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Contemporary School Psychology

2013, Volume 17, Issue 1

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~ EDITOR'S INTRODUCTION ~

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The Role of School Psychologists In Meeting the Mental Health Needs of Children and Youth

Michael Hass, PhD, Editor
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This is the second of two volumes of *Contemporary School Psychology* devoted to the role school psychologists play in meeting the social and emotional needs of children and youth. As discussed in the spring 2012 issue, this theme is in part driven by the legislative changes that ended the long-standing partnership between County Departments of Mental Health and Local Education Agencies and shifted the responsibilities for these services to the schools. Although this is a situation distinctive to California, the challenge of meeting the mental health needs of children and youth is a national concern.

In the essay introducing the spring 2012 issue of CSP (Hass & Domzalski, 2012), we noted that several studies have found that over the course of a calendar year; about 20 percent of children suffer from a diagnosable mental health disorder (e.g., Burns, Costello, Angold, Tweed, et al., 1995; Costello, et al. 1989; Shaffer et al. 1996). I would invite all of our readers to make this abstract figure concrete by imagining a school they work at and then making the calculation of how many children might need mental health services. The raw figures can be overwhelming. For example, at a high school of 2,000 students, 400 students might have a diagnosable condition. This, of course, does not take into account the students who suffer significant impairment in their lives but do not meet the formal criterion for a diagnosis.

The need for services is undisputable. The cost of not meeting these needs is also great for schools, families, and communities. There is strong evidence that unmet mental health needs result in poor school achievement, poor future employment opportunities, and a greater chance of living in poverty (Knapp, et al, 2002, National Advisory Mental Health Council Workgroup on Child and Adolescent Mental Health Intervention and Deployment, 2001). Unfortunately, our systems for providing mental health services are often fragmented, underfunded, and inaccessible to those most in need.

Schools have an important role in meeting these needs. In fact, it is hard to imagine an adequate system of supports that did not include the active participation of schools. In 2003, The President's New Freedom Commission on Mental Health, after a year of study, described the role schools thus:

> Schools are in a key position to identify mental health problems early and to provide a link to appropriate services. Every day more than 52 million students attend over 114,000 schools in the U.S. When combined with the six million adults working at those schools, almost one-fifth of the population passes through the Nation's schools on any given weekday. Clearly, strong school mental health programs can attend to the health and behavioral concerns of students, reduce unnecessary pain and suffering, and help ensure academic achievement. (2003, p. 58)

School psychologists have a key role in creating strong programs of prevention, early intervention, and systems of care in schools. In fact, school psychologists are uniquely qualified to provide these services. This is reflected in our training and our scope of practice. The NASP Blue Print III (2010) defines four Functional Competencies that are a required part of the training received at any NASP-approved program. One of these is "Interventions and Mental Health Services to Develop Social and Life Skills." NASP defines this domain broadly to include basic expertise in developing and implementing

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prevention programs for a wide range of psychosocial problems, intervening with both externalizing and internalizing problems and providing support in the aftermath of crises events.

These training standards are carried forward into our scope of practice. For example, Section 49424 of the California Education Code, describes school psychologists and their services as including the provision of "Psychological counseling of and other therapeutic techniques with children and parents, including parent education." Although scope of practice may differ somewhat from state to state, the message is clear that both in our training standards and our scope of practice, school psychologists are well prepared to provide a wide range of mental health services in the schools.

The special section on The Role of School Psychologists in Meeting the Mental Health Needs of Children and Youth contains articles that represent the diversity of challenges faced by school psychologists, including assessing parent involvement, assessing and treating depression and early onset schizophrenia, preventing suicide and promoting resiliency as a way to reduce violence. This issue also has five general articles. Two focus on different aspects of reading and another on a model of strengths-based assessment. The remaining two articles include a provocative treatment of ethical issues and a discussion of the quantity and types of peer-reviewed journal articles related to race/ethnicity competency. Lastly, Ryan McGill provides an informative review of the Creed, Reisweber, and Beck's *Cognitive therapy for adolescents in school settings*. We are proud of the contributions these 12 pieces make to the field of school psychology and hope they serve as a resource for school psychologists in promoting the success of children and youth in schools.

I would like to express my gratitude to our contributing authors for choosing CSP as the venue for their work. As we hear at the end of each airline flight we take, we know you could fly with someone else. I would also like to thank Managing Editor Stephanie Domzalski and Associate Editors Kelly Kennedy and Brian Leung who have been the best possible partners in the journey to create something of value to school psychologists in California and the nation. The Editorial Board and I also want to express gratitude for the support of the CASP Board of Directors and Executive Director Suzanne Fisher. Most of all, we would like to thank Heidi Holmblad, who while juggling more tasks than any of us, manages to produce a journal of which we can all be proud.

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~ SPECIAL TOPIC SECTION ~

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Examining a Brief Measure of Parent Involvement in Children's Education

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The current study is a preliminary investigation of the psychometric properties of a brief seven-item Parent Involvement Survey (PIS) as developed by the researcher, that could potentially be used in schools. In an effort to test for construct validity, the relation of the PIS to elementary-aged students' receptive vocabulary skills and four familial factors (family functioning and resiliency, social support, concrete support, and nurturing and attachment) was examined. The sample included 182 parents that completed the PIS, which was available in English and Spanish. Approximately 60% of the parents completed the Spanish version and 40% completed the English version. Additionally, there were 102 preschool and kindergarten children whose receptive vocabulary was measured with the Peabody Picture Vocabulary Test-Fourth Edition (PPVT-4). A series of exploratory factor analyses on the PIS indicated a one-factor solution with five items to be the best model fit for the observed data. The final, five-item PIS assessed parents' current levels of values, school-, and home-based involvement in their children's education. Bivariate correlations indicated that three familial factors were significantly related to the PIS, and parent involvement was significantly related to student receptive vocabulary scores on the PPVT-4. The findings of this study provide preliminary evidence supporting the psychometric properties of the PIS and its relation with academic outcomes and familial factors. Implications are discussed regarding how school psychologists can use this brief parent involvement measure in practice.

KEYWORDS: brief parent involvement measure, parent involvement, home-based involvement, school-based involvement, children's education

Over a number of years, researchers have found substantial evidence showing positive relations between parent involvement, child development, and positive academic outcomes (Coll et al., 2002; Jeynes, 2005; Voyandoff & Donnelly, 1999). Specifically, parent involvement has been associated with higher grade attainment, engagement in school, and increased on-time high school completion (Benzies & Mychasiuk, 2009). Research has also shown positive influences of parent involvement on children's academic outcomes as early as preschool (Campbell, Ramey, Pungello, Sparking & Miller-Johnson, 2002). This has sparked an increased interest by schools to get parents more involved in their children's education as early as possible (Michigan Department of Education, 2001; No Child Left Behind, 2004).

While there is general consensus among researchers and educators regarding the positive influence of parent involvement (Chen & Gregory, 2010; Fishel & Ramirez, 2005), there seems to be some ambiguity regarding the specific impact of parent involvement on specific outcomes for children. Some of the issues that contribute to this gap relate to the considerable variation in how parent involvement is operationally defined and measured (Jeynes, 2005; Chen & Gregory, 2010), making it difficult to generalize findings across studies. The variation in how parent involvement is defined and measured can impact the way schools understand parent involvement. Educators are highly encouraged to promote parent involvement by national policymakers such as the No Child Left Behind Act (NCLB) (2004) and the U.S. Department of Education. While parent involvement is often encouraged by federal and local education agencies and policies, consensus regarding how parent involvement should be defined remains unclear.

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Currently, schools are inundated with a number of tasks, and developing parent involvement policies and programs are among one of the many challenges schools are facing. Needless to say, school personnel are often pressed for time and need to be efficient with how they expend their energy and resources. Thus, the current study is a preliminary investigation of a brief parent involvement measure that could be used in schools, specifically focused on the measure's psychometric properties and relations with theoretically relevant constructs, such as familial factors and student achievement. Such a measure would be useful for schools in that it would allow for more efficient and theoretically accurate measurement of levels of parent involvement which could be used to inform the development and evaluation of programs designed to increase parents' involvement in their children's education.

Parent Involvement

Parent involvement has been examined in several different ways within various contexts (Jeynes, 2005; Coll et al., 2002). In a general sense, parents can be involved in their children's lives in many different ways, including involvement with extracurricular activities (Ortiz, 2004), and socio-emotional development (Burchinal, Roberts, Zeisel, Hennon, & Hooper, 2006; Cantalano, Mazza, Harachi, Abbott, Haggerty, & Fleming, 2003). While each of these aspects of involvement may be significant for various reasons, in the current study the term parent involvement is used in reference to parental beliefs, behaviors, and/or actions that are focused on their children's education (Coll et al., 2002; Epstein, 1995). Within this area, parent involvement includes both home- and school-based activities that indicate an investment in their children's education, including helping with schoolwork, communicating with teachers and attending school sponsored events (Griffith, 1998; Hill, Castellino, Lansford, Nowlin, Dodge, Bates, & Pettit, 2004).

A review of previous research examining parents' involvement in their children's education revealed potentially important variations in how involvement has been defined (Farver, Xu, Eppe, & Longian, 2006; Fishel & Ramirez, 2005; Gordon & Nocon, 2008). Coll et al. (2002) developed a framework, particularly focused on defining the actual behaviors that constitute parent involvement along with parenting beliefs. These included (a) *Values* or parents' perceptions of their role in children's formal educational pursuits, (b) *School-based Involvement* which included exemplars of parental contact with and participation in their children's school, (c) *Home-based Involvement* defined as the environmental and social practices put in place by the parent in the home as it relates to education, and (d) *Provision of Material Resources* which was focused on whether parents put forth efforts into creating an environment that would optimize the child's experience with learning and homework.

Measurement of Parent Involvement

In addition to definitional variations, research investigating parent involvement has measured it from multiple perspectives (teacher, parent, student) using various methods, including self-report surveys, interviews, and observations (Burchinal et al., 2006; Catalano et al., 2003; Fishel & Ramirez, 2005; Lien & Carlson, 2009; Ogg, Brinkman, Dedrick, & Carlso, 2010). While self-report surveys are the most commonly used method for assessing parent involvement, the actual content and number of questions used varies widely. A review of published measures revealed inconsistencies regarding how parent involvement is defined and measured. The lack of consistency across measures makes it difficult to accurately interpret findings across studies.

One inconsistency across available parent involvement measures relates to the length. Some have up to 125 questions (Epstein & Salinas, 1993), while others have only one or two questions (Chen & Gregory, 2010; Harper and Pelletier, 2010). Measures that are too lengthy may be cumbersome especially for schools to administer considering the limited time available to gather and analyze such information. However, those that are too short may not adequately measure the construct of parent involvement. There seems to be a need for brief and efficient measures of parent involvement for schools that still adequately capture the construct of parent involvement.

Purpose of the Current Investigation

The purpose of the current study is to examine the Parent Involvement Scale (PIS), a theoretically sound, brief and efficient measure of parent involvement as developed by the researcher. Additionally, this study examined the psychometric functioning of the PIS. This included an introspective examination of the scale's factor structure, as well as, an external examination of how the measure relates to other theoretically relevant factors, such as familial factors and student achievement. The items on the survey were derived using Coll et al.'s (2002) parent involvement framework as a foundation.

Benson's (1998) framework for evaluating the construct validity of a scale was used to design the investigation of the psychometric function of the researcher-developed parent involvement scale. From Benson's perspective, a construct is an "attribute of people, assumed to be reflected in test performance." As such, when attempting to establish construct validity, scale developers must engage in the process of evaluating the theory of a construct in developing items and continuously refining and improving measures based upon relevant results. Benson's framework focuses on three main aspects of construct validation: (1) Substantive -- how the construct has been defined theoretically, and empirically (via the observed variables used to measure the construct), (2) Structural -- the internal consistency of the observed variables, and (3) External -- how the constructs relates to different constructs that it should (or not be) related to theoretically. Benson's (1998) framework guided the construct and test validation process of the parent involvement survey of the present study.

The Parent Involvement Survey (PIS) was administered along with a survey that measured familial factors, called the "Protective Factors Survey (2008)" (PFS) in the current study. The PFS measures family functioning and resiliency, social emotional support, concrete support and nurturing and attachment. Research has shown parent involvement to demonstrate a significant relationship with the familial factors measured on the PFS (Burchinal, Roberts, Zeisel, Hennon and Hooper, 2006; Cantalano, Mazza, Harachi, Abbott, Haggerty and Fleming, 2003; Griffith, 1998; Riggs and Medina, 2005). Therefore, the familial factors on the PFS are used as a criterion validity measure with the parent involvement items added in the current study.

The current study is a preliminary examination of the psychometric properties of a brief parent involvement measure as developed by the researchers of the project. The specific research questions are outlined below:

- Do the parent involvement items on the PIS function as a unidimensional latent trait?
- Is the PIS significantly related to other familial factors that have been theoretically linked to parent involvement?
- Does the PIS demonstrate a significant relationship with children's academic achievement?

METHOD

Participants

Participants in the current study included (N=182) parents of children who attended two kindergarten programs and three preschool programs in central California. Forty percent (N=72) of the participating parents completed the survey in English and 60% (N=110) completed the Spanish version. Of the parents that completed the survey, 67% (N=122) were mothers and 12% (N=22) were fathers. Regardless of who completed the parent surveys, the rater was asked to indicate the highest level of education completed by the mother and father. From these responses, approximately 54% had at most a high school diploma or less, and 32% had some college education or beyond. The primary language spoken at home was English for 33% of parents; Spanish for 48% of parents and 2% did not identify the primary language spoken at home. Approximately 40% of the children of the parents who filled out the surveys were enrolled in a preschool program with a low SES eligibility requirement, which was defined as a family of four earning $20,000/year or less. Additionally, there were (N=102) children who completed the academic

achievement measures used in the current study. Approximately 40% were girls, and 60% were boys. The children were in the pre-kindergarten (N=38) or kindergarten (*N*=64) level at the time of the study.

MEASURES

Parent Involvement. The Parent Involvement Survey (PIS) is a self-report measure completed by parents to assess their current levels of involvement in their children's education. Using the theoretical framework outlined by Coll et al. (2002), the survey aimed to address three main areas of parent involvement: (a) Values in education (items 1, 2, & 5), (b) School-based involvement (items 4 & 6), and (c) Home-based involvement (items 3 & 7). The original survey had a total of seven items (see Appendix A). Items 1-5 were rated on a seven-point scale, but with different response options. Item 1 ranged from 1 = *not important at all* to 7= *very important,* item 2 ranged from 1= *nothing,* 4= *a moderate amount,* to 7 = *a great deal*, items 3-5 ranged from 1= *strongly disagree* to 7= *strongly agree*, and items 6 and 7 varied in relation to the question being asked (see Appendix A). A composite score was calculated by taking the mean of the sum across all seven items. The PIS was available in English and Spanish.

The primary purpose of developing the PIS was to provide schools with a survey that measures parents' actual level of involvement. Coll et al.'s (2002) framework was used because it allowed for the development of a concise list of items, while covering several domains of parent involvement. The questions developed to measure parents' value in education were aimed to assess their perceptions of their role and ability to impact their child's education. For the home- and school-based involvement questions, the goal was to differentiate between behaviors in which parents engage to foster their child's education within the home environment versus the school setting. There was a focus on these domains of parent involvement because they have been commonly cited throughout the relevant literature as the most influential on children's educational outcomes.

Familial Factors. Various familial factors were measured using The Protective Factors Survey (PFS) (2004). The PFS was originally developed by the FRIENDS National Resource Center for Community-Based Child Abuse Prevention Program. The Institute for Educational Research & Public Service (n.d.) conducted a series of factor analyses and found four familial factors that were statistically valid: family functioning and resiliency, social emotional support, concrete support and nurturing and attachment. The reliability of each subscale and a description of each are as follows: (1) Family functioning and resiliency (α=.89), defined as the family's ability to openly share positive and negative experiences, (2) Social emotional support (α=.89) is understood as perceived informal support that helps provide for emotional needs, (3) Concrete support (α=.76) is defined as perceived access to tangible goods and services that help families cope in times of need, and (4) Nurturing and attachment (α=.81) consists of items assessing the emotional bond shared with the parents' child along with a pattern of positive interaction between the parent and child that develops over time (Protective Factors Survey, 2008).

