

APPENDIX A

Program Development and Evidence Base

The *Social Skills in Pictures, Stories, and Songs (SSPSS)* program is the result of a six-year project funded by the U.S. Administration on Children, Youth and Families and the National Institute of Mental Health. The project allowed university researchers to develop and evaluate prevention and intervention programs in local Head Start programs as part of a Head Start Mental Health Research Consortium. Four other sites besides ours at the University of New Mexico were involved in similar partnership projects: Columbia University, the University of Oregon, the University of North Carolina, and Vanderbilt University. The programs at these sites were aimed at children who were already identified as having emotional or behavioral disorders or who were in the process of being screened for such disorders. Our site was the only one targeting children who had not already been so identified. We used the four stories included in the storybook that accompanies this teacher's guide in a classroom-wide approach to teach the following adaptive social and emotional skills: following directions, sharing, managing one's behavior, and problem solving. Although the instruction was intended to prepare all children with such skills, it also provided specific assistance to children who may have been at risk for emotional or behavioral problems, possibly preventing or at least mitigating their future difficulties.

In this appendix, we briefly describe the research evidence from field trials for the *SSPSS* program and provide several annotated references for readers who wish more detail. We have arranged the first group of references, studies of our own program, in the order in which we completed the research so readers can better grasp the cumulative progression of program development and testing over the six-year period. (Over the years, the *SSPSS* program has had several titles, so readers should be aware that all refer to the same program.) We also include a shorter annotated list, arranged alphabetically, of comprehensive research reviews devoted to the general topic of social-emotional development and evidenced-based practice in this field.

Our initial study was a randomized controlled trial comparing the use of the *SSPSS* program over a 12-week period in three experimental classrooms at one Head Start preschool site. Two comparison or control classrooms at another nearby site did not receive the *SSPSS* instruction, but simply used their story time for typical preschool literacy activities. Children in experimental classrooms did significantly better

than children in control classrooms, as measured by teacher ratings taken before and after the 12-week instructional period. These ratings included not only symptom lists of emotional or behavioral problems, but also measures of general social functioning (Serna, Nielsen, Lambros, & Forness, 2000). Although we taught entire classrooms and did not target specific children, scores for those few children in the experimental classrooms who were in the clinical range of emotional or behavioral disorders on the pretest (that is, were already demonstrating significant emotional or behavior disorders) were either no longer in the clinical range or did not worsen on the posttest after 12 weeks. Children in the clinical range in the control classrooms either got worse or demonstrated new behavioral or emotional disorders by the end of the same period (Serna, Lambros, Nielsen, & Forness, 2002).

A second randomized clinical trial addressed the problem of program application in the real world. In the first trial, our teacher in the experimental classrooms was a project teacher with a master's degree who co-taught the story lessons in each classroom with the local Head Start teacher. We therefore replicated the first trial with only the local Head Start teachers in six different Head Start classrooms (three experimental and three control classrooms). Our findings again favored the *SSPSS* program, but they were not nearly as impressive as those obtained in the first study. On the basis of informal observations, we did speculate that children in the experimental classrooms still seemed to demonstrate considerably more actual skill in following directions, sharing, managing their behavior, and problem solving.

We therefore undertook a third randomized clinical trial, using the exact same approach as for the second trial. However, in addition to ratings of symptoms and social functioning, we did direct, structured observations of the four skills in children from each of the six classrooms (Serna, Forness, & Mattern, 2002). We found essentially the same results on ratings of symptoms—that is, only modest improvement in children in experimental classrooms. Our direct observations, however, revealed huge differences in all four areas of skill development. In control classrooms, children demonstrated only 20 to 40 percent of the skill steps across the 12-week period. In experimental classrooms, children demonstrated 20 to 40 percent of the skill steps before the skill lessons were taught, but demonstrated 90 to 100 percent of the skill steps after the *SSPSS* lessons. These children maintained their high skill levels for the remainder of the study.

We also did a follow-up of children from our first study after four years, when they had completed third grade. Although we had difficulty locating all of these children, we managed to find a representative sample and did a systematic search of their school records. On several outcome measures related to school testing, disciplinary referrals, and need for services, children in our original experimental class-

rooms—those who had been in the *SSPSS* program—were doing slightly to significantly better (Forness, Serna, Mattern, Borg, Gullett, & Moses, 2003). It is also important to note that our program also appeared that same year on a list of eight social-emotional curricula having significant adoption potential for early childhood programs (Joseph & Strain, 2003).

