemented in 2002 in four Seattle area middle schools (Vander Stoep et al., 2005) as part of an

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Table 2: Components of the Developmental Pathways Screening Program

DPSP Component	Specific Features
Confidential screening questionnaire	• Third grade reading level; administered in classroom during one class period by university staff • Mood and Feelings Questionnaire (Angold & Costello, 1987) • Youth Self-Report Externalizing Scale (Achenbach, 2001) • Middle School Adjustment Questionnaire (Kuo et al., 2009)
On-site follow-up evaluation	• Conducted by master's level child mental health professionals hired by university; 30- to 45-minute structured session with student and 15-minute semistructured phone call to parent • Confirms presence of emotional distress • Determines source of distress (academic, social, emotional) • Develops plan for additional support: academic, social, emotional health • Incorporates elements of motivational interviewing to promote successful linkage; menu of options includes: decisional balance, feedback, OARS, open-ended questions, affirmations, reflections, summaries (Miller & Rollnick, 2002)
Accommodations for special populations	• Informational materials are translated into major non-English languages of enrolled students • Administration of questionnaire can be verbal or one-on-one due to language, behavioral, reading, or sensory challenges • Translation services used to deliver feedback via telephone to parents with limited English proficiency

NIMH-funded epidemiological study of children's mental health. A total of 861 sixth grade students, or 81% of enrollees at the four schools, participated. Of the participating students, 15% screened positive and received an on-site structured follow-up assessment with a child mental health professional. Out of these students, 59% were determined to need additional support, including academic tutoring and referral to the school counselor or community mental health services.

Successful implementation of in-class screening was facilitated by strong collaborative relationships between DPSP and school staff. Confidentiality was maintained. High participation in the 2002 screening was due in part to conditions of "passive" parental consent.

Acceptability. Public school systems in urban areas of the United States serve diverse populations. In the Seattle public schools, 23% of students are African American, 23% are Asian American, and 11% are of Hispanic origin. Thirty-nine percent meet eligibility requirements to receive free or reduced price lunches. A high percentage of students have at least one immigrant parent. Foundation funding obtained in 2004 was used to focus on questions of racial and ethnic differences in DSPS participation and outcomes. Parents were telephoned six weeks after screening and follow-up to collect information on three areas: linkage, barriers to linkage, and program satisfaction.

Racial differences in participation rates were noted, with 49% African-American and 51% of Asian-American students screened, compared to 67% Hispanic and 71% European American students. No racial/ethnic differences were found in the percentage of children who screened positive. However, following evaluation by a child mental health professional, significantly more children of African-American, Asian-American, and Hispanic origin were determined to be in need of additional support. No racial or ethnic differences were found in the proportion who were successfully linked.

The top six barriers to successful linkage as reported by parents included:

1. Transportation;
2. Limited time availability;
3. Child discomfort with recommended plan;
4. Difficulty contacting provider;
5. Cost; and
6. Stigma.

Significantly more Asian-American, African-American, and Hispanic parents than European-American parents reported transportation and limited time as barriers. Significantly more European-American parents reported child discomfort with recommended plan as a barrier. Overall, 94% of participating parents reported high program satisfaction.

Cost-Effectiveness. Considerations of program costs and effectiveness enter into decisions as to whether to implement school-based mental health screening. Kuo et al. (2009) enumerated costs for DPSP screening and clinical evaluation in terms of labor and overhead and summarized program cost per enrolled student, per positive screen, and per referral. Program costs ranged from $8.88 to $13.64 per enrolled student, depending on the prevalence of positive screens in a school (5% to 20%). Cost-effectiveness was reported in terms of cost per student successfully linked to services.

Based on the finding that 72% of students referred were linked to supportive services within six weeks, cost-effectiveness was estimated at $416.90 per successful linkage when 5% of students screened positive, and $106.09 when 20% screened positive. To aid in the estimation of program costs, information about the characteristics of enrolled students can be used to generate a regression formula to estimate the proportion of students likely to screen positive in a particular school. We found that by applying the following formula to available school information, we estimated the proportion of students who would screen positive within 5% accuracy:

PREVALENCE OF POSITIVE SCREENS = 3.57 + 0.16 x (% reduced-fee lunch) + 0.59 x (% ELL).