Receptive Vocabulary. Children's receptive vocabulary was measured using the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4). Receptive vocabulary has been found to be a critical early academic skill and is highly related to children's later academic achievement (Dunn & Dunn, 2007). The PPVT-4 scale is a norm-referenced, wide-range instrument that examines the knowledge of an individual's English vocabulary, and is available in two forms to allow for test-retest (Dunn & Dunn, 2007). Developers of the PPVT-4 cite research that shows a strong relationship of vocabulary to reading comprehension (Dunn & Dunn, 2007). The PPVT-4 manual states that vocabulary knowledge is a form of achievement, which represents the words and word meanings an individual has learned through interaction with their environment. The internal consistency coefficient for both forms was .97.

PROCEDURE

The current study was conducted within the context of a broader community-based effort to examine the academic and social-emotional well being of children from birth through Grade 3. The parent surveys were administered by the primary researcher and trained research assistants in the middle of the school year at school-wide functions. Parents had the opportunity to complete the parent surveys before, during, or after the school events. At each administration, a Spanish-speaking research assistant was present to assist the Spanish-speaking parents with any questions or concerns. The PPVT-4 academic assessment was also administered to preschool and kindergarten students at the end of the school year by the primary researcher and trained research assistants. The teachers of the students were notified of the test administrations, and collaborated with the research team. Every assessment administration with each individual child took place in a quiet room free from as many distractions as possible.

DATA ANALYSIS PLAN

Data analysis was conducted in two phases. First, a series of exploratory factor analyses (EFA) were used to examine the factor structure of the seven experimenter-developed items on the PIS. Two separate EFA analyses were conducted to examine the Spanish and English versions of the scale separately. Separate analyses were conducted on the English and Spanish versions because the PIS has not been previously validated in either language. Then, bivariate correlation analyses and a hierarchical multiple regression was conducted to examine the relation between the PIS, students' receptive vocabulary skills, and other familial factors.

Determination of the number of factors to retain was evaluated by using the Kaiser greater than 1 criterion (K1), which retains factors with eigenvalues greater than 1 (Hayton, Allen & Scarpello, 2004). "Goodness of fit" of the EFA models was evaluated by examining multiple indices based upon recommendations in Brown (2006). The following indices were utilized: Chi-square (χ^2), where no significant values are preferred; the comparative fit index (CFI), where values close to .95 or greater indicate good model fit; the root mean square error of approximation (RMSEA), values close to .06 or below and its 90% confidence interval; and the standardized root mean square residual (SRMR), with values close to .08 or below that indicate good model fit between the target model and the observed data.

RESULTS

Factor Structure of the PIS

Two exploratory factor analyses were conducted to examine the English (N=72) and Spanish (N=110) versions of the researcher developed parental involvement items using oblique rotation. Prior to conducting the factor analyses, data was screened to ensure item-level normality. This analysis revealed that two of the items demonstrated potential normality violations for both the English and Spanish versions. However, the maximum likelihood estimation method has been shown to be robust to minor violations of normality (Brown, 2006); therefore, all seven items were retained for these analyses. A preliminary examination of the bivariate correlations among the seven items on the English version revealed that all items were significantly and positively correlated, with item seven demonstrating a slightly lower correlation among the other six items. For the Spanish version, Item 1 and 7 demonstrated nonsignificant correlations among the other five items (see Table 1).

Results from the EFA of the English PIS suggested a two-factor model to explain the observed data. The one-factor solution for the English PIS indicated poor model fit to the observed data, $X^2(14)=29.11$, $p<.01$, RMESA=.12 (90% CI [.06-.18]), CFI=.82, SRMR=.08. While a two-factor model was recommended, the two-factor model was not provided (Muthen & Muthen, 2008) due to the number of iterations exceeded; indicating an issue with convergence possibly due to a poor model (Muthen & Muthen, 2007).

TABLE 1. *Correlation Matrix, Means and Standard Deviations for Measured Variables Used in Parental Involvement Survey*

	1.	2.	3.	4.	5.	6.	7.
1. How important is it for parents to know what goes on in their child's school?		.36**	.51**	.16	-.01	.06	-.05
2. How much do you know about what goes on in your child's school?	.32**		.38**	.39**	.14	.20	-.03
3. I am actively involved in helping my child succeed in school	.25**	.539**		.34**	.37**	.13	.03
4. My family is regularly involved in activities in the community (sports, clubs, religious organizations)	.03	.23	.18		.28**	.19	.03
5. Parents can take actions to help their child reach educational goals	.60**	.35**	.32**	.22		.25*	.01
6. Since the school year has started, about how many times have you talked to your child's teachers?	.22	.41**	.29*	.35**	.33**		.20
7. How often do you read to your child per week?	.25*	.27*	.13	.03	.16	.26*	
Sample Mean English	6.80	5.93	6.55	5.50	6.90	3.86	2.48
Sample *SD* English	.51	1.02	.73	1.65	.30	1.30	.71
Sample Mean Spanish	6.90	5.80	6.26	4.93	6.41	3.18	2.36
Sample *SD* Spanish	.40	1.28	.89	1.61	.96	1.25	.76

Note. English scores are presented on the bottom left and Spanish scores are presented on the top right.
* $p < .05$. ** $p < .01$.

TABLE 2. *Correlation Table of Parent Involvement with Familial Factors.*

	Family Functioning	Social Support	Concrete Support	Nurturing & Attachment	Parent Involvement	PPVT-4
Social Support	.430**					.293**
Concrete Support	.214**	.199**				.444**
Nurturing & Attachment	.496**	.275**	.230**			.370**
Parent Involvement	.251**	.243**	-.026	.386**		.298**
Mean	5.26	5.67	4.32	6.13	6.09	95.44
SD	1.17	1.24	1.15	.75	.66	20.16
N	182	170	169	172	177	102

Note: * $p < .05$. ** $p < .01$.

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Results from the EFA of the Spanish PIS recommended up to a two-factor model for the observed data. The one-factor solution indicated poor model fit to the observed data, X^2 (14)=32.40, p<.00, RMESA=.11 (90% CI [.06-.16]), CFI=.79, SRMR=.08. The two-factor solution indicated adequate model fit to the observed data, X^2 (8)=12.18, p<.14, RMESA=.07 (90% CI [.00-.14]), CFI=.95, SRMR=.05.

The English EFA did not provide a two-factor solution, indicating a possibility of a poor model fit. For the two-factor solution with the Spanish EFA, item 1 constituted a factor by itself and items 2-6 constituted the second factor, however item 7 demonstrated lower loadings compared with items 2-6. After examining the model fit indices of the one-factor model, the factor loadings of the two-factor model and the correlation matrix for the Spanish version, the researcher decided to run a modified EFA. In order to keep the English and Spanish factor structure similar, items 1 and 7 were dropped from the scale for the modified EFA. Both of these items also demonstrated low inter-item correlation with the other five items and the loadings implied that items 2 through 6 would hold as one factor for both the English and Spanish versions of the PIS.

Results from the modified EFA for both the English and Spanish version recommended a one-factor solution. The modified EFA of the English PFS for the one-factor solution indicated adequate model fit to the observed data, X^2 (5)=8.2, p<.15, RMESA=.08 (90% CI [.00-.17]), CFI=.94, SRMR=.05. Similar results derived from the modified EFA of the Spanish PFS for a one-factor solution, indicating adequate model fit to the observed data, X^2 (5)=5.0, p<.41, RMESA=.00 (90% CI [.00-.16]), CFI=1.0, SRMR =.04. As demonstrated, the model fit indices improved significantly after removing item 1 and 7 from the model for both the English and Spanish version of the PFS. A final decision was made to retain items 2 through 6 to constitute a unidimensional parental involvement factor.

Relations between the PIS, Familial Factors, and Children's Receptive Vocabulary

Bivariate correlation analyses were used to examine the relations between parent involvement and the familial factors. The results of these analyses revealed that three of the four familial factors (Family Functioning and Resiliency, Social Support and Nurturing and Attachment) demonstrated a significant relationship with the five-item PIS. The PIS was the most significantly related to Nurturing and Attachment, with Concrete Support being the only familial factor that was not significantly related to the PIS (see Table 2).

A hierarchical multiple regression was used to examine if parent involvement predicted students' receptive vocabulary on the PPVT-4, while controlling for the other four familial factors. Results of the regression indicated that the four familial factors explained 36% of the variance (R^2=.359, F (4, 86)=12.04, p<.000) in students' PPVT-4 scores. Controlling for these factors, the PIS explained an additional 1% of the variance (R^2=.369, F (5, 85)=9.94, p<.000) in children's receptive vocabulary.

DISCUSSION

Parent involvement has consistently been found to be a positive influence to children's academic achievement and development (Benzies & Mychasiuk, 2009; Wooley and Grogon-Kaylor, 2006). However, there is a lack of readily available, brief and efficient parent involvement measures, thus highlighting a need for statistically sound measures that meet both criteria (Coll et al., 2002; Hill et al., 2004). The central goal of the current study was to provide psychometric evidence for a brief researcher-developed parent involvement survey and examine the relationship of parent involvement with familial factors and children's receptive vocabulary, which is a critical academic enabler (Dunn & Dunn, 2007).

Item Development of Parental Involvement Survey

Results of this study clearly showed that the items on the PIS represented a unidimensional parent involvement factor. Item 1 was developed to measure one's values with parental involvement (along with item 2 and 5) (see Appendix A). For item 1, it was found that Spanish-speaking parents were more likely to indicate that it was very important to know what was going on in their child's school, which

resulted in a positively skewed mean score overall. One possible explanation for this result is research have found that Spanish-speaking parents demonstrate high expectations and beliefs for their child's educational attainment, especially throughout the elementary years but have low levels of involvement (Goldenberg et al., 2001; Ryan et al., 2010).

In an attempt to measure home-based parental involvement with item 7 (along with item 3), results found the item results to be normally distributed but the least correlated with the other six items; again, particularly with the Spanish-speaking parents. Item 7 specifically asked parents how often they read to their child per week. One possible explanation for this result is parents without English as their primary language do not read to their child as often as they would like because they do not have access to enough reading material in their primary language (Ryan et al., 2010). Also, parents who completed the survey had children still enrolled in preschool and kindergarten, therefore the need to start reading to their children may not have been as much of a concern (Levine & Trickett, 2000).

Parent Involvement Relation between Familial Factors and Children's Receptive Vocabulary

As predicted, the results indicated that parent involvement was significantly related to Family Functioning and Resiliency, Social Support, and Nurturing and Attachment. Furthermore, it was found that parent involvement and the four familial factors explained a significant amount of variance in the students' academic achievement scores. When examining parent involvement and controlling for the familial factors, it was found that parent involvement only demonstrated a 1% increase in significance. This 1% increase does not seem significant, and it appears that parent involvement has the most influence on student's receptive vocabulary skills when other familial factors are also significant.

IMPLICATIONS FOR SCHOOL PSYCHOLOGISTS

The results of the current study have significant implications for school psychologists. It is important to note that the researcher developed subscale of parental involvement is only one indicator of overall parental involvement. As demonstrated from previous research and theoretical frameworks, there are other areas of involvement that can be useful to address. In order to effectively assess for parental involvement, one should consider the demographic profile of the target population. This should include gathering external information regarding one's education level, gender, role in the family, level of access to community resources, SES, language status, ethnicity, minority status and migrant/transient status. Additional characteristics not listed as determined by the assessor may be necessary and encouraged if it would provide a more holistic understanding of the parent. Once the demographic profile of the parent is established, it is important to identify culturally appropriate measures/questions used to assess for parental involvement and other parenting factors useful to understand in relation to the goal at hand (in the case of a school psychologist, the child's social/emotional and academic success).

A final important implication is that the definition of parental involvement can depend upon the context. The context in which parental involvement was examined in the current study was related to parental values, school- and home-based involvement. Additionally, perhaps the way we understand parental involvement implies the key factor contributing to students' success lies within the parents. There may be a need to consider change within several systems, specifically with the school and the community in which the parents reside (Ryan et al., 2010). The strongest and most consistent predictor of parental involvement both at school and home are the school programs and teacher practices that encourage parental involvement (Michigan Department of Education, 2001). A few suggestions include: increase parents' beliefs about their significant role in their child's learning (Drummond & Stipek, 2004) and provide culturally sensitive services including language instruction for parents or interpreters (Farver et al., 2006). Ultimately, it is important to consider the various factors (such as cultural factors) that may influence our understanding of parental involvement.

LIMITATIONS

Results from the current study provide preliminary evidence supporting the psychometric functioning of the PIS. However, there were several limitations to the current study that deserve mention. One of the primary limitations relates to the generalizability of the results. First, the education level of the parents also consisted primarily of a high school education or less, and more mothers than fathers filled out the parent survey. Therefore, the results may not generalize to other language status, education level of parents and gender of parent. There is also the need to differentiate between *culture* and language status. While one's language status may imply the culture of the individual, this is not necessarily a significant relationship. Additionally, measurement invariance tests were not conducted between the Spanish- and English version of the PIS. This would have provided further evidence if the measure was invariant across the two groups, and measuring the same construct. Parent involvement has been found to imply different meanings particularly for Spanish-speaking families (Goldenberg et al., 2001; Ortiz, 2004; Zayas & Solari, 1994). However, we were limited in our sample size and could not conduct this statistical analysis, which is one recommendation for future studies. Lastly, in using a data reduction (factor analysis) design, it is likely the researcher could have determined significant loadings of items on the factor parental involvement but another researcher may have differing opinions. Finally, future research is needed to examine the use of the research developed parental involvement items across various settings, populations and demographic profiles which address the areas of concern discussed previously.

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Appendix A

Parent Involvement Survey

Instructions: Please *circle* the number that best describes how much you agree or disagree with the statement.

	Not Important at All			Somewhat Important			Very Important
1. How important is it for parents to know what goes on in their child's school?	1	2	3	4	5	6	7

	Nothing			A Moderate Amount			A Great Deal
2. How much do you know about what goes on in your child's school?	1	2	3	4	5	6	7

	Strongly Disagree	Mostly disagree	Slightly disagree	Neutral	Slightly Agree	Mostly Agree	Strongly Agree
3. I am actively involved in helping my child succeed in school	1	2	3	4	5	6	7
4. My family is regularly involved in activities in the community (sports, clubs, religious organizations)	1	2	3	4	5	6	7
5. Parents can take actions to help their child reach educational goals	1	2	3	4	5	6	7

6. Since the school year has started, about how many times have you talked to your child's teachers?	None	1-2	3-5	5-7	7-9	10 +
7. How often do you read to your child per week?	Never	1-2 days	3-6 days	Everyday		

TOC

A Comprehensive Model for Promoting Resiliency and Preventing Violence in Schools

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Implementing violence prevention programs has become a priority for schools; however, most programs used for this purpose are limited in the skills they teach. In this study, two different resiliency building/violence prevention models were evaluated to assess their effectiveness at preventing violent and maladaptive behaviors in youth. Data from the California Healthy Kids Survey (CHKS) was used to compare a narrow versus a comprehensive/ecological approach for resiliency building. Structural equation modeling was employed to test the preventive impact of both resiliency building approaches. The results showed that the comprehensive/ecological approach is much stronger than the traditional narrow approach for preventing violent and maladaptive behaviors. Implications for program development and implementation are discussed.

KEYWORDS: comprehensive/ecological interventions; resiliency building models; school-based resiliency; resiliency models; models for preventing maladaptive behaviors

*Authors' note. *The last three authors are listed in alphabetical order indicating equal contributions to this manuscript. All authors would like to express our most sincere gratitude to Dr. George Marcoulides for the valuable guidance and feedback he provided during each step of this study. We would also like to thank Dr. Misaki Natsuaki for her comments on this article.*

Many children in today's society face substantial difficulties that hinder their development and success. Research from the late 1990s and early 2000s suggested that over 20% of our youth (those enrolled in K-12 schools) suffer from a serious mental health disorder, and only 30% of those with greater needs receive some type of mental health service (Costello & Angold, 2000; Hoagwood & Erwin, 1997). Many of these children go unnoticed until (or unless) they become perpetrators of violence or engage in maladaptive behaviors; such as delinquency, drug use, and/or premature sexual activity. Violent and maladaptive behaviors in youth represent a serious problem in our society. Over 86% of schools report to experience violent acts by students on their K-12 campuses [National Center for Education Statistics (NCES), 2010]. The percentage is even higher for middle and high schools (NCES, 2010). School mental health care providers have known for decades that more needs to be done to effectively meet the needs of our youth and minimize the number of violent and maladaptive behaviors displayed in schools.