RESEARCH ON THE SSPSS PROGRAM

Forness, S. R., Serna, L. A., Kavale, K. A., & Nielsen, M. E. (1998). Mental Health and Head Start: Teaching adaptive skills. *Education and Treatment of Children, 21*, 258–274.

This extensive review of the research literature serves as a rationale for primary prevention and universal, classroom-wide approaches to preschool mental health. It also covers developmental psychopathology, risk versus resiliency, and self-determination as bases for the *SSPSS* program and presents a rationale for selecting the four skills taught in the program.

Forness, S. R., Serna, L. A., Nielsen, M. E., Lambros, K., Hale, M. J., & Kavale, K. A. (2000). The Albuquerque YDI Head Start Program: A model for early detection and primary prevention of emotional or behavioral disorders. *Education and Treatment of Children, 23*, 325–345.

This article describes the Albuquerque Head Start program, where our research on the *SSPSS* program took place. It discusses its adoption of methods to screen for early detection of mental health disorders and the adoption of our program. It also presents preliminary data from our first year of research.

Serna, L. A., Nielsen, M. E., Lambros, K., & Forness, S. R. (2000). Primary prevention with children at risk for emotional or behavioral disorders: Data on a universal intervention for Head Start classrooms. *Behavioral Disorders, 26*, 70–84.

This article provides results of the first randomized, controlled trial of the *SSPSS* program. Three experimental and two control Head Start classrooms were involved, with a total of 53 children in the experimental curriculum classrooms and 31 in the control classrooms. Some 70 to 80 percent of children were of Hispanic origin, but all preschool teachers and Head Start staff spoke Spanish, and a Spanish-language storybook was available. We implemented the program over a 12-week period, during two three-hour periods each week. Children in control classrooms had their usual story times and literary lessons during this period, with no specific content on adaptive skills. All ten child-outcome measures used for pretest

and posttest, as rated by teachers, favored children in the experimental classrooms, with five of the ten measures being statistically significant at the .04 level or better. Effect size differences between the two groups ranged from .39 to .96 on these five measures (meaning an advantage for children using our program of nearly half a standard deviation or greater over children in the control condition). The measures included two symptom ratings and three measures of social adaptation.

Serna, L. A., Lambros, K. M., Nielsen, M. E., & Forness, S. R. (2002). Head Start children at risk for emotional or behavioral disorders: Behavioral profiles and clinical implications of a primary prevention program. *Behavioral Disorders, 27*, 137–141.

This second article from our first randomized, controlled trial focuses on findings for children at clinical risk, as opposed to all children (as described in the previous article). Although our program did not target specific children, we analyzed data on just those children who met clinical cutoff points on at least three of the five measures of psychopathology used during pretesting (meaning that they met criteria for diagnosable emotional or behavioral disorders). We purposely did not identify or target any of these children specifically in our intervention. At the end of the 12-week period, however, two of these children were no longer in the clinical range, and the remaining six did no worse on any of the five measures. In the control classroom, only 1 of 31 children met clinical criteria at the beginning. This child did worse at the end of instruction, and three additional children in the control classrooms met clinical criteria on posttesting (in other words, they developed psychopathology in the absence of the program).

Serna, L. A., Nielsen, M. E., Curran, C., Higgins, L. D., & Forness, S. R. (2002, October). *Classroom-wide prevention in mental health using literacy-based materials*. Paper presented at the meeting of the Council for Learning Disabilities, Denver.

This presentation focused on the literacy and prereading aspects of the SSPSS and how the SSPSS could effectively substitute for stories included in reading or literacy curricula. Although vocabulary in the stories was geared primarily toward four- and five-year-olds, the interest level targeted a range of ages in the early childhood years. One of the co-presenters (Higgins) has also subsequently used the program with third graders with emotional or behavioral disorders, many of whom were also “twice-exceptional” (that is, classified as gifted *and* as having emotional disturbance). A University of New Mexico doctoral student in special education (Scott Gullett) recently completed his dissertation studying use of the SSPSS program in this classroom.

Serna, L. A., Nielsen, M. E., Mattern, N., & Forness, S. R. (2003). Primary mental health prevention in Head Start classrooms: Partial replication with teachers as intervenors. *Behavioral Disorders, 28*, 124–129.