Parental Permission. As mentioned above, the Seattle Public School District's parental consent requirements were changed from passive to active between the 2002–2003 and 2003–2004 school years. The change in permission conditions provided a natural experiment to examine the differences in DPSP participation under active vs. passive consent (Chartier et al., 2008). When children were required to have written parental permission (active consent), participation declined dramatically from 85% to 66%, compared to when parents were provided with written information and then had to actively decline in order for their child not to participate (passive consent).

The decline in participation was disproportionately higher among subgroups of students who were at greater risk for depression, including African-American students

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and those enrolled in special education programs. Thus, the requirement of active parental consent was associated with the unwanted effect of reinforcing existing disparities in access to mental health services.

Positive Predictive Value. A recurring concern in the arena of depression screening is the "false positive." When children who are not truly suffering from emotional distress screen positive, they and their parents can be subjected to undue apprehension and possible stigmatization. Therefore, a screening program must choose a validated screening tool and must set a cut-off level that optimizes the "yield" while reducing the number of false positives.

During its eight years of implementation, DPSP has maintained a very steady positive predictive value of ~60%. With a positive screen prevalence of 20 per 100, when the program screens 100 children, eight will screen positive falsely and 12 will be "true positives." DPSP staff take steps to reduce students' anxiety around screening by ensuring confidential and upbeat follow-up evaluations, by using non-stigmatizing language (distress, rather than depression), and by communicating in parent phone calls about the student's assets.

Linkage Success. A concern held by schools or communities is that universal screening will yield a need that is larger than the available resources. At the level of the individual child and family, this problem translates into the risk of identifying a problem but not resolving it. There are many barriers to obtaining mental health services, including:

- Lack of mental health coverage by health care insurance plans;
- A large proportion of the population that is uninsured; and
- Lack of access to evidence-based treatments.

As a result, communities are not ensured positive outcomes for persons experiencing emotional distress or even serious psychiatric disability, especially in the face of other pressing health, educational, or social concerns. Since 2005, DPSP has embedded a motivational interviewing component into the clinical evaluation, added a second follow-up phone call to parents who received recommendation for supports, and then tracked whether students were successfully linked to recommended supports through a call from a research assistant five weeks post-screening.

Pilot Randomized Control Trial. The 2008 iteration of DPSP included implementation of a small-scale randomized control trial of screening (McCormick, 2009), followed by two different ways of delivering parent feedback. The trial was conducted in one middle school to examine the effects of giving feedback to parents via telephone conversation with motivational interviewing (MI) versus giving feedback to parents via a mailed letter. The 42 students who screened high were randomly assigned to the two conditions. Investigators hypothesized that parents in the telephone MI feedback condition would experience a greater sense of urgency and empowerment and that as a result, students in this condition would:

- Be more likely to access recommended services;
- Experience lower levels of emotional distress by the second semester of the sixth grade; and
- Experience more positive middle school adjustment;

To assess emotional health outcomes (changes in depression and conduct problem scores), the students who had screened positive in the fall received a second screening four months post-intervention, during the second semester of the sixth grade. School record data were used to ascertain GPA, attendance, and disciplinary actions. The previously described five-week follow-up phone call was made to ascertain linkage status. After the second round of screening, staff surveyed parents and teachers to assess their satisfaction with the screening program.

Regardless of how parent feedback was delivered, students who screened positive and underwent the clinical evaluation reported significant declines in levels of depression symptoms by second semester (mean decrease of 8.7 points in Moods and Feelings Questionnaire score; $t = 3.8$, $p = 0.001$), as well as conduct problems (mean decrease of 4.8 points in Youth Self-Report externalizing scale score; $t = 2.8$, $p = 0.008$). Results showed that of the 22 students in the telephone MI feedback group, 78% were linked to recommended support services, compared with 36% of the 22 students in the control group (1-tailed Fisher exact test, $p = 0.06$). Consistently better, but not statistically significant, adjustment across three school indicators (GPA, attendance, disciplinary actions) was also noted for students in the telephone MI feedback condition (McCormick, 2009).

DPSP also received high marks of satisfaction with students, parents, and teachers. Differences in parent reactions to the delivery of follow-up and the program were apparent in comments. One parent from the intervention group commented:

> I got good follow-up on the phone call. [The CMHP] recommended talking to the teacher, which was great. [My daughter] formed a bond, and it's been really good for her to have support.

A parent in the control group, who received feedback via the mail, reported:

> I'm not sure what the program does. I just got the letter—not really sure what she got out of the meetings.