Schools are viewed as the main gate to our society, where most of our social norms are taught and reinforced. For this reason, the federal government and other public health officials have turned to public

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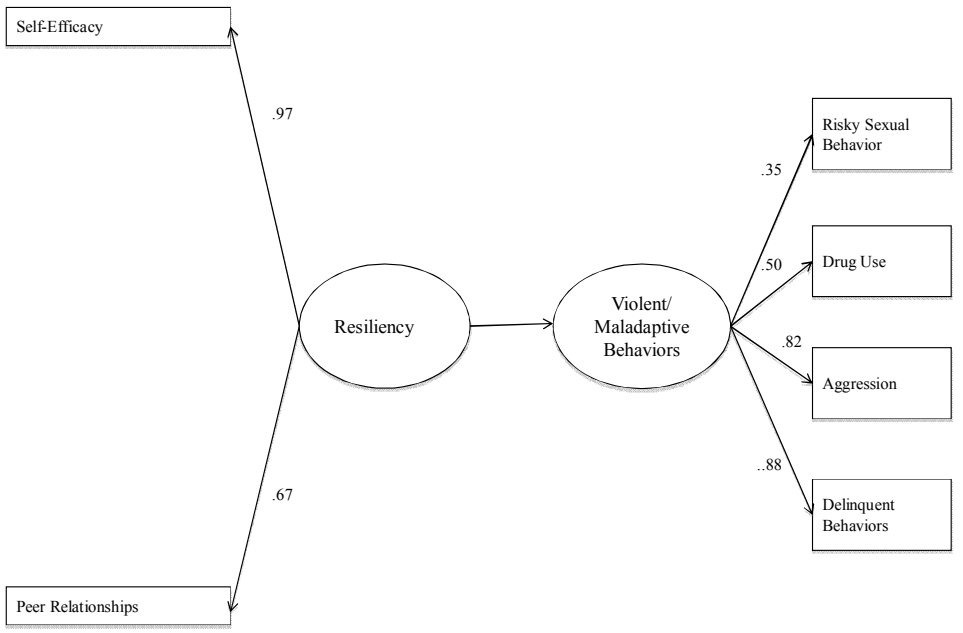
schools to facilitate the implementation of violence prevention programs and efforts [Department of Human Health Services (DHHS), 2001; O'Connell, Boat, & Warner, 2009]. Data obtained by NCSE for the 2005-2006 school year shows that 87% of public schools are indeed implementing some type of violence prevention program (NCES, 2006), most of which seem to focus on teaching basic social skills and behavioral norms. However, based on the national data presented by the NCES between 2000 and 2010, these programs are not necessarily yielding the desired outcomes (i.e., violence-free schools). The information provided in the NCES and the Collaborative for Academic, Social, and Emotional Learning (CASEL) websites suggests that most of the programs currently employed in schools are narrowly focused, as they only seem to intervene on the target child's individual problem behaviors. What is lacking from school-based prevention programs? What else needs to be done to reduce negative outcomes for students?

Focusing on teaching basic behavioral norms and social skills (e.g., basic problem solving, empathy training, and anger management strategies) is not enough for children who are at risk for violent and/or maladaptive behaviors. Although the content covered in these preventive programs is important, it is narrowly focused as it does not always provide children with comprehensive mechanisms for coping with adverse situations and environments (Hahn, Hall, Rayens, Myers, & Bonnel, 2007; Kratochwill, McDonald, Levin, Scale, Coover, 2009; Nation, Crusto, Wandersman, et al., 2003). Figure 1 illustrates the current narrow-based model that aims to reduce violent or maladaptive behaviors. Comprehensive programs that target all essential individual and contextual factors are primordial in the reduction of problem behavior, and resiliency building of aggressive at-risk children (Lochman & Wells, 2003; Walker, Stiller, Severson, Feil, & Golly, 1998). For the purpose of this study, "comprehensive/ecological programs" are defined as those school-based interventions that target multiple systems within a child's life (i.e. self, family, peers, teachers, community, etc.). The following section provides an overview of the current literature that supports the conceptualization of resiliency building as a comprehensive/ecological construct.

FIGURE 1. *Current school-based model*

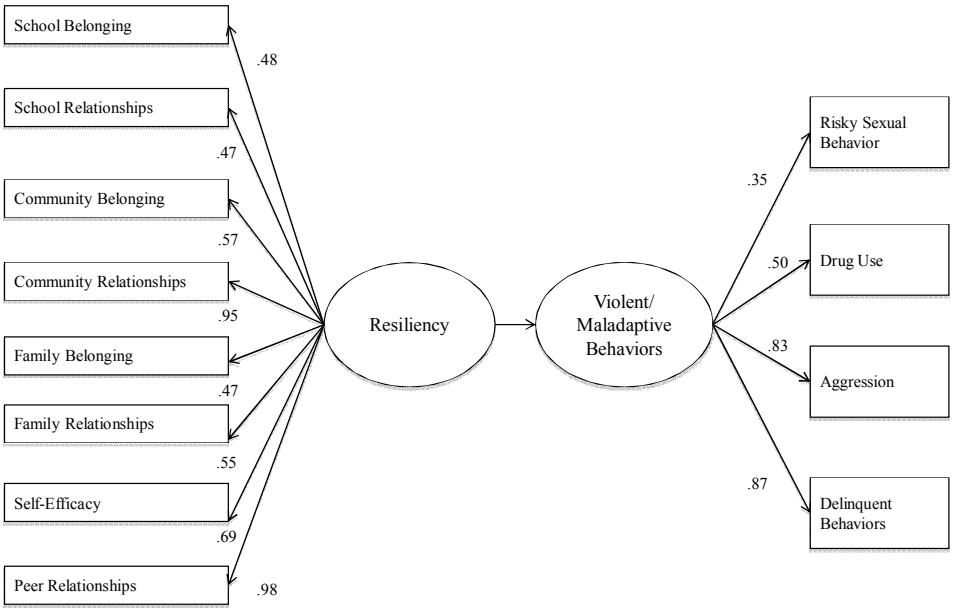


Resiliency as a Comprehensive/Ecological Construct

Masten (2001) and Doll, Zucker, and Brehm (2004) are among the researchers who have defined resiliency as an *ecological* construct. They have stated that a child's environment (i.e., parents, teachers, community members, and peers) is heavily responsible for teaching him/her to be resilient and cope with adverse situations. Based on this theory, children cannot be expected to become resilient by just teaching them a few skills such as self-efficacy and basic social skills/norms. A more comprehensive approach is needed if students are to successfully demonstrate adaptive coping and social-emotional success in today's society.

Based on the idea that resiliency is fostered by one's environment, we propose a comprehensive and ecological model for resiliency building. The proposed model is composed of eight dimensions, with the first one focusing on developing strong/positive *self-efficacy skills*, the second one of *peer relationships*, and the remaining six on *family relationships*, *family belonging*, *school relationships*, *school belonging*, *community relationships,* and *community belonging* (see Figure 2). This model is also informed by Bronfenbrenner's (1979) ecological model for human development and Sameroff's (2000) Transactional model. Our model illustrates how these dimensions, besides being indicators of resiliency, also serve as preventative predictors of violent and maladaptive behaviors. The following section describes the literature that supports the inclusion of each of these dimensions into our proposed model for resiliency building.

FIGURE 2. *Proposed Comprehensive/Ecological Model for Promoting Resiliency*



PROPOSED MODEL

Individual Characteristics

Self-Efficacy, or the ability to believe that one can carry out a particular behavior (Bandura, 1977), has been widely studied as an indicator of resiliency. Research has shown that children who are resilient display behaviors related to self-efficacy such as flexibility, high self-esteem, self-motivation, independence, positive outlook, ability to learn, sense of competence, humor, problem solving skills, emotional stability, decision making skills, social competence, sense of control of one's future, religion, and service mindedness, all of which are related to resiliency (Edwards et al., 2007; Evans et al., 2010; Henderson & Milstein, 1998; Hjemdal, Fribory, Stiles, Martinussen, & Rosenvinge, 2006). As it could be imagined, this construct strongly predicts the ability of a child to make the best of his/her environment by

accessing his/her own cognitive, behavioral, and contextual resources to engage in pro-social behaviors that can help him/her overcome a stressful situation.

Environmental/Microsystemic Factors

Peer relationships, or the time spent communicating and interacting with same-age peers (Mikami, Szwedo, Allen, Evans, & Hare, 2010), has also been identified as a strong predictor of resiliency. This construct has been widely targeted in school-based programs through social skills and peer mentoring interventions (NCES, 2006). Being well accepted by peers, and having positive interactions and peers that engage in positive activities have been identified as indicators of resiliency (Benzies & Mychasiuk, 2009; Kauffman, Grunebaum, Cohler, & Gamer, 1979). Given that children spend a considerable amount of time socializing with their peers, and are constantly looking for their approval, the type of relationships they have with their peers are perceived to be extremely valuable in their development and acquisition of resiliency skills (Parsai, Voisine, Marsiglia, Kulis, & Nieri, 2008). Therefore, it is believed that schools that promote pro-social peer relationships will see a lower number of violent behaviors in schools.

Family relationships are often defined as both the parent/caregiver-child relationship and general relationships/positive frequent interactions within the family (Benzies & Mychasiuk, 2009; Evans et al., 2010; Garza, Reyes, & Trueba, 2004). Research has shown that family relationships often function as a protective factor for youth (Fergusson & Lynskey, 1996; Perkins & Jones, 2004; Waller et al., 2003). In terms of the parent-child relationship, positive parental monitoring, parent-child communication, and parent-child attachment have been associated with increased adaptive behavior in adolescents (Fergusson & Lynskey, 1996; Marsiglia, 2002; Perkins & Jones, 2004). Teaching children the value of having an open communication and relationship with a family member could positively impact the resiliency skills of the most at-risk children (Masten, 2001). Lochman and Wells (2004) found that parents that received a school-based training on how to establish a better relationship with their aggressive children had better outcomes than participants whose parents did not receive such training.

Family belonging, for the purpose of this study, is defined as feeling part of the entire family system. Although some children may have a strong connection with a particular family member, they might not feel part of the entire family system due to certain family conflicts. Increased levels of family support, cohesion, affect, bonding, stability, and routines have been associated with increased adaptive behavior in adolescents (Benzies & Mychasiuk, 2009; Fergusson & Lynskey, 1996; Grossman et al., 1992; Perkins & Jones, 2004). Teaching children and families the importance of sense of belonging could be a valuable step toward building healthy families that could more effectively promote resiliency in children. Therefore, it is theorized that having a strong bond with family members will increase a child's likelihood to seek support from that individual when needed.

School relationships, for the purposes of this study, is defined as the perceived support from at least one school staff member. Research has suggested that perceived support from school staff is one of the most important environmental factors associated with school connectedness or school belonging (Blum & Libbey, 2004) and contributes to decreased engagement in risky behaviors (McNeely & Falci, 2004). Strong/positive school relationships have been shown to serve as a protective factor that fosters resiliency in at-risk youth (Bernard, 1992; Garbarino, 1995; Watkins, 2002). Although much of the literature on school relationships centers around student and teacher relationships it is important to note that other members of the school community, such as bus drivers, office staff, and janitors, can also be just as influential in promoting resiliency (Reed-Victor & Pelco, 1999). When students are aware that teachers or other school staff offer attention to them, show interest, provide emotional support, and devote time, students feel supported and are more likely to be actively, and pro-socially, engaged in school (CDC, 2009). Many schools are in fact now assigning a staff member as a "mentor" to students at-risk in order to promote resiliency in those students (NCES, 2006).

School belonging, often labeled as school connectedness, is characterized by academic engagement, having a sense of belonging, fairness in discipline practices, participation in extracurricular activities,

liking school, having a student voice, positive peer relationships, feeling safe, and perceiving that teachers are supportive and caring (CDC, 2009; Klem & Connell, 2004; Libbey, 2004). Research has shown that higher feelings of school belonging contribute to higher academic performance, reduced maladaptive/risky behaviors including substance use (Bernat & Resnick, 2009; CDC, 2009; Goodenow, 1993; Hawkins et al, 1992), and stronger emotional self-regulation (Resnick, Bearman, & Blum, 1997). Schools could easily promote a higher sense of school belonging by establishing ways students can get more involved in extracurricular activities (Brown & Evans, 2002). This will not only allow students to feel a higher sense of belonging but will also provide them with access to other school staff and peers that can serve as resources for coping with adverse situations.

Community relationships are defined as the support a child perceives from an individual outside his/her family and/or school (Benzies & Mychasiuk, 2009; Evans et al., 2010; Garza et al., 2004; Henderson & Milstein, 1998). Community members may include, but not limited to: ministers, teachers, and neighbors (Werner, 1993) who form a supportive network by providing physical, financial, emotional, spiritual, and social supports (Kelly, Berman-Rossi, & Palombo, 2001). Characteristics of community relationships that foster resiliency include trust, warmth, care, and high standards (Krovetz, 1999; Werner, 1993). Studies have shown that having a supportive relationship with a community member has served as a protective factor for members of various ethnic groups (Henderson & Milstein, 1998; Perkins & Jones, 2004; Werner, 1993). Schools can serve as facilitators of community relationships by connecting families of at-risk children with local community agencies that can provide mentoring services.

Community belonging is the final component of the proposed model of resiliency. Although various studies have examined community relationships, there is limited research in the area of community belonging. While a clear definition of community belonging is still developing in the literature, it could be defined as a sense of membership toward a group (Sherrod, Flanagan, & Youniss, 2002). Some examples of community belonging include continuous opportunities for participation within a society, community service, and social responsibility (Evans et al., 2010; Krovetz, 1999; Sherrod et al., 2002). Researchers identified community involvement, a characteristic of community belonging, as a strong predictor of resiliency (Benzies & Mychasiuk, 2009). Many at-risk children, especially those from ethnic minority backgrounds, have reported feeling alienated from their communities. Being alienated from one's social world and networks has a negative impact in children's resiliency and ability to thrive (Olsen, 1997). Schools could collaborate with local agencies to make sure that after school programs, extracurricular activities, and other needed services (e.g., sexual education) are available to students.

The factors previously discussed are clearly vital indicators and promoters of resiliency. The authors theorized that students who have access and opportunities for building strong connections to individuals, groups, and communities will be less likely to engage in violent and maladaptive behaviors. The remaining sections of this paper summarize the procedures followed to provide empirical validation for the ecological resiliency model described above.

Research Questions

Secondary data analyses were conducted using the database from the California Healthy Kids Survey 2007-2009 to answer the following research questions: (1) Which model better defines resiliency, our proposed comprehensive model or the one most often implemented in schools?; (2) Which model better prevents maladaptive behavior in children? Figure 1 illustrates the traditional/current model often used in school-based interventions, which is perceived to only focus on improving self-efficacy and peer relationships. Figure 2 illustrates the comprehensive model of resiliency building.

METHOD

Participants

Secondary data analysis was used for this study. All the responses analyzed came from students who answered the Resilience and Youth Development Module (RYDM) subscale and selected items of anti-social behavior (e.g. reports of using drugs, getting into a physical fight, getting in trouble with the law,

getting in trouble in school, etc) of the California Healthy Kids Survey (CHKS). The data was collected by the California Department of Education via West Ed, in the 2005 through 2007 academic school years and included 667,610 cases. All local education agencies that receive Title IV funds are mandated to administer the CHKS at least once every two years. Furthermore, the CHKS meets the student data collection requirements in No Child Left Behind (NCLB). All participating schools were required to obtain either active or passive parental consent and inform parents and students that participation was voluntary. The comprehensive CHKS examines students' self-reports of resiliency, drug and substance use, antisocial behavior, victimization, and other social/health problems students might experience.

The entire CHKS sample from the 2005 and 2007 school years were used for this study. The sample consisted of 667,610 adolescents in grades 7, 9, and 11. All students were from California secondary schools, including nontraditional, alternative, and continuation schools. Specifically, 36.5% were in 7th grade, 32.8% were in 9th grade, 26.8% were in 11th grade, and 3.9% were enrolled in continuation schools. Furthermore, 66% of the sample identified themselves as ethnic minorities. Specifically, the ethnicities identified were Caucasian (26.8%, n=177,670), Hispanic (35.5%, n=235,261), African American (4.8%, n=31,802), Asian (12%, n=79,489), Native Americans (1.3%, n=8,560), Mixed (12.1%, n=79,940), and Other (7.5%, n=49,779). Data from participants who reported to be of mixed or other ethnic background were excluded from the current study's data analysis.