This article presents the results of our second randomized, controlled trial. In this study, we made one major change. In our first trial, a university preschool teacher co-taught the lessons with the Head Start teacher. We felt that having an extra person in the classroom may have given an advantage to our experimental classrooms. In this second trial, we repeated the experiment, but only the Head Start teacher taught the lessons. We had three experimental classrooms (N = 51) and three control classrooms (N = 47). We used only eight outcome measures because two of our original ten measures seemed redundant in retrospect. As in our first study, approximately 80 percent of participating children were of Hispanic origin, with a relatively small number who were not English speakers. We also implemented a formal checklist for fidelity of treatment, which had been assessed informally during the first trial. In this study, only two of eight outcome measures were statistically significant, with effect size differences at .31 and .29 (meaning an advantage of only slightly less than a third of a standard deviation). Because this study only partially replicated our first trial, we decided to do a third trial, next described.

Serna, L. A., Forness, S. R., & Mattern, N. (2002, November). *Relationship between improvement in psychiatric symptoms and improvement in functional impairment: Data from a primary prevention program in a Head Start classroom*. Paper presented at the annual TECBD Conference on Severe Behavior Disorders of Children and Youth, Tempe, Arizona.

This presentation summarized findings from our third randomized, controlled trial on the SSPSS program, conducted with three experimental and three control classrooms (N = 50 and 47 children, respectively). The only essential change from the second trial, described above, is that we added four new direct outcome measures to the eight outcome measures used in the second trial. These were direct observations of the four adaptive skills. We observed skill use in each child at the end of three-week lessons on each of the four skills, over the 12-week period. As in the second trial, only two of the eight mental health outcome measures (pretests and posttests) were significant; another approached significance, all in favor of children in experimental classrooms. Our direct observations were all highly significant, however, in favor of children in experimental classrooms. For all four skills, both during baseline for the experimental students and over the entire 12-week study for controls, children demonstrated skill performance 20 to 40 percent of the time, on average. After each three-week period of skill instruction, experimental students demonstrated the skill, on average, 90 to 100

percent of the time. This finding illustrates a primary difference between mental health and school-based research in terms of outcome measures.

Forness, S. R., Serna, L. A., Mattern, N., Borg, H., Gullett, S., & Moses, M. (2003, November). *Head Start children four years later: Follow-up of preschoolers in a classroom-wide primary prevention program in mental health*. Paper presented at the annual TECBD Conference on Severe Behavior Disorders of Children and Youth, Tempe, Arizona.

This presentation described a follow-up of the 84 children who were in our first randomized controlled trial, more than four years after preschool, when these children had completed third grade. We were able to contact 21 percent of these children, but the children did not differ significantly from the total original sample of 84 on gender, ethnicity, or general functioning at the end of preschool. We then did a systematic archival records search on these 18 children over the summer and fall of their entrance into fourth grade. On several outcome measures (such as schoolwide achievement tests, school disciplinary referrals, need for Chapter 1 services, and referrals for community mental health or social services), children in experimental classrooms did slightly to significantly better. Thus they seemed to maintain gains originally made in preschool as a result of participating in the SSPSS program.

Joseph, G. E., & Strain, P. S. (2003). Comprehensive evidence-based social-emotional curricula for young children: An analysis of efficacious adoption potential. *Topics in Early Childhood Special Education*, 23, 65–76.

In this comprehensive review of studies of social-emotional curricula for children under six years of age, the authors selected only those programs that they considered to “have been successful in the promotion of interpersonal skills and the reduction or prevention of challenging behavior for a wide range of children . . . [based on] level of evidence or scientific believability associated with criteria that reflect efficacious adoption of curricula” (p. 65). The SSPSS curriculum was one of only eight programs selected.

Serna, L. A., Forness, S. R., & Gullett, S. (2004, April). *A story-telling intervention for young children: Five years of research*. Paper presented at the annual International Conference of the Council for Exceptional Children, New Orleans.

This presentation focused on five years of research concerning our SSPSS program for young children. Highlighted was a study of program use in a classroom with third and fourth graders who had emotional disorders and were gifted. The results indicated that students acquired the four skills. Generalization measures in guided and unguided situations were obtained. These results indicated

that the children generalized their skill performance in both situations observed over time.