Several parents in the control condition reported a similar desire for better communication during program implementation. In general, parents from both groups as well as teachers in the middle school, maintained high levels of agreement that mental illness adversely affects school performance and that students' mental health should be addressed in schools.

For each year the DPSP has been implemented, the team has formulated and addressed a new evaluation question. Implementation and evaluation costs have ranged from $10,000 a year in one school to $30,000 in four schools. Originally funded as part of a larger NIH-sponsored epidemiological study, since 2005 DSPS has been supported by private foundations and individual donors. DPSP integrates program development, implementation, and evaluation at a low cost and provides a model for performing continuous quality improvement. A larger randomized controlled trial is planned.

Encouraging Findings But Challenges Remain

During the past 20 years, school-based mental health programs have been created and refined, which has led to increased identification of at-risk students, connection of those students to appropriate services, and promotion of positive mental health at the individual and population levels (Cassano & Fava, 2002). Successful implementation of school-based mental health programs warrants a careful consideration and examination of potential costs and benefits. This paper has reported on the growing base of empirical evidence that addresses questions regarding the costs and effects of school-based depression screening.

Although this paper presents encouraging evaluation findings to support the

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implementation of school-based screening, the evidence warrants rigorous evaluation to ensure its feasibility, cost-effectiveness and long-term benefit for populations. Specifically, studies should demonstrate an intervention's positive impact on relevant outcomes, including but not limited to, linkage to supportive services, decreases in emotional distress, and increases in academic success. Although randomized controlled trials of screening programs are ideal for evaluating program effectiveness, they remain challenging to implement. Two factors in particular land researchers in a methodological quagmire:

1. Random assignment at the individual student level within a universal screening framework is difficult, and at the school level, the design often suffers from inadequate sample comparability and power.
2. The true impact of the program on outcome measures is unknown, because research designs cannot withhold treatment from respondents who demonstrate levels of distress. Without a comparison group receiving no treatment, researchers will struggle to understand the nature and course of transitional stress.

Although a recent study published in the *American Journal of Preventive Medicine* ranked depression screening among the top 25 preventive services offering the most health benefit for the health care dollar (Johnson, 2006), implementation of universal screening of children remains controversial. Despite the New Freedom Commission's recommendation for in-school screening, members of the U.S. Congress proposed an amendment to an appropriations bill that would have prohibited funding for such programs (Paul, 2004). Although the bill did not pass, some members of the media, the public, and Congress decried universal screening as coercive and potentially stigmatizing. Ultimately, critics accused screening programs of furthering the agenda of the pharmaceutical industry (Conservative Caucus, 2004; Eakman, 2004).

Fueling public apprehension about screening are reports of the recent upsurge in use of psychotropic medications such as Ritalin among school-aged children (Dunn, 2002) and of drug companies and even the U.S. Food and Drug Administration failing to make public evidence of harmful side-effects of antidepressants for treating adolescents (Elias, 2004; Harris, 2004; Shetty, 2004). These critiques must be weighed against the accruing evidence in support of screening programs.

At the same time, questions regarding the voluntary or mandatory nature of screening programs, the dissemination and use of screening results, and the interests and agendas of proponents and funders raise legitimate concerns that must be openly addressed.

Conditions for implementing school-based depression screening have improved, due to a number of factors that include:

- A legacy of school-based screening and intervention for a variety of health conditions;
- A surge in the development of promising school-based programs to address mental health concerns (Paternite, 2005);
- A focus among policymakers on preventing childhood depression (Hoagwood, 2003);
- A growing awareness of the links between emotional health and school performance (Greenberg et al., 2003); and
- Efforts in the educational system to "leave no child behind" (U.S. Department of Education, 2002).

In the meantime, depression and other mental health problems are taking a critical toll on students' school performance and general well-being. An estimated 50% of failure to complete secondary school can be attributed to unaddressed mental health conditions in the U.S. student population (Vander Stoep et al., 2003). Depression is also a key risk factor for suicide, which is the third leading cause of death for Americans age 15 to 24 (Anderson, 2002; Salvatore, 2006).

The need to address students' mental health problems is becoming evident, and the evidence supporting school-based screening programs is accumulating. Program evaluation efforts must continue, with information about costs and benefits of screening programs disseminated to scientists, policymakers, education and health professionals, and the public. With further evaluation and refinement, school-based screening can play an important role in detecting early precursors to problems that, if left unaddressed, can become impediments to health, learning, and school success.

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