Procedures

Permission to utilize this database was obtained by the first author from WestEd. According to WestEd, which was contracted to oversee the collection of these data, all participating school districts were responsible for training staff, obtaining parental consent, and administrating the survey. Data collected from each district were entered and initially analyzed by WestEd researchers, and then synthesized into reports for school districts and the public. The authors of the current study received permission from WestEd to analyze the raw data.

Measure

The CHKS is an anonymous and confidential self-report survey on risky social, behavioral, and health behaviors and resiliency administered to students in grades 4 through 12. The CHKS is supported by WestEd and Duerr Evaluation Resources and is funded by the California Department of Education (CDE). The CHKS was developed with the assistance of an expert panel of researchers, prevention practitioners, health experts, policy makers, and school community members. Items from the state-mandated California Student Survey as well as the Center for Disease Control and Prevention Youth Risk Behavior Survey were incorporated into the CHKS. Other items were included based on recommendations from the expert panel and CHKS advisory committee as well, for the purposes of adequately assessing areas that were required by NCLB. CHKS's data-based process allows schools to utilize the results to obtain grant funding for intervention programs, professional development training for staff, communication with community based programs and parents on student progress and outcomes, and to self-evaluate districts and sites.

There are two versions of the CHKS. The first version is for grades 4 through 6 and the second version is for grades 7 through 12. The current study examined data from grades 7 through 12. The CHKS is comprised of the Required Core Module (which collects a general assessment of health risks) and the Resilience and Youth Development Module (RYDM) (which measures positive environmental and internal assets such as meaningful and pro-social bonding to community, school, family, and peers, as well as, self-efficacy and problem-solving skills) [Hanson & Kim, 2007]. A 5-point Likert scale is used in the RYDM subscale. Only 47 of the 56 RYMD items were used for our analysis. Only items described one of the factors of the proposed model, and were not repetitive, were utilized for the final analysis. Cronbach's alpha for the overall sample on the 47 items used for this study was .95. Table 1 provides example items for each of the eight proposed dimensions.

TABLE 1. *Sample items in proposed factors*

	Sample items
Self-efficacy	"I know where to go for help with a problem," " I can do most things if I try"
Peer relationships	"I have a friend my age who talks to me about my problems," "I have a friend my age who cares about me"
Family relationships	"a parent or adult in my home talks to me about my problems," "a parent or adult in my home believes I will be a success"
Family belonging	"at home, I do fun things or go fun places with my parents or other adults," "at home I help make decisions"
School relationships	"at my school there is a teacher or adult who really cares about me," "at school there is a teacher or adult who notices when I'm not there"
School Belonging	"I feel close to people at this school," " I feel part of this school"
Community relationship	"there's an adult outside my home or school who really cares about me," "there is an adult outside my home or school who notices when I'm upset about something"
Community belonging	"I am part of clubs, sport teams, church/temple, or other group outside of my home or school," "I help other people outside my home and school"

RESULTS

The present analysis used a structural equation modeling approach. Specifically, we compared two structural regression models: (1) Figure 1 depicts the school's traditional/narrowly focused model that has been widely used in contemporary school interventions and (2) Figure 2 depicts the proposed comprehensive/ecological model of resiliency and violent/maladaptive behavior. The measurement portion of the models included the latent variables resiliency and violent/maladaptive behaviors. As previously described, in the comprehensive/ecological model, resiliency was measured with eight indicators including school belonging, school relationships, community belonging, community relationships, family belonging, family relationships, and peer relationships. Violent/Maladaptive behavior was measured using four indicators including risky sexual behaviors, drug use, aggression, and delinquent behavior. The structural portion of the models proposed that resiliency negatively predicted (i.e., protected against) violent/maladaptive behavior.

To evaluate model fit, four indices were used including the chi-squared goodness of fit test, the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the Akaike information criterion (AIC). To support model fit, the following is needed: 1) a non-significant chi-squared goodness of fit value, 2) a CFI>.90, 3) an RMSEA below 0.05 with the left endpoint of its 90% confidence interval being less than 0.05, and 4) a low value on the AIC. Models with higher CFI values are better than models with lower CFI values. Moreover, models with lower RMSEA and AIC values are better than models with higher RMSEA and AIC values. The chi-squared was not used for the present analysis because it is extremely sensitive to sample size (Raykov & Marcoulides, 2006).

Table 2 shows the results from the proposed model and the school's traditional/current model, respectively. The proposed model yielded a CFI=.75, an RMSEA=.18 (.17; .18), and an AIC=33298715.15. The traditional school's model yielded a CFI=.25, RMSEA=.29 (.29; .29), and an AIC=35099827.91. Based on the guidelines outlined above, the fit of the proposed model deteriorated when using the school's traditional model of resiliency and violent/maladaptive behavior. Although the proposed model does not adhere strictly to the guidelines outlined above, the large sample size compensates for the slightly lower values. For example, the RMSEA value (.18) indicates that 82% of the variance is explained in 524,322 students. The analysis suggests that the proposed comprehensive and ecological model is a better model of resiliency and antisocial behavior for the entire sample.

TABLE 2. *Fit Indices for Proposed Model of Resiliency and Antisocial Behaviors*

Index	Proposed Model	School's Model
CFI	.75	.25
RMSEA	.18	.29
RMSEA CI	.17; .18	.29; .29
AIC	33298715.15	35099827.91

Note: CFI= Comparative fit index. RMSEA= Root mean square error of approximation. CI= Confidence Interval. AIC= Akaike information criterion.

DISCUSSION

The main purpose of this study was to validate the proposed comprehensive/ecological model for resiliency building and prevention of violent and maladaptive behavior. The present analysis revealed that the traditional/current approach most schools employ for resiliency building and violence prevention is not as effective as a comprehensive/ecological model at defining resiliency and preventing violent/maladaptive behaviors. The results of our analysis suggest that schools should adopt a comprehensive and ecological approach that focuses on strengthening students' self-efficacy, relationships, and sense of belonging at school, at home, and in the their communities.

The comprehensive and ecological approach we proposed, and validated in this study, is consistent with the current literature that documents the importance of the self, family, school, community, and peers in the development of resiliency (Short & Russell-Mayhew, 2009). According to Brooks (2006), risk and protective factors can be identified at each level of a child's ecology (e.g., home, community, and school); therefore, a promising program should address each of those systems in a comprehensive manner. In order to achieve the proposed outreach to children and their surroundings, collaboration across ecologies/systems is essential. Although the current literature already suggests the need for home-school collaboration in resiliency building programming, very few schools are able to implement successful home-school collaboration programs. Many times schools report trying to establish programs but that the parents who need it the most are often unavailable, unreachable, or just unengaged (Bemak & Cornely, 2002). For instances like these, schools could benefit greatly from their community agencies/organizations that might already have strong ties with families and parents and have the resources to meet their needs (Elizondo, Feske, Edgull, &Walsh, 2003). Many times the parents are unavailable because they are marginalized from their communities (i.e., are unemployed, do not speak English, do not have access to health care, unfamiliar with mainstream culture, etc). Accessing extra support from their communities through direct school referrals would not only make parents more available to schools but also more trusting. Communities are great venues for building an alliance with families and parents (Evans et al., 2010).

According to the results of our study, schools should continue to enhance students' self-efficacy by focusing on teaching students social-emotional learning skills, or using programs that focus on self-awareness and self-esteem building (Frey, Nolen, Edstron, & Hirschsten, 2005); in addition to focusing on family/school partnerships [i.e., family belonging and family relationships (Christenson & Sheridan, 2001)] in teaching parents how to increase involvement in the social-emotional, behavioral, and academic development of their child.

Schools should make considerable efforts into making sure their students feel a strong sense of school belonging and have positive relationships with different adults within their building. Re-structuring of extracurricular activities, instituting other after school programs, and implement check-in and check-out systems where at-risk youth could check in every morning to be reminded of goals and check out every day to celebrate success or re-direct for the following day. All of these programs can be adapted to ensure

they promote these two factors. In order to promote community belonging and community relationships, schools should work on establishing strong collaborations with local agencies that might also be working on providing services for at-risk students such as the Boy and Girls club, Boys and Girls Scouts, YMCA, or Big Brothers/Sisters.

School administrators considering transitioning from a traditional model to a comprehensive/ecological model are encouraged to utilize their school psychologists as leaders for such transition. School psychologists are trained on ecological developmental theories, social-emotional and behavioral interventions. This knowledge in addition to their consultation skills enables them to provide direct services to students and families. School psychologists could also train and consult with teachers and other educators to facilitate these efforts.

LIMITATIONS AND FUTURE RESEARCH

Although there were important findings in this study, several limitations were identified. First, the data analyzed were not collected by the authors, but retrieved from WestEd which forced us to make the existing items fit our proposed model/theory. Second, only youth self-report was used to test our proposed model. Youth self-report could be considered a limitation because many children have been found to provide inaccurate/unreliable reports of their antisocial behavior (Merrell, 2008). Third, the present study only addressed negative social behavioral outcomes (i.e., violent/maladaptive behaviors). Future research should examine the relationship between resiliency and negative social-emotional (i.e, depression and anxiety) outcomes. The small number of schools that administered the social-emotional items (such as reports of depression and victimization) limited our ability to include social-emotional issues in our model. Future research should also focus on examining the fit of the proposed model across members of different ethnic groups.

CONCLUSION

The present study shows the importance for implementing a comprehensive/ecological approach for resiliency building. Our results show that ecologically focused resiliency building programs will be more effective at promoting resiliency and preventing violent/maladaptive behaviors. Schools must continue in supporting the self and peer relations through the implementation of social-emotional learning or social skills programs, but must also get creative in ensuring that they promote strong family, school, and community relationships. These relationships must make each child feel that he/she belong to such networks and have many individuals who will help him/her to overcome social problems. The efforts schools must make to be more efficient at promoting resiliency among our youth is immense, but the promise of a more resilient/violence free society will make it all worth it.

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The School Psychologist's Primer on Childhood Depression: A Review of Research Regarding Epidemiology, Etiology, Assessment, and Treatment

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The purpose of this article is to provide school psychologists with a synthesis of important information regarding the epidemiology, etiology, assessment, and treatment of childhood depression. A review of the recent research and relevant literature is summarized reflecting the contemporary knowledge regarding depression during childhood and adolescence. In addition, reputable websites are included for professionals who use the internet as a resource. This article emphasizes the importance of understanding the multidimensional etiology of depression. With regard to depression, a developmental perspective emphasizes how these conditions emerge, considering the dynamic interplay of sociocultural, biogenetic, personality, family, emotional, cognitive and behavioral domains. School psychologists are in a critical position to facilitate the academic achievement and healthy development of youth who are suffering from depression. This article provides school psychologists with the foundation, knowledge and resources that are needed to be the most effective advocates and collaborators for students and families facing the challenges of depression.

KEYWORDS: childhood depression, epidemiology, etiology, assessment, treatment, intervention, developmental psychopathology

The recent increase in prevalence of childhood depression highlights that depression is a debilitating public health burden that continually impacts individuals and families, with millions of children and adolescents facing the challenges of depression at school each day (Gotlib & Hammen, 2002; National Institute of Mental Health [NIMH], 2008). Research reveals that childhood depression is associated with subsequent maladjustment and challenges later in life (Mash & Barkley, 2003). Thus, there is a clear need for further understanding childhood depression among education professionals, as well as further awareness of support strategies for children and adolescents (Whittington, Kendall, Fonagy, Cottrell, Cotgrove, & Boddington, 2004).

As it is important to establish an understanding of the contemporary conceptual foundations underlying, the following begins with a brief summary of the transactional-ecological developmental perspective. Next, this article delineates contemporary empirical insights related to the epidemiology, etiology, assessment, and treatment of childhood depression, with particular consideration of information relevant to school-based professionals. Finally, reputable and informative Internet resources are described to facilitate access to additional online resources.

Contemporary Transactional-Ecological Developmental Perspective

It is important to begin with a discussion of the conceptual foundation underlying the contemporary understanding of childhood depression. Broadly, a developmental perspective provides a framework to understand the range of processes and mechanisms that underlie how and why psychopathology emerges in children, how it changes over time, and how it is influenced by developmental capacities and the contexts in which development occurs (Cicchetti & Richters, 1993).

As a school psychologist, it is vital to take into account the array of factors that promote positive development, including but not limited to psychological, physiological, and social factors (Stormshak

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& Dishion, 2002); there is no sole determinant of positive outcomes. The transactional-ecological developmental perspective elucidates the dynamic processes by which children and contexts shape each other (Sameroff, 2009). This developmental perspective emphasizes the "progressive, mutual accommodation between an active, growing human being and the changing settings in which the developing person lives" (Bronfenbrenner, 1979, p. 21) and the interplay with processes in the individual's context over time (Sameroff, 2009). Throughout the lifespan, development, whether negative or positive, can be understood by examining the impact of interdependent contextual influences. When there is discord at any level of development or transactions are non-normative, psychopathology may result and intervention may be necessary (Sameroff & Fiese, 2000).

Specifically, this model posits that all human development is shaped by three primary levels: the (a) *genotype* (i.e., genetic and biochemical makeup), (b) *phenotype* (i.e., phenomenological experience and current developmental expressions), and (c) *environtype* (i.e., multilevel nested environments; Sameroff, 2000). No particular constellation of personal or environmental variables determines behaviors among youth; rather, individual, families, and contextual have dynamic and reciprocal influences over time, forming interactive feedback loops throughout time that fuel human development and ultimately manifest in maladaptive behaviors (Sameroff, 2009).

Development and Psychopathology

Psychopathology is a complex phenomenon. Messick (1983) argues psychopathology must consider three sets of contextual variables: (1) the unique child characteristics, predispositions and traits that influence the course of development; (2) the interrelatedness of various backgrounds (e.g., family, peer, classroom teacher, school, community, culture); and (3) an individual is a dynamic entity that is continuously changing. The notion that reciprocal transactions between the developing child and the multiple social and environmental contexts in which development occurs has become increasingly relevant to research and practice (Cicchetti & Aber, 1998).

Viewing depression through this developmental lens necessitates consideration of both the child and environment over time (Cicchetti & Toth, 1998). Research reveals that there are developmental differences in the expression of depression across the lifespan (Mash & Barkley, 2003). Most specifically, symptoms are typically age-specific, and several symptoms are particularly salient during specific developmental periods. Furthermore, from a developmental perspective, depression during childhood may be particularly deleterious; the cumulative impact of chronic psychological and social stress could alter biological processes and drastically affect healthy adjustment. This highlights the need for prevention and early intervention efforts.

Epidemiology and Prevalence

Mood disorders are among the most prevalent and debilitating psychiatric disorders plaguing the United States today (Hollon, Thase, & Markowitz, 2002). Depression, the most common mood disorder and one of the most frequent psychiatric disorders, is the number one cause of disability and a leading cause of suicide worldwide (Gotlib & Hammen, 2002; Hollon et al., 2002). Over the last decade, the rate of depression in the general population has increased substantially (Gotlib & Hammen, 2002). In fact, due to the elevated rate of depression worldwide, the World Health Organization Global Burden of Disease Study ranked it as the single most burdensome disease in the world (World Health Organization [WHO], 2008).

Depression affects approximately 15 million adults in the United States, about 7% of the population, every year (NIMH, 2011). Only in recent years has sound epidemiological surveys of childhood depression been utilized (Mash & Barkley, 2003). Still, few reports include both children and adolescents as separate entities.

Depression is common in childhood and adolescence (Vannest, Reynolds, & Kamphaus, 2008). Approximately 8-10% of school-aged children have depression, and it is the leading cause for suicide in adolescents. Epidemiological data suggest that the average age of onset has been decreasing in

recent years (APA, 2000). In fact, approximately 1% of preschool-aged children are showing signs and symptoms (Vannest et al., 2008). In 2002, researchers found a 23% rate increase in depression among children (Harvard Medical School, 2002). Gender differences have been reported regarding depressive diagnoses and symptoms (Mash & Barkley, 2003). Whereas childhood rates are balanced across genders, adolescent females have been found to have higher (roughly 2-1) rates of depression than their male peers. Theories addressing why the prevalence among females is higher have typically focused on hormonal changes, stress and coping processes, changing social roles, and interactions among these variables. In a meta-analysis, Maag and Reid (2002) found that children with learning disabilities have significantly higher depression scores than students without learning disabilities, but not necessarily to the extent of clinical depression. Furthermore, the association of socioeconomic status (SES) and depression has been well-documented. It has been found that low income is associated with significantly more depressive disorders in children (Costello et al.,1996).