Serna, L. A., Nielsen, M. E., Higgins, L. D., & Forness, S. R. (2005, April). *Using stories and music to teach social skills to young children*. Paper presented at the annual International Conference of the Council For Exceptional Children, Baltimore.

This presentation described the *SSPSS* curriculum and how to implement its components and presented the overall findings of the project, highlighting the final study of the project. Two groups of children (experimental and control) were assessed for their knowledge of the four skills. A multiple baseline across skills design was used to assess the immediate effects of the training procedure. Results indicated that the students in the experimental group learned the skills, whereas the students in the control group did not improve their skill level over time.

RELATED RESEARCH REVIEWS

Feil, E. G., Small, J. W., Forness, S. R., Serna, L. A., Kaiser, A. P., Hancock, T. B., Bryant, D., Kupersmidt, J., Burchinal, M. R., Brooks-Gunn, J., Boyce, C. A., & Lopez, M. L. (2005). Using different measures, informants, and clinical cut-off points to estimate prevalence of emotional or behavioral disorders in preschoolers: Effects on age, gender, and ethnicity. *Behavioral Disorders, 30*, 375–391.

This article provides a review of the literature on expected prevalence of emotional or behavioral disorders in preschool children, by way of introducing a study of 1,781 children at four Head Start sites. The study examined the effects of using several widely used measures of symptoms of emotional or behavioral disorders and several measures of functional impairment, alone or in combination, to determine percentage of children with emotional or behavioral disorders. The measures seemed surprisingly free of gender or ethnic bias, except in a few instances. Best estimates of prevalence appeared to be in the 13 to 15 percent range.

Forness, S. R. (2005). The pursuit of evidence-based practice in special education for children with emotional or behavioral disorders. *Behavioral Disorders, 30*, 311–330.

This article provides a comprehensive review of the topic of evidence-based practice in education and treatment of children with, or at risk for, emotional or behavioral problems. Evidence-based practice began in the field of medicine as a system to determine the most effective medical treatments or interventions by

selecting only those treatments that met criteria for efficacy in controlled scientific studies. This practice is now being applied in mental health and education for the same purpose. The article covers what we should accept as evidence when it comes to the scientific study of interventions in these fields, how to initiate and sustain evidence-based practice, the importance of social-emotional development in young children's learning, and prevention of emotional or behavioral disorders in the early years.

Fox, L., Jack, S., & Broyles, L. (2005). *Program-wide positive behavior support: Supporting young children's social-emotional development and addressing challenging behavior*. Tampa: University of South Florida, Louis de la Parte Florida Mental Health Institute.

This monograph provides an introduction to the development of young children's social-emotional development and describes how to initiate systemwide support for such development in actual early childhood settings. The monograph has been developed with the collaboration of two of the most important national centers devoted to this topic: the Center on the Social and Emotional Foundations for Early Learning (www.csefel.uiuc.edu) and the Center for Evidence-Based Practice, Young Children with Challenging Behavior (www.challengingbehavior.org). The Web sites for both these centers provide critical information on evidence-based practices and a variety of free materials that can be downloaded on development of social-emotional skills. Just as important, these sites also provide information and materials on evidence-based strategies to use with those young children who do *not* respond to primary prevention, such as the *SSPSS* program, and who may therefore need additional, more intensive help targeted toward their specific behavioral needs.

Luby, J. L. (2006). *Handbook of preschool mental health: Development, disorders and treatment*. New York: Guilford.

This book offers a comprehensive overview of social-emotional development and specific mental disorders that may arise during early childhood, describing their causes, evidence-based treatments, and techniques for assessing such disorders. The editor, Dr. Joan Luby, is one of the foremost child psychiatrists working on such disorders and has assembled equally expert colleagues to write chapters on AD/HD, oppositional defiant disorder, depression, anxiety disorders, and related problems that may occur in early childhood. Many such children will benefit greatly from a preventative program such as *SSPSS*, but a significant number may not. Their lack of response to a prevention program effective for other children may indicate the need for more intensive intervention or referral.

Zins, J. E., Weissberg, R. P., Wang, M. C., & Walberg, H. J. (Eds.). (2004). *Building academic success on social and emotional learning: What does the research say?* New York: Teacher's College Press.

This comprehensive overview of research concerns efforts to integrate foundations for social-emotional development into academic lessons (much as we have done in the *SSPSS* program). It provides extensive theoretical and research background on the relatively new area of educational foundations and skill development.