The symptoms and onset of Major Depressive Disorder (MDD) may begin at any age and depression is generally a perpetual and recurrent disorder. Some individuals have isolated episodes that are separated by many years without any depressive symptoms, whereas others experience multiple episodes in clusters. Evidence suggests that the number of prior episodes predicts the likelihood of recurrence. Approximately 50-60% of individuals who have a Major Depressive Episode will have a second episode. There is a 70% chance that individuals with two episodes will have a third, and a 90% chance that individuals with three episodes will have a fourth. Follow-up naturalistic studies suggest that a year after the diagnosis of a Major Depressive Episode, 40% of individuals still have symptoms that are characterized as being severe.

Etiology, Symptomatology, and Course

The increasing prevalence of depression raises the question of etiology. Three major areas seem to contribute to the cause of depression: biological factors, psychological factors, and environmental factors (Watts & Markham, 2005). In an attempt to identify causal factors, the synthesis and interaction of specific biological and psychological vulnerabilities and stressful life events have been examined.

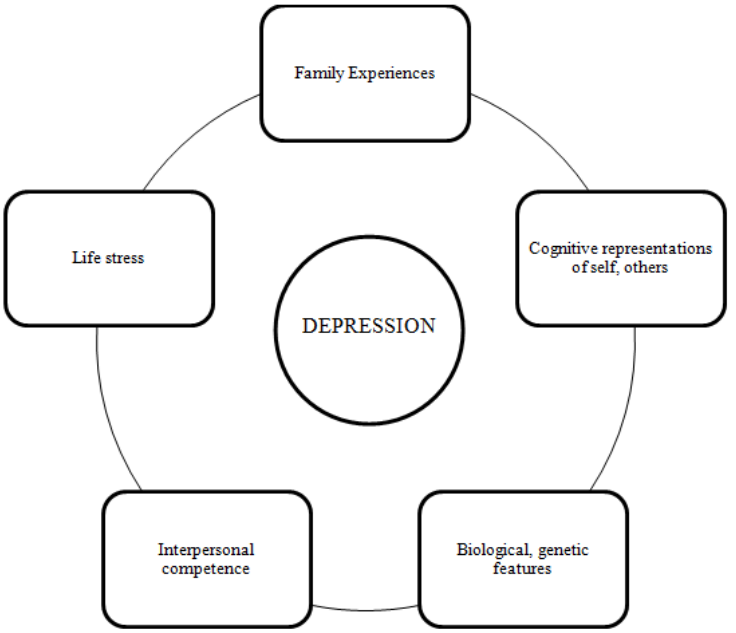
Childhood Depression

Depression in young children is relatively rare, but becomes more frequent in school-aged children (Mash & Barkley, 2003). According to the Behavior Assessment System for Children (BASC-2; Reynolds & Kamphaus, 2004), depression in children is characterized by unhappiness, sadness, and stress that may result in an inability to carry out everyday activities or may bring on thoughts of suicide.

Historical models of etiology for childhood depression largely originated as adaptations of adult models (Mash & Barkley, 2003). Recently, a multidimensional, developmental, transactional perspective has been adopted (Mash & Barkley, 2003), highlighting the importance of considering the influences in and between each of the child's ecologies. Thus, prominent models include biological (e.g., neurochemistry), cognitive (e.g., attributions), behavioral/interpersonal (e.g., interpersonal relationships, social problems), family (e.g., parent-child dyad, attachment theory), and life stress (e.g., stress exposure, diathesis-stress). Through this lens, the onset of depression in childhood is understood to result from the dynamic, reciprocal transactions between the above mentioned factors over time (see Figure 1).

Perhaps as a function of their cognitive developmental level, young children with depression do not frequently report feelings of hopelessness or a preoccupation with death (Merrell, 2001; Ryan et al, 19873). Rather, young children typically reveal signs of depression via their outward appearance and through somatic complaints (Carlson & Kashani, 1988; Ryan et al, 1987). Children's most common psychosomatic complaints include: stomachaches or nausea, headache, pain in the eyes, pain in the limbs or joints, and tingling sensations or numbness (Merrell, 2001). They also tend to demonstrate more disruptive and irritable behavior than adults (Kashani, Holcomb, & Orvaschel, 1986). Finally, the failure to make developmentally appropriate weight gain is associated with childhood depression (Merrell, 2001).

FIGURE 1. *Multifactorial, transactional model of child and adolescent depression**



*Adapted from Mash & Barkley, 2003, pp. 262

Adolescent Depression

Middle to late adolescence is the most common age at onset of first major depression or significant symptoms (Mash & Barkley, 2003). The presentation of depression tends to change as children enter adolescence. Instead of somatic complaints and depressed appearance, adolescents with depression tend to present with more withdrawn behaviors, including anhedonia (lack of interest in activities), psychomotor retardation ("moving slow"), and sleep disturbances (Carlson & Kashani, 1988). Further, instead of separation-related problems, adolescents with depression have higher levels of comorbid eating disorders and substance abuse disorders (Fleming & Offord, 1990).

After onset, individuals suffering from depression oftentimes experience a number of difficulties (Beck, 1967). The symptoms of depression can generally be divided into four main categories, including emotional manifestations, cognitive manifestations, motivational manifestations, and physical/vegetative manifestations. Emotional manifestations refer to changes in the child's feelings or overt behavior (e.g., dejected mood, negative feelings toward self, loss of gratification). Cognitive manifestations refer to maladaptive and oftentimes irrational thoughts (e.g., low self-evaluation, negative expectations, self-criticism, distorted self-image). Prominent features of motivational manifestations in a depressed child include a regressive nature, lack of positive motivation, avoidant behavior, and increased dependency. Vegetative and physical manifestations include fatigue, sleep disturbances, loss of libido, weight loss, and weight gain.

There is growing evidence that an early onset of depression foreshadows a potentially lifelong course, with continuity between childhood depression, adolescent depression, and adult depression (Mash & Barkley, 2003). Although findings on the continuity of child depression and adult depression are mixed, research has found strong evidence demonstrating the continuity of adolescent depression into adulthood (Weissman et al., 1999). Depression is typically chronic, with about 50% to 67% of people who have ever been clinically depressed experiencing relapse over the remainder of their lives (Gotlib & Hammen, 2002).

Diagnosis and Assessment Strategies

According to the DSM-IV-TR (APA, 2000), a Major Depressive Episode is diagnosed by the presence of at least 5 of the following symptoms during the same 2-week period: a depressed mood most of the day, markedly diminished pleasure or interest in activities, significant weight loss or weight gain, recurrent insomnia or hypersomnia, psychomotor agitation or retardation, recurrent fatigue or loss of energy, feelings of worthlessness or excessive guilt, diminished concentration or indecisiveness, or thoughts of death and suicide ideation. The symptoms must cause significant distress in social, occupational, or other areas of functioning and must not be part of the physiological effects of bereavement or an external substance. Major Depressive Disorder (MDD) is characterized as the presence of two or more Major Depressive Episodes. Table 1 provides education professionals with a list of important emotional, behavioral, and cognitive signs of depression during childhood and adolescence.

In schools, students exhibiting depressive symptoms may be identified as having an emotional disturbance under the Individuals with Disabilities Education Act (IDEA, 2004). To qualify for services, the general pervasive mood of unhappiness or depression must be over a long period of time and to a marked degree that adversely affects the student's education performance (Council for Exceptional Children, 2011).

TABLE 1. *Emotional, behavioral, and cognitive signs of depression during childhood and adolescence.*

Emotional
Sadness or hopelessness
Irritability, anger, or hostility
Anxiety
Persistent worrying
Feelings of worthlessness and guilt
Behavioral
Tearfulness or frequent crying
Withdrawal from friends and family
Loss of interest in activities
Loss of pleasure in activities previously enjoyed
Changes in eating
Changes in sleeping habits
Restlessness
Agitation
Sluggish
Clinging and demanding
Self-harm
Activities in excess
Cognitive
Lack of enthusiasm and motivation
Negative perception of daily events and experiences
Fatigue or lack of energy
Difficulty concentrating
Thoughts of death or suicide

There are several assessment instruments marketed to measure child and adolescent depression. On a global level, the Behavioral Assessment System for Children (BASC-2; Reynolds & Kamphaus, 2004) is an integrated system designed to facilitate the differential diagnosis and classification of a variety of emotional and behavioral disorders of children and to aid in the design of treatment plans. The BASC-2 has a depression subscale that specifically assesses for the key symptoms of childhood and adolescent depression, as determined by parent, teacher, and student report forms. School psychologists can examine the depression subscale separately or in a more comprehensive manner with all the other subscales to determine the clinical and relative severity of the depression items compared to the other assessment components.

Other instruments that measure depression exclusively include; the Childhood Depression Inventory (CDI-2; Kovacs, 2010), the Reynold's Childhood Depression Rating Scale- 2nd Edition (RCDS-2; Reynolds, 2002b), and the Reynold's Adolescent Childhood Rating Scale – 2nd Edition (RADS-2; Reynolds, 2002a). The CDI-2, a self-report questionnaire, is essentially a downward extension of the Beck Depression Inventory, which is used to assess depression for both psychiatrically diagnosed patients and normal populations (Gotlib & Hammen, 2002). The CDI-2 includes several items that attempt to assess areas of school and social/peer relations and uses language more suitable for 8 to 13-year-old children (Kovacs & Beck, 1977). Similarly, the RCDS and RADS are self-report surveys that list key features of depression in the form of emotions and symptoms. These two questionnaires were developed specifically to screen for depression in children in schools, providing school and mental health professionals a measure for the evaluation of the severity of children's depressive symptoms (Reynolds, 2002).

Treatment

Kapornai and Vetro (2008) suggest that the main goals of treatment in childhood and adolescent depression should be two-fold: 1) to reduce the depressive symptoms and to improve individual functioning; and 2) to prevent recurrence and relapse of depressive symptoms. Most controlled clinical trials have focused on symptom reduction and generally showed that medication, notably selective serotonin reuptake inhibitors (SSRIs), evidence-based psychosocial interventions, and the combination of these two are most effective in treating depression in children and adolescents (Carr, 2008; Cheung, Emslie, & Mayes, 2005; Vasa, Carlino, Pine, 2006; Weisz, McCarty, & Valeri, 2006). However, it is important to note that there is controversy regarding whether medication alone is a safe approach for treating depression in youths, as numerous studies have found a connection between SSRIs and increased suicidal risks for adolescents (Hall, 2006; Healy, 2003; Mann, et al., 2006).

While most research on treatment efficacy use outcome studies comparing different psychotherapies, some scholars suggest further examining subprocesses (specific techniques) and microprocesses (specific broken down technique process) across these approaches (Gendlin, 1986; Sander & McCarty, 2005). McCarty and Weisz (2007) identified several effective therapeutic techniques and treatment process elements that are evidence-based: enhancing relationship, building communication skills, changing unrealistic negative cognitions and so on. Additionally, they found that effective support usually starts with an orientation to understanding depression and its course and providing clients with a sense of what treatment will entail. Indeed, scholars have recognized psychoeducational interventions as one important component in treating depression. The aims of psychoeducation are to inform the child, the family and the school about depressive symptoms, their consequences, prognosis, treatment duration and adverse effects of medication (Nobile, Cataldo, Marino, & Molteni, 2003).

Many teachers and qualified school personnel have been trained to implement interventions that target depression in children (Maag, 2002). Such interventions include social skills training, self-control training (e.g., self-monitoring, self-evaluation, and self-reinforcement), activity scheduling, cognitive restructuring, and relaxation training. Furthermore, Maag (2002) posited that manipulating the context and reframing a student's perceptions of symptoms of depression can have an effect on behavior and mitigate their impact. Table 2 provides a brief comparison of treatment modalities.

Pharmacotherapy

Antidepressants have been available for over 40 years (Gotlib & Hammen, 2002). The explosive growth and use of antidepressant medication has been among the dominant themes of psychological and psychiatric treatment over the last two decades. As of 1999, three of the 12 most prescribed medications for any type of ailment or disorder in the United States were antidepressants (Gotlib & Hammen, 2002).

Antidepressant medications are used to treat varying levels of depression (Hollon et al., 2002). They function by initiating neurochemical effects on the body. Norepinephrine, serotonin, and dopamine are neurotransmitters that are involved in the regulation of mood and other processes found in depression.

TABLE 2. *Treatments for Children and Adolescents with Depression*

Treatment	Description & Evidence
Antidepressant Medication	Primarily block norepinephrine, serotonin, and dopamine neurotransmitters SSRIs are most commonly prescribed Not proven to be efficacious for children and adolescents (Mandoki, Tapia, Sumner, & Parker, 1997)
Cognitive Behavioral Therapies	Identify and correct distorted conceptualizations and dysfunctional beliefs that underlie thought and behavior of depression Techniques include delineating and testing specific misconceptions and maladaptive assumptions (e.g., monitoring negative, automatic cognitions), recognizing the connection between cognition, affect, and behavior, and examining evidence for and against distorted automatic thought Dysfunctional thoughts and behaviors are then substituted for more realistic interpretations and functional behaviors Effective in decreasing depressive symptoms, symptom severity, and dysfunctional negative thoughts (Vannest, Reynolds, & Kamphaus, 2008) Shown to have the greatest empirical support for treating depressed adolescents and children (David-Ferdon & Kaslow, 2008; Watanabe, et al., 2007)
Interpersonal Therapy	Aimed to help individuals learn how to understand, manage and resolve their identified interpersonal issues Implemented individually or in group setting for adolescents (Mufson, Gallagher, Dorta, &Young, 2004; Mufson, Moreau, Weissman, & Klerman,1993; Mufson, Weissman, Moreau, and Garfinkel, 1999) Proven to reduce depressive symptoms, increase problem-solving skills, and increase social functioning in adolescents with depression (Mufson, Weissman, Moreau, and Garfinkel, 1999)

Antidepressant medications work primarily by blocking the reuptake of these neurotransmitters into the presynaptic cleft, thus increasing the amount of the given neurotransmitter that is available. It is widely believed that varying types of antidepressants are equal in efficacy and therefore, selection of a particular antidepressant for a particular patient is generally based on personal treatment history, side effects, safety in overdose, and expense. SSRIs are the most commonly prescribed antidepressants used by physicians and psychiatrists. Antidepressant medications have the most extensive empirical support and generally are effective as long as their use is maintained, but they can generate an array of unpleasant side effects and do little to reduce risk of relapse after their use is discontinued (Preston & Johnson, 2012).

Antidepressant medications are the most prevalent treatment for MDD in the United States (DeRubeis et al., 2005). Although numerous studies examined the use of antidepressants for treating children and adolescents diagnosed with depression, antidepressants have not been found to be efficacious in the treatment of MDD in children and adolescents (Mandoki, Tapia, Sumner, & Parker, 1997). Thus, caution should be taken when families or children are only considering pharmacotherapy to treat childhood and adolescent depression. More research is warranted to examine the implementation of only pharmacotherapy with children.

Psychotherapy

Although the rates of depression have drastically increased in recent years, the use of psychotherapy as a treatment and management system has declined both in the number of patients treated and the number of patient visits (Ludman, Simon, Tutty, & Von Korff, 2007). Currently, the conventional treatment of depression in the United States entails the use of antidepressant medication and no formal psychotherapy. A community survey in 1997 showed that only 35% of individuals diagnosed with depression received any psychotherapy, with fewer than 20% going to four or more psychotherapy sessions. However, various forms of psychotherapy have continued to be explored (DeRubeis et al., 2005). Two such psychotherapies, cognitive therapy and interpersonal psychotherapy, have shown promise as a viable alternative to pharmacotherapy in the treatment and management of depression in children and adolescents.

Cognitive behavior therapies. The extent and impact of depression accompanied by the recent debate over the risk of medication has spurred the necessity of psychotherapy (Weisz, McCarty & Valeri, 2006). In general, the principles of psychotherapy aim to treat the psychological and/or behavioral aspects of depression as opposed to physiological aspects.

Cognitive therapy is based on the basic theoretical grounds that an individual's emotions and behavior are largely determined by the way in which they perceive the world (Beck et al. 1979). Cognitive psychotherapy is used symptomatically during depressions to help the patient gain objectivity toward automatic reactions and counteract them. During non-depressed periods, the therapy is designed to modify the idiosyncratic cognitive patters to reduce vulnerability to future depressions. On the whole, the primary function of cognitive therapeutic techniques is to help identify and correct distorted conceptualizations and dysfunctional beliefs that underlie thought and behavior.

A variety of cognitive and behavioral strategies are implemented in cognitive therapy (Beck et al., 1979). Cognitive therapists work with individuals in delineating and testing specific misconceptions and maladaptive assumptions. This includes teaching an individual to monitor negative, automatic cognitions, recognize the connection between cognition, affect, and behavior, examine evidence for and against distorted automatic thought, substitute more realistic interpretations for biased cognitions, and learn to identify and alter dysfunctional beliefs which predispose distorted experiences.

Cognitive-behavioral interventions (CBI) are a major component of the successful treatment of childhood depression (Maag & Swearer, 2005). CBIs focus on two areas, cognitions and behavior. The cognitive component targets a student's private speech about him/herself, the environment, and his/her future. Such interventions include self-instruction training, problem-solving training, attribution retraining, and cognitive restructuring as outlined by Beck's (1976) cognitive therapy and Ellis's (1962) rational emotive therapy. Behavioral components include modeling, role playing, and positive reinforcement (Maag & Swearer, 2005). In a review of the extant literature to determine the efficacy of CBI for treating depression in children, Magg and Swearer (2005) found that the interventions showed positive results across each of the studies examined.

Furthermore, cognitive behavioral therapy (CBT) has shown utility in decreasing depressive symptoms, symptom severity, and dysfunctional negative thoughts (Vannest, Reynolds, & Kamphaus, 2008). For example, Clarke and colleagues (2005) followed a group of adolescents who had been previously diagnosed with depression and prescribed SSRIs. Participants were randomly assigned to receive treatment-as-usual (TAU) or SSRIs alone or CBT plus SSRIs. CBT was delivered in five to nine 60-minute sessions followed by monthly telephone calls. Results suggested that fewer participants in the combined group remained moderately depressed at the one-year follow-up than participants in the TAU group alone.

Interpersonal psychotherapy. Interpersonal psychotherapy (IPT) was originally a treatment developed to help adults with depression learn how to manage interpersonal conflicts in their lives (Klerman, Weissman, Rounsaville, & Chevron, 1984). IPT was later modified by Mufson, Moreau,

Weissman, & Klerman (1993) for adolescents with depression because adolescents commonly face interpersonal issues as well which greatly impacts their social-emotional well-being. IPT is a focused therapeutic approach that helps individuals learn how to understand, manage and resolve their identified interpersonal issues. IPT can be implemented in a group setting (Mufson, Gallagher, Dorta, &Young, 2004) or as an individualized therapy (Mufson, Weissman, Moreau, and Garfinkel, 1999). IPT has been shown to reduce depressive symptoms and increase social functioning and problem-solving skills (Mufson et al., 1999).

In an attempt to adapt IPT for use with depressed adolescents, Mufson, Moreau, Weissman, Wickramaratne, Martin, and Samoilov (1994) conducted a three phase study to establish the efficacy of such treatment. Results from the developed IPT manual demonstrated the potential effectiveness of IPT as evidenced by a significant reduction in the symptoms of depression and increase in overall functioning. In another study, Rossello and Bernal (1999) compared the effects of CBT and IPT with a control group. Students were randomly assigned to one of the conditions, with individuals in the CBT and IPT groups receiving 12 weekly, 1-hour, individual therapy sessions and the control group receiving no sessions. The CBT group learned how to identify thoughts, feelings, and actions that influence the feelings of depression. The IPT group learned how to evaluate current problems in their interpersonal relationships and addressed problematic areas. The results demonstrated that both the CBT and IPT groups showed significant reductions in depressive symptoms as compared with the control group.

Among psychosocial interventions, a recent meta-analysis has demonstrated that CBT has the greatest empirical support for treating depressed adolescents and children, while IPT is a promising approach for adolescents, with behavioral therapy suitable for children (David-Ferdon & Kaslow, 2008; Watanabe, et al., 2007). Age, along with other factors, such as severity and duration of the depressive symptoms, chronic medical problems, and family history of psychopathology, need to be considered when choosing a treatment plan. For example, medication combined with CBT is generally recommended for adolescents with severe depressive symptoms, because medication is effective in reducing severe depressive symptoms while CBT may decrease the risk for increased suicidal ideations due to the medication [Treatment of Adolescents with Depression (TADS) Team, 2006]. In terms of treatment modality, positive treatment effects are found across group, individual, or family therapy (David-Ferdon & Kaslow, 2008).

Prevention and Maintenance

Prevention and maintenance are crucial strategies in treating depression for a few reasons. For example, research shows that subsyndromal depression is very common among children and adolescents. Therefore, many depressed children may not qualify for adequate treatment. In an effort to reduce or eliminate symptomatology, prevention programs aimed to help children develop the skills necessary to manage their difficulties should be implemented to provide support to this subpopulation. Second, the high recurrence of depression has called for more effort in the development of interventions designed to reduce relapse and recurrence (Mrazek & Haggerty, 1994).

Bucy (1994) has outlined numerous preventive interventions for internalizing disorders in childhood, including depression. Primary prevention efforts that promote psychological well-being often begin in primary school or community settings. These include programs such as Developing Understanding of Self and Others (DUSO, Dinkmeyer and Dinkmeyer, 1982) which uses stories, pictures, role playing, and puppet play to improve self-awareness, increase positive self-images and facilitate relationships between self and others. Horowitz and Garber (2006) showed that selective and individually indicated preventions are more effective than universal preventive strategies. Selective prevention targets at children and adolescents who are at high risk for depression, such as those who have a family history of psychopathology, and indicated prevention are designed for individuals with sub-threshold depression.

Strategies from the field of positive psychology can also be used with children to target potential symptoms of depression and increase general well-being. Seligman, Ernst, Gillham, Reivich, and Linkins' (2009) examined the application of evidence-based positive psychology principles and strategies into the

everyday practices of schools. As part of this framework, termed Positive Education, students complete exercises based on positive psychology as part of the school curriculum to learn and practice skills that promote self-empowerment and happiness. The Strath Haven Positive Psychology Curriculum is an example of such a program. The main focus of this curriculum is to help children identify signature strengths and incorporate them in their everyday lives. The results of a randomized controlled study of this program at a high school revealed that the program increased students' empathy, assertiveness and self-control. However, the direct ratings of depression and anxiety were not significantly affected. Thus, further research is necessary to measure the effectiveness of interventions based on the principles of positive psychology with youth in schools and to examine whether constructs such as empathy, assertiveness, and self-control are correlated with the reduction of depressive symptomatology.

With resiliency being a primary ingredient of prevention and maintenance, resilience-centered programs have also been considered as interventions for children with or at-risk for depression. The Penn Resiliency Program (PRP; Reivich, Gillham, Chaplin, & Seligman, 2013) works with youth to identify and manage everyday causes of stress in healthy ways. Emphasizing resiliency factors in children, PRP utilizes multiple leaders and more than 20 sessions to teach and practice the core management skills (Reivich and Shatte, 2002). Since 2006, 30 studies with diverse samples have evaluated PRP, making it among the most researched prevention programs for youth with depression (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009). The results of the studies have concluded that PRP is effective at reducing depressive symptoms as well as clinical levels of depression and anxiety.

INTERNET RESOURCES FOR PROFESSIONALS

Given the prevalence and seriousness of depression in children, prevention and intervention are of utmost importance. There is an abundance of resources available to children, parents, and school psychologists to assist in the identification, treatment, and support of children with depression, but often it is difficult to identify quality materials. Thus, listed below are useful resources of varying degrees and types of information. The information provided includes support at the individual, family, and community level, as well as links to additional resources.

The American Academy of Family Physician (http://www.aafp.org/online/en/home.html)

The American Academy of Family Physician website provides information about clinical recommendations as well as supporting research on depression. The website shares information about how a primary care provider can help individuals with depression. News about current public policy and law impacting the medical field are also reported.

The National Institute of Mental Health
(http://www.nimh.nih.gov/health/publications/depression/complete-index.shtml)

The National Institute of Mental Health website has an entire section devoted to depression. From learning what depression is to epidemiology and research, this website provides its readers with a thorough knowledge of the current understanding of depression. It also shares what current clinical trials are being conducted across the U.S. so readers can know what research is being done in the moment.

KidsHealth (http://kidshealth.org/parent/emotions/feelings/understanding_depression.html**)**

KidsHealth provides easy-to-read information about depression. With separate sections for parents, teens and kids, this website provides targeted information to help all members of families dealing with depression. From local doctors and hospital searches to positive parenting techniques, parents can find multiple sources of information on how to help them handle a child with depression. The teen and kid sections provide developmentally appropriate resources for all types of concerns and questions.

PsychCentral (http://psychcentral.com/disorders/depressionchild.htm)

PsychCentral's section on depression serves as another interactive source of information with articles, treatment options, and blogs about depression. Individuals can read about others living with depression as well as post questions and comments about the disorder. Another tool is the website's "Ask the Therapist" section in which individuals can post questions and concerns and receive a response by a licensed psychologist.

Parent Resources (http://www.depressedchild.org)

This website was created by a mother of an undiagnosed child with depression and is geared toward parents of children with depression or depressive symptoms. The website shares resources on depression such as mental health organizations, websites, articles, and books. As clinicians, it is important to be knowledgeable about websites geared toward parents such as this one in order to know what information is being shared with the general public in addition to current literature.

The Help Guide (http://www.helpguide.org/mental/depression_teen.htm)

The Help Guide is a non-profit organization that provides information about a variety of mental health issues including depression. The website clearly details tips and tools for individuals dealing with depression and individuals with friends with depression. It also gives tips and resources for suicidal ideation concerns.

Empowering Parents (http://www.empoweringparents.com)

The Empowering Parents website supports parents in positively and productively assisting their children with depression and other challenges. With articles on parenting techniques and ways to address problems at school, this website provides parents with information to help them navigate the best way to raise a child with depression.

Depression and Bipolar Support Alliance
(http://www.dbsalliance.org/site/PageServer?pagename=home)

The Depression and Bipolar Support Alliance provides a website that connects individuals with depression and bipolar disorder. The website enables individuals to learn about advocacy and empowerment within the depression and bipolar community. It offers services such as "Ask a Doctor" and "Find Professional Help" for people to get individualized and targeted help and answers to their questions. This website additionally provides research and information about clinical trials for both disorders.

The National Alliance on Mental Illness (http://www.nami.org)

The National Alliance on Mental Illness (NAMI) is an organization that provides information and resources to individuals and their families and friends with mental illness, including depression. With local affiliates all over the country, NAMI has support groups and trainings on various mental illness problems. The website lists resources and a calendar of events about informative presentations on the current laws and research impacting mental illness.

CONCLUSION

Depression is a debilitating disorder that impacts children worldwide, causing it to be not only an individual concern but also a public health concern. Although its societal impact has fueled researchers to examine the causes and treatments for depression, few definite answers have been revealed. From a developmental perspective, depression is a chronic, multifactorial mood disorder that can occur at any point during development. Negative cognitive, emotional, and physical symptoms are seen in individuals with depression. There are several assessment tools devoted to measuring depression at all stages of life. Although pharmacotherapy is the most common form of treatment from adolescence onward, it is a controversial treatment option. Research suggests that other forms of psychotherapy are as effective as or more effective in assisting individuals with depression to live better lives. Knowledge of the use and side effects of psychopharmacological treatments can be useful for school-based professionals supporting students with these prescriptions. Cognitive and interpersonal therapies are the two leading forms of psychotherapy shown to be effective in reducing depressive symptoms, and show particular effectiveness in child populations. Reputable internet resources for professionals pertaining to understanding depression among children and adolescents are also highlighted to encourage school-based professionals to obtain further contemporary knowledge through the use of high quality websites. Further research is warranted to better understand depression and optimal treatment plans, especially for diagnosis and treatment of childhood depression. Nonetheless, depression is a societal concern

that continues to affect millions of individuals every day. Given that millions of children experiencing depression will enter the schools each day, it is important for school psychologists and other education professionals to be knowledgeable about the epidemiology, etiology, assessment, and treatment options delineated herein.

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TOC

The School Psychologist's Primer on Early Onset Schizophrenia: A Review of Research Regarding Epidemiology, Etiology, Assessment, and Treatment

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The purpose of this article is to provide school psychologists and other educational professionals with important information regarding the epidemiology, etiology, assessment, and treatment of early onset schizophrenia (EOS). The central aim herein is to bring science to practice by succinctly highlighting key considerations for school psychologists and other educational professionals. A review of recent research and relevant literature is presented reflecting the current knowledge regarding EOS during childhood. This paper emphasizes the importance of understanding the multidimensional character of EOS. With regard to EOS, the developmental psychopathology perspective explores how these behaviors emerge, considering sociocultural, biogenetic, personality, family, emotional, cognitive and behavioral domains. School psychologists are in a critical position to facilitate the academic achievement and healthy development of individuals who meet criteria for EOS. To help accomplish these aims, several web sites are included for professionals who use the internet as a resource. This paper provides school psychologists with the tools and foundation knowledge needed to be the most effective advocates and collaborators for students and families facing the challenges of EOS.

KEYWORDS: early onset schizophrenia, epidemiology, etiology, assessment, treatment, intervention, developmental psychopathology

Early Onset Schizophrenia (EOS, onset of symptoms prior to age 18 years) is the diagnostic classification, identifying children and adolescents experiencing delusions (having beliefs not based on reality), hallucinations (seeing or hearing things that do not exist), disorganized or incoherent speech, grossly disorganized or catatonic behavior or negative symptoms such as lack of emotion (see American Psychiatric Association [APA], 2000 for a list of full diagnostic criteria). Of special significance to school psychologists is the finding that schizophrenia is associated with, among others, impaired language, motor and social skills as well as creative thought (Andreasen, 2000; Nicolson et al., 2000). Given that these skills and abilities are crucial to effective school functioning, it is imperative that school psychologists are familiar with EOS and able to provide effective support services, in an educational context, to students struggling with this disorder. Moreover, school psychologists who are able to identify EOS are better suited to facilitate early intervention and to offer insight regarding academic planning based on the needs of the student which can have a profound and positive effect on developmental trajectories (Li, Pearrow & Jimerson, 2010). This is best accomplished through collaboration with educators, parents and other professionals to provide an optimal learning environment for the student and to address EOS from a developmental psychopathology perspective.

Among the most pervasive and debilitating of childhood psychopathologies is early onset schizophrenia (EOS). Given that EOS is typically identified during the school-age years, school psychologists are in a unique position to identify symptoms and provide the necessary support services. Thus, the purpose of this primer is to provide school psychologists and other educational professionals with relevant and contemporary information related to preventative, assessment and treatment strategies for students with EOS as well as to provide current etiological and epidemiological information.

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Developmental Psychopathology Perspective

The developmental psychopathology perspective provides a conceptual framework for understanding specific psychopathologies in relation to normal developmental trajectories. Addressing psychopathology from this perspective allows for the examination of disordered behavior from multiple viewpoints and across differing domains, thus helping to illuminate the course of disordered behavior, which may help to increase adaptive success (Wicks-Nelson & Israel, 1997). In the transactional-ecological developmental model, development of any process (be it physiological or psychological) is influenced by way of the dynamic and reciprocal interactions with the individual's life context over time (Sameroff, 2009). The behavioral manifestations of a child at any point in time are the result of the transactions between the individual, his/her external experiences, and his/her genetic makeup (Sameroff, 2009). This developmental psychopathology perspective takes into account factors related to sociocultural, biogenetic, personality, family systems, and behavioral domains as well as the interactions between these factors over time (McGorry, 2011). When applied specifically to schizophrenia, a developmental psychopathology perspective may offer added insight and, ideally, allow professionals to consider important factors that might otherwise be overlooked. Additionally, added insight may be gained that informs the development of preventative measures and support strategies. Other considerations accounted for by a developmental psychopathology perspective may include diagnostic difficulties resulting from younger children's lack of expressive language skills and cognitive abilities resulting in the child's inability to adequately describe his or her experiences or, for example, differentiate between delusions and typical childhood imaginative fantasies (Mash & Barkley, 2003).

Epidemiology

Lifetime prevalence of schizophrenia in the general population is approximately 1% (Mueser & McGurk, 2004). While the onset of most cases of schizophrenia occurs during late adolescence and early adulthood (i.e., typically between ages 16 and 35; Asarnow, Thompson, & McGrath, 2004), EOS is relatively rare. It has been estimated that one child in 10,000 can be expected to develop some form of schizophrenic disorder; the rate decreases to approximately one in 40,000 with childhood onset schizophrenia (COS, onset prior to age 12 years; Asarnow & Asarnow, 2003; Nicolson & Rapoport, 1999; Remscmidt, 2002). During late adolescence, however, the number of new cases significantly increases reaching an approximate prevalence of 1%. More specifically, the rate of adolescent schizophrenic disorders increases between 13 and 17 years of age, typically during the middle and high school years (Dunn & Loth, 2012; Remschmidt, 2002). Given this sharp increase in EOS during late adolescence, school psychologists and educational professionals must be prepared to identify the signs and symptoms.

Schizophrenia research, not limited to early onset, reveals that males (a) suffer a psychotic episode at an earlier age, (b) show greater evidence of cognitive impairment, (c) evidence more neurological abnormalities, and (d) are more likely to have a more severe course of illness than women (American Academy of Child and Adolescent Psychiatry, 2001; Murray, Jones, Susser, van Os, & Cannon, 2003). Cases of schizophrenia are found more frequently in lower socioeconomic status (SES) populations (Kirkbride, Barker et al., 2008; Kirkbride, Boydell et al., 2008; Munk-Jorgensen & Mortensen, 1992). This association could be interpreted in a number of ways. For example, a person's low SES could be a result of the challenges the disorder brings to occupational functioning, or the stress of poverty could increase the risk for manifesting symptoms (Li, Pearrow, & Jimerson, 2010). Studies examining the relationship between SES and EOS have yielded equivocal findings (Asarnow & Asarnow, 2003). Higher incidence and prevalence of AOS may exist among certain ethnic/racial minority groups (Fearon et al., 2006; Kirkbride, Barker et al., 2008; Keith, Reiger, & Rae, 1991). However, findings indicating higher prevalence in African Americans, for example, may be confounded by the relationship between SES and prevalence of the illness.

Adult Outcomes Associated with EOS

Poorer outcomes are associated with EOS compared with adult-onset schizophrenia (AOS). Cases with early onset showed greater levels of impairment in social functioning when compared with adult-

onset cases in a follow-up study with 97 individuals with EOS (Schmidt et al., 1995). A significantly higher percentage of patients with EOS (19%) compared with the general population (3%) did not graduate from high school as reported in a study by Reichert, Kreiker, Mehler-Wex, and Warnke (2008). The literature indicates better overall outcomes, including higher level of psychosocial functioning and periods of improvement, associated with AOS in comparison with EOS (Li, Pearrow, Jimerson, 2010). Improvement in long-term functional outcomes in people with EOS and AOS appear to be more effective with early detection and specialized treatment (Amminger, Henry, Harrigan, 2011).

Etiology

Definitive causes of schizophrenia, and EOS, remain unknown. Current evidence supports a developmental psychopathology model, wherein multiple factors play a role in the development of this illness. These include genetic vulnerabilities as well as neurobiological and environmental factors (Table 1 includes a brief description of core elements of a multifaceted model). Regarding children and adolescents, there may be interplay between genetic vulnerability, neurobiological, and environmental factors that put these youth at risk for developing schizophrenia (Uhlhaas, 2011; Weinberger & Harrison, 2011). Neurobiological etiologies involve genetically rooted deviations in brain structure and chemistry. Environmental stressors include complications in pregnancy and birth, as well as psychosocial stressors such as trauma and stigma. The following section presents a brief overview of these biological and environmental etiological models. For an extensive discussion of etiologies, the reader is referred to Li, Pearrow, and Jimerson (2010).

TABLE 1. *Etiological Factors of Schizophrenia*

Risk Genes	Neuregulin, Dysbindin, D-amino acid oxidase, Catechol-O-methyltransferase, Proline dehydrogenase, Reelin, serotonin type 2a receptor, dopamine D3 receptor
Early Insults: Pre, peri, and postnatal risks	Viral Infections: herpes simplex, influenza, rubella Toxins: Lead, alpha-aminolevulinic acid Obstetric: Mother hypertention, loss of husband while being pregnant, malnutrition Delivery complications
Other Environmental Factors	Vitamin D deficiency, winter birth, high latitude, inner city residence, drug use, natural disasters
Trauma	Stigma; emotional, physical, sexual, and psychological abuse; neglect; bullying, loss of a beloved one
Brain Abnormality	Reduction in whole brain and hippocampal volume, low volume of total cortical gray matter, high volumes of white matter, ventricular, and basal ganglia; larger superior temporal gyri relative to brain size; lack of normal right-greater-than left hippocampal asymmetry; larger ventricles, smaller temporal lobes, reduced metabolism in frontal lobe, significant reduction of mid sagittal thalamus

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Neurobiological Factors

Brain structure. Neuroanatomical abnormalities have been revealed among patients with EOS (e.g. Lawrie, McIntosh, Hall, Owens, & Johnstone, 2008). Examples of such abnormalities are volume reduction in multiple brain regions such as the hippocampus, thalamus, and frontal lobe (Rapoport et al. 2005; Thompson et al. 2001; Mehler and Warnke 2002; Rapoport et al. 1997). Deficits in the parietal lobe have also been more pronounced in EOS and COS cases (Burke, Androutsos, Jogia, Byrne, & Frangou, 2008; Vidal et al. 2006). Abnormalities in the parietal cortices "may be associated with the

inability to differentiate between self-produced and externally generated behavior, which is the hallmark of psychosis" (Li, Pearrow, & Jimerson, 2010, p. 18). Gray matter loss could be responsible for cognitive impairments and the prefrontal cortex is a promising predictor of later psychosis (Wood et al. 2003). Cases of schizophrenia comprise "a unique cohort with an onset before puberty and associated initially with profound structural abnormalities within the parietal and frontal regions and later incorporating temporal regions post adolescence" (Gogtay, Vyas, Testa, Wood, & Pantelis, 2011, p. 509).

Brain chemistry. The dopamine hypothesis posits that this neurotransmitter is involved in the pathogenesis of schizophrenia. Recent findings have enriched and modified the original hypothesis of the 1970s, which focused on excessive transmission at dopamine receptors. Current understandings of this hypothesis include the interaction of environmental factors discussed below contributing to dopamine dysfunction. In addition, dopamine is more appropriately linked with psychosis, namely the positive symptoms of schizophrenia (Howes & Kapur, 2009).

Genetic factors. There exists strong evidence presented in family, twin, and adoption studies to support the inheritability of schizophrenia. For example, a child has an approximately 40% chance of developing schizophrenia if both parents have the illness. The chances drop to 12% if only one parent has the illness (Miller & Mason, 2002). Craddock, O'Donovan, and Owen (2006) estimate the general heritability of schizophrenia to be approximately 80-85%. Researchers have proposed genetic alterations, such as the gain or loss of DNA chunks called copy-number variations (CNVs), to be responsible for schizophrenia (Lupski, 2008; Walker, Kestler, Bollini, & Hochman, 2004). Rather than resulting from a single genetic locus or even small number of genes, the literature suggests multiple genes acting in concert, or various individual genes acting independently, play a role in the heritable vulnerability of schizophrenia (Walker et al. 2004).

The role of genetics in the development of EOS appears to be especially strong. Parents of youth with EOS have higher rates of schizophrenia spectrum disorders than parents of individuals with AOS (Margari et al., 2008; Nicolson et al., 2003). Identical twins of patients with schizophrenia have a 50% chance of developing the illness; 10-15% of fraternal twins may develop schizophrenia if their twin has it. The observation that these concordance rates are substantially less than 100% suggest non-genetic factors also play a role in the development of schizophrenia (Li et al., 2010).

Environmental Factors

Prenatal risks. The literature suggests elevated risk for later development of schizophrenia, regardless of age at onset, is associated with prenatal exposures to toxins, such as lead, and infections, such as rubella, (Li et al., 2010; Opler et al., 2008; Brown, 2006; Brown et al. 2004). Findings suggest a relationship between maternal bacterial infection in pregnancy and offspring risk of schizophrenia, with stronger effect for earlier onset (Hunter, Kisley, McCarthy, Freedman & Ross, 2011). Virus exposure during pregnancy may increase the likelihood of schizophrenia pathogenesis in individuals with genetically high risk (Li et al., 2010). Of importance to note, Thapar and Rutter (2009) caution against assuming causation with regard to prenatal risk factors for subsequent psychopathology. The reported associations may be spurious because of inherited confounders. Thus, school psychologists and other practitioners need to be aware that "[r]educing the risk of a specific outcome will only be effective if there is a true causal relationship with the prenatal factor" (Thapar & Rutter, 2009, p. 101).

Perinatal risk. Increased risk for schizophrenia, regardless of age at onset, has been linked with several perinatal factors (Murray et al. 2004; Clarke et al. 2006). Findings indicate general nutritional deprivation and lack of specific micronutrients may be risk factors (Opler & Susser, 2005). Body mass index and low birthweight are also associated with this disease (Li, Pearrow, Jimerson, 2010). Labor delivery complications (LDCs) have been associated with increased risk of EOS (Verdoux et al., 1997), but they have low predictive value for the development of schizophrenia (Lewis & Levitt, 2002). McNeil and colleagues (2009) found a link between unwanted pregnancy in interaction with genetic risk for psychosis and increased risk of schizophrenia-spectrum disorders. More research is needed to determine potential mediators for this association.

Postnatal risk. Evidence suggests the risk of schizophrenia varies according to season of birth, place of birth, and migrant status (McGrath, 2007). It has been proposed that pre- and postnatal Vitamin D deficiency may explain these associations (McGrath, Burne, Féron, Mackay-Sim, & Eyles, 2010; Cantor-Graae, & Selten, 2005; McGrath, et al., 2004). Dalman et al. (2008) report a weak association between viral central nervous system infections during childhood and subsequent development of schizophrenia spectrum disorders.

Trauma. The literature suggests negative life events and traumatic experiences are associated the risk for psychosis and schizophrenia. Child abuse, specifically, has been identified as a possible causal factor for psychosis and schizophrenia manifested as hallucinations in the forms of voices commenting and command hallucinations (Read, Van Os, Morrison, & Ross, 2005). It is important to note that the studies reviewed by Read and colleagues yielded correlational findings that are insufficient to confirm a causal relationship between child abuse and psychosis. Child abuse is related to early age of onset and more positive symptoms (Li, Pearrow, Jimerson, 2010). A study by Frazier et al. (2007) involving over 100 children with schizophrenia spectrum disorders revealed "13% had a history of physical abuse, 10% sexual abuse, 14% neglect, and 20% witnessed trauma in the past" (p. 982).

Stigma. It is not uncommon for people with schizophrenia to experience stigma as a result of negative social interactions associated with their diagnosis. However, such "structural discrimination and social adversity" may also serve as a causal factor of the illness (Li et al., 2010, p. 17). Negative social interactions may result from early manifestations of psychosis (e.g. paranoid reactions or odd speech) during the prodromal stage (Van Zelst, 2009). The related stigma increases the person's risk of transitioning to schizophrenia or other psychotic disorder for which the person is vulnerable.

ASSESSMENT

Possible Challenges to Identification of EOS

Because schizophrenia is relatively rare in children, most school psychologists may not have been exposed to EOS, which can make identification of the disorder challenging. Further diagnostic complications may arise given that approximately two-thirds of children experiencing EOS also meet the criteria for other mental disorders (House, 1999) including oppositional conduct disorder (31%) and atypical depression/dysthymic disorder (37%) (Asarnow & Asarnow, 2003). This comorbidity can produce a masking effect, making detection of the disorder more difficult. For these reasons, among others, school psychologists and other educational professionals must be keenly aware of the etiological course and warning signs associated with EOS.

Importance of Early Detection

The detection of EOS in children is crucial for a number of reasons. To begin with, students with EOS face numerous challenges at school such as behaviors that can interfere with school success, including cognitive deficits resulting in difficulty paying attention, memory and retention difficulties, speech and language problems and developmental delays. Other challenges can include social skills deficits, which can foster poor peer relationships, and behavioral problems resulting in discipline referrals, suspensions, expulsions and ultimately drop out. Moreover, low achievement and drop out are associated with poorer outcomes in adult life (Li, et al., 2010). From a more legalistic viewpoint, federal legislation mandates that students with disabilities receive a free and appropriate public education (FAPE). Qualified students are those who have a mental or physical impairment that substantially limits a major life activity, for instance learning. Thus, depending upon the severity of symptoms and their effect on functioning in the school setting, students may, or may not, qualify for special services. Therefore, in cases in which a student is manifesting signs of EOS, or is diagnosed with EOS, and it is adversely affecting school functioning, an assessment for special education services eligibility should be administered.

Listed above are a number of reasons explaining how school psychologists may be able to identify the manifestations and warning signs associated with EOS. Being familiar and knowledgeable about these indicators will allow for the provision of needed support services for students with EOS and will

allow school psychologists to make crucial assessment decisions and to provide valuable input for tailoring educational plans.

Screening and assessment tools. The use of screening instruments is a time-efficient strategy to identify individuals with an increased risk of developing schizophrenia and in need of more intensive evaluation. Listed below are four prominent screening instruments. Although they share adequate test-retest reliability, high convergent validity, and high inter-correlations, they do not adequately distinguish between measures of depression, anxiety, and attention deficit disorders (Chang, Golembo, Maeda, Tsuji & Schiffman, 2008; Hafner & Maurer, 2006; Olsen & Rosenbaum, 2006). The screening tools include the Youth Psychosis At Risk Questionnaire (Y-PARQ; Ord et al., 2004), the PROD-screen (Heinimaa et al., 2003), SIPS screen (Miller, Cicchetti, Markovich, McGlashan, & Woods, 2004), and Prodromal Questionnaire (PQ; Loewy & Cannon, 2008). To date these screening instruments are still being validated and are not systematically used in the general population – though there is the potential for their use in community-based settings. For a more comprehensive list of prospective screening tools relevant to the prodromal stage of schizophrenia the reader is referred to Li, Pearrow, and Jimerson (2010).

Pearrow, Li, and Jimerson (2012) emphasize that one particularly salient dimension that school mental health professionals should carefully watch for in students who are experiencing schizophrenia symptoms is marked deterioration of social and role functioning, such as progressive social withdrawal and decline of school grades, poor self care, and neurocognitive decline (such as attention, memory, information processing speed). In many instances, these students may have been receiving special education services before being diagnosed as having schizophrenia due to language delays, motor abnormalities, emotional disturbances, learning disabilities, and attention-related difficulties (Nicolson, Lenane, Singaracharlu, & Rapoport, 2000). Indeed, cognitive dysfunction has been regarded as a hallmark feature of schizophrenia (the prototypical primary psychotic disorder) from the time of its earliest conceptualizations.

In summary, early indicators of psychoses can help school psychologists determine when to refer a student for outside services more suited to address serious mental health issues such as schizophrenia. Nevertheless, it is important for school psychologists to monitor students already diagnosed with EOS to ensure they are provided the necessary support services.

DIAGNOSTIC ASSESSMENT

Diagnostic Criteria

Diagnosing schizophrenia is usually done based on criteria found in the DSM-IV-TR (APA, 2000). Currently, the criteria necessary for receiving a diagnosis of schizophrenia are identical for children and adults .The 5 subtypes of schizophrenia are briefly described below, for full diagnostic criteria as well different dimensions of schizophrenia, see the DSM-IV-TR (APA, 2000).

- *Paranoid-type* schizophrenia is characterized by delusions and auditory hallucinations.
- *Disorganized-type* schizophrenia is characterized by speech and behavior that are disorganized or difficult to understand, and flattening or inappropriate emotions.
- *Catatonic-type* schizophrenia is characterized by disturbances of movement (e.g., grossly disorganized or immobility).
- *Undifferentiated-type* schizophrenia is characterized by some symptoms seen in the other subtypes of schizophrenia, but not enough of any one of them to define it as another particular type of schizophrenia.
- *Residual-type schizophrenia* is characterized by a past history of at least one episode of schizophrenia, but the person currently has no positive symptoms (delusions, hallucinations, disorganized speech or behavior).

Associated features. Features associated with the latter stages of the prodromal phase, and prior to receiving a diagnosis of EOS, may include social phobia, obsessive-compulsive behavior, and academic decline as well as poor sleeping patterns and a loss of interest in eating. Other abnormalities may include motor difficulties, an early sign of neurodevelopmental problems associated with schizophrenia. Grimacing, posturing, unusual mannerisms, and ritualistic or stereotypical behavior have also been reported in individuals with EOS (APA, 2000). Seiferth et al. (2009) reported deficits in recognizing, assessing, and experiencing emotions, as well as the processing of emotional facial expressions in individuals experiencing EOS. For more information on symptom onset, developmental course, associated features, age specific features, gender related features and differential diagnosis see Li et al. (2010).

Developmental, Health, and Family History

Pre-, peri- and postnatal risk factors. Crucial to the diagnosis of EOS is a developmental, health and family history. The obtaining of this information can be done through interviews with the child and family members. Included in the interviews should be questions pertaining to pre-, peri-, and postnatal history.

Developmental milestones. History of developmental milestones should also be addressed and are a critical component of assessment. Research results have suggested that language impairment is more extant in EOS than in other psychiatric illnesses in youth, and more pervasive in males compared to females (Hollis, 1995). Vourdas et al., (2003) found that youth with EOS had more reading and spelling difficulties compared to a normal control group.

Medical and diagnostic history. During initial stages of evaluation, conducting a thorough medical and diagnostic history can be very informative. In line with a developmental psychopathology approach, both allow for a continuum of history as opposed to information at a single given point in time (i.e., at the time of the interview). Special attention should be paid to past or present symptoms commonly found to coexist with schizophrenia including anxiety, depression, panic disorder, posttraumatic stress disorder, obsessive-compulsive disorder, and substance abuse (Buckley, Miller, Lehrer, & Castle, 2009). Knowing the history and time of onset of these symptoms can help to illuminate the idiosyncrasies of a particular child's disorder thus allowing professionals to conduct a more informed assessment.

Indirect Assessment

Using rating scales and clinical interviews to obtain information about a child constitutes indirect assessment. Typically, individuals significant to the child's well being (e.g., parents, teachers, guardians), and in many cases the child being assessed, complete rating scales based on their experience with, and observations of, the child. Additionally, interviews with the child and significant others can be used to assess for warning signs and symptoms of EOS. Interviews can be formal and standardized or informal. Rating scales and interviews should both be used as necessary components of a quality and ethical assessment to detect prodromal signs and present symptoms of EOS. Both of these methods allow for the attainment of objective information, likely missed if only the child is used to acquire assessment information, and both facilitate the use of environmental and psychosocial information, which are integral components of the developmental psychopathology perspective. The Behavior Assessment System for Children-II (BASC-II; Reynolds & Kamphaus, 2004) and The Schedule for Affective Disorders and Schizophrenia for School-Age Children – Present and Lifetime Version (K-SADS-PL; Kaufman et al., 1997; Kaufman, Birmaher, Brent, Rao, & Ryan, 1996) are examples of indirect assessment instruments, the former exemplifying a rating scale and the latter a clinical interview, that can be used by school psychologists to assess for early warning signs and symptoms of EOS. For a more exhaustive list of indirect assessment instruments see Li et al. (2010).

Direct Assessment

The observation of targeted overt behaviors, while they are occurring, is termed direct assessment (Li, 2004). Motoric movements, speech, facial expressions, tone of voice and presentation are examples of overt behaviors that can be observed directly. Given that EOS is often accompanied by maladaptive overt behaviors, direct assessment can help to identify key diagnostic elements exhibited by a child.

A key element of direct observation is the use of an independent person to perform the observation. Best results are usually obtained when the individual being observed is unaware that the observation is taking place. Due to the lack of standardized observation instruments, school psychologists are usually limited to clinical observations to acquire direct assessment information. The observations of parents and teachers, who are with the children in different settings and for extended amounts of time each day, can provide valuable insights into the nuances and/or major variation in a child's daily behavior as well. These types of insights, spanning time and environmental settings, are key developmental aspects of a comprehensive diagnostic assessment.

Psychoeducational Assessment

Because significant differences exist between diagnostic (i.e., DSM IV-TR; APA, 2000) and educational eligibility (i.e., Individuals with Disabilities Education Improvement Act, 2004) criteria, school psychologist should carry out their own psychoeducational assessments to develop a profile of a student's functioning in the school setting. Social, behavioral and academic performance should be assessed to help form a basis from which to derive educational, treatment, intervention, progress monitoring, Section 504, and support plans.

Testing Considerations, Accommodations, and Modifications

When assessing children in the prodromal stage or diagnosed with EOS, a number of considerations should be attended to including current and past levels of functioning, developmental level, schizophrenia subtype (i.e., paranoid, catatonic, disorganized, undifferentiated, or residual), and current stage of the illness (i.e., active, recovery, residual). These considerations will help to determine if attained scores and performance levels are true indicators of the child's abilities or products of impaired functioning or still other factors such as current medications. Moreover, school psychologists should be vigilant of changes in the child during testing such as radical shifts in behavior, increases in overt behaviors, or bizarre response patterns. School psychologists can adjust or make modifications to testing protocol based on the prevalence of behaviors that might adversely affect test performance and scores. Regardless of the difficulties encountered while testing a child with signs of prodromal functioning, or diagnosed with EOS, school psychologists should do their best to adhere to and preserve standardization procedures in order to maintain the integrity of testing practices and outcomes. Finding the balance between flexibility and testing fidelity can be very difficult, so school psychologists must do their best to adhere to established assessment standards and carefully consider the results in a situational context and on a case-by-case basis.

Communication with caregivers and medical providers. Prior to conducting a psychoeducational assessment, school psychologists should consult with physicians and/or other medical personnel under whose care the child may be. These individuals can provide valuable information such as medications being taken and their possible side-effects. For example, confounding symptoms and medication side-effects, like pronounced weight-gain (Armenteros & Davies, 2006; Mattai, Hill, & Lenroot, 2010) could interfere with accurate assessment. Consultation with these caregivers can also provide information about subtype of the illness, phase of the illness, and any other extenuating circumstances needing consideration. Being informed of such information can help ensure that the child is in the appropriate state to undergo a psychoeducational evaluation that will reflect true levels of functioning.

Important too is appropriate communication with the caregivers of the child being assessed. Discussing the nature, parameters, purpose and intent of assessment, within reasonable bounds, will likely decrease any extant discomfort or reservations and help to demystify the assessment process. Additionally parents should be notified about the outcomes of the assessment in a timely and understandable manner. By drawing on the expert knowledge of medical personnel and the intimate knowledge of caregivers, school psychologists will be better able to plan for necessary assessment modifications or postponements, thus increasing the likelihood of administering an effective and accurate assessment.

Specific Psychoeducational Assessment Practices

Behavioral observations. A psychoeducational assessment for a student with EOS has multiple components. Once the examiner has obtained the preliminary information described above, behavioral observations in various settings and at various times are necessary to gain a clear picture of functional impairments and to better understand the dynamics of the child's EOS (Kodish & McClellan, 2007; Wozniak, White & Schulz, 2005). Of great importance is the identification of academic and social strengths and deficits unique to the child. Observations of the student may reveal the situations that are most problematic for the student and thus inform intervention and treatment.

Interviews. Interviews with the child, caregivers, teachers and other key figures in the child's life, are another way to gain insight into the child's functioning and to corroborate information already obtained through observations of the child. School psychologists should pay special attention to discrepancies between interviewees regarding functioning of the child as this may reveal differential functioning based on situation or setting. The school nurse should also be interviewed to ascertain any physical and/or mental health information of which s/he may be aware. Typically, school nurses are responsible for managing student pharmacological regimens during school hours and can provide related information to the school psychologist.

Cumulative file review. A comprehensive review of student cumulative records can provide a window into past student functioning spanning multiple ages and grade levels. From a developmental psychopathology perspective, cumulative files offer a wealth of information and are a literal "hard copy" of a student's developmental course and the age of onset of specific developmental milestones. It goes without saying that, from a developmental psychopathology perspective, a thorough file review is among the most important sources of information. It also constitutes a great place to begin gathering data for the assessment of a student with EOS.

Psychoeducational testing. A number of psychoeducational test instruments are available to help complete an assessment of students with EOS. These instruments are designed to assess the current state of student functioning in a number of salient developmental categories. A typical psychoeducational evaluation of a student with EOS may consist of, but is not limited to, formal assessments of cognitive, academic/developmental, language, and emotional functioning as well as adaptive behavior. School psychologists should work in collaboration with other school personnel including a speech/language pathologist and, when available, an occupational therapist to complete a comprehensive psychoeducational assessment. Often, if a student with EOS is being assessed and is already receiving support services, a special education teacher will also be a member of the assessment team. Comprehensive review of the numerous psychoeducational test instruments available is beyond the scope of this manuscript, the reader is referred to Li et al. (2010) for a well-developed discussion highlighting some of the more salient contemporary test instruments.

TREATMENT

The treatment of EOS requires a comprehensive integrative approach that includes both psychopharmacological and psychosocial interventions. It is important to include developmentally appropriate interventions that take into account cognitive, social and behavioral functioning. The management of EOS is reflective of that offered to adults with increased emphasis on family and developmental factors. Due to the gradual nature of developing symptoms, referrals for treatment of children may be delayed, allowing for the development of more severe symptoms of the disorder (Li et al., 2010). Even with treatment, the extended prognosis of individuals with EOS is disheartening. Several years after the implementation of a treatment plan, approximately 70% of individuals continue to experience symptoms of schizophrenia. The quality of outcomes decreases as the length of time the individual experienced psychosis before receiving treatment increases (Asarnow, Tompson & McGrath, 2004). Given this relationship, creating a treatment plan followed by expedited treatment, keeping in mind developmental history, previous experience with mental health services, and desired developmental

outcomes, is imperative. Advantages of receiving treatment for schizophrenia may include: (a) a remediation of symptoms, (b) hope induced by the prospect of a better outcome and possibility of living a functional life, (c) a decrease in long term morbidity and chronicity, and (d) an increase in the potential for optimal response and outcome (Bryden, Carrey & Kutcher, 2001).

The most advantageous treatment for EOS is one characterized by global and all-encompassing applications (Sikich, 2005). Additionally, treatment strategies tailored specifically to the child receiving treatment increase the likelihood of compliance and follow-through, thus increasing the chances of achieving treatment aims (Findling & Schulz, 2005).

School-Based Treatment Considerations

Pearrow, Li, and Jimerson (2012) offer an extensive discussion of the behavior and classroom management of children and adolescents with schizophrenia. Factors needing consideration when designing school-based treatment strategies for EOS include consideration of the child's developmental levels as well as factors that define the dynamics of the illness (Li et al., 2010; Pearrow, Li, & Jimerson, 2012). The early and severe nature of EOS warrants special consideration of the developmental level of the child because distinguishing diagnoses and matching treatment with impairment can be challenging (Bryden et al., 2001). Put another way, the stage of development in which the child is at the time of treatment may warrant the selection of a certain treatment modality, usually matched with a specific impairment. Additionally, treatment must be matched with the developmental level of the child while allowing for the continuation of normative expansion in developmental domains such as psychosocial functioning. To further illustrate the importance of matching developmental level with treatment, cognitive behavioral therapy (CBT) may not be appropriate for younger children with EOS because their cognitive abilities are still in the nascent stage of development making the grasping of quintessential CBT concepts extremely difficult or impossible (Asarnow et al., 2004).

Another developmental psychopathology consideration includes family dynamics. The early nature of the disorder dictates that the family occupies the primary role in treatment. Treatment components, therefore, must be sensitive to the established family system and allow for the child to function within that system. Even more so than in the treatment of adults with schizophrenia, family therapy is important for young children because parents are usually the primary caregivers. Family therapy typically addresses the possible progression of EOS and ways in which the family can cope with its impact on the child's development.

Evidence-Based Treatments

Pharmacological interventions. Presented here is a brief overview of findings related to psychopharmacological treatments of EOS and adult schizophrenia. Brown et al., (2008) highlighted the almost complete lack of clinical trials and controlled studies examining children and adolescents with EOS as well as the lack of studies focusing solely on the effects of pharmacological treatment of schizophrenia spectrum disorders. Also emphasized was the lack of psychopharmacological studies focusing on long-term outcomes instead of acute symptoms as well as the paucity of psychopharmacological studies of EOS including children less than 13 years of age.

While these points are well taken, psychopharmacological treatment is the prevailing method for treating schizophrenia and has been shown to reduce positive symptoms and relapse rates in adults (Lehman et al., 2004; Table 2 provides a summary of common antipsychotic medications, some of which may be prescribed to youth with EOS). Moreover, psychopharmacological treatment of schizophrenia targets psychotic symptoms during the acute phase, the prevention of relapse during the recovery and residual phases, and adverse side effects (Remschmidt & Theisen, 2005). Also, while improved outcomes on the positive symptoms of EOS have been demonstrated, similar outcomes pertaining to negative outcomes are nonexistent. Although the role of school psychologists is not to administer medications, they can play an important role in monitoring effectiveness and side effects of medications for EOS in the early stages of treatment.

TABLE 2. *Antipsychotic Medications, Generic and Brand Names and Typical Tablet Dosage*

	Generic Name	*Brand Name*	*Tablet dosage range*
Atypical	Risperidone	Risperdal	1 - 3 mg
	Olanzapine	Zyprexa	2.5 – 10 mg
	Clozapine	Clozaril	25 – 100 mg
	Quetiapine	Seroquel	25 – 200 mg
	Ziprasidone	Geodon	20-60 mg
	Aripiprazole	Abilify	5-15 mg
High Potency Typical	Haloperidol	Haldol	0.5 – 20 mg
	Pimozide	Orap	2 mg
	Fluphenazine	Prolixin	2.5 – 10 mg
Medium Potency Typical	Trifluoperazine	Stelazine	1 – 10 mg
	Perphenazine	Trilafon	2 – 16 mg
	Thiothixene	Navane	2 – 20 mg
	Loxapine	Loxitane	5 – 50 mg
Low Potency Typical	Molindone	Moban	5 – 100 mg
	Mesoridazine	Serentil	10 – 100 mg
	Thioridazine	Mellaril	10 – 200 mg
	Chlorpromazine	Thorazine	10 – 200 mg

Adapted from Wilens (1999) and Li, Pearrow, & Jimerson (2010). Copyright 2010 by Springer. Reprinted with permission of the publisher.

Psychosocial interventions. Used in concert with pharmacological treatment, several psychosocial interventions have produced desirable effects related to relapse rate, symptoms, and social impairments in adults with schizophrenia (Drury, Birchwood & Cochrane, 2000; Garety, Fowler & Kuipers, 2000; Garety & Freeman, 1999; Hogarty & Ulrich, 1998; Lehman et al., 2004; Pinto, La Pia, Mennella, Giorgio & DeSimone, 1999). By targeting the stabilization and maintenance phases of schizophrenia, psychosocial interventions complement pharmacological treatments. However, as with psychopharmacological treatments, there exists a dearth of studies concentrating on psychosocial treatments of EOS (Dulmus & Smyth, 2000; Haugaard, 2004). What follows is a brief overview of recommended psychosocial interventions.

Cognitive-behavioral therapy. When employed to treat schizophrenia, Cognitive Behavioral Therapy (CBT) focuses on the thoughts, emotions and behaviors associated with symptoms of schizophrenia. Also addressed are triggers, consequences, and responses to symptoms. CBT interventions address the identification of target symptoms, coping strategies, affect regulation, interpretations of reality, and recognition of stress (Asarnow et al., 2004; Lehman et al., 2004; Penn et al., 2004). CBT is most beneficial for those experiencing persistent pharmacotherapy resistant symptoms except for those in the acute phase of schizophrenia (Dickerson, 2000).

The goal of CBT is well suited for school psychologists. When used to address EOS, CBT facilitates active collaboration between the child and therapist, which fosters the establishment of a supportive therapeutic relationship and a shared understanding of the illness. This, in turn, facilitates psychoeducational treatment for the child, which includes, among others, learning about the specific nature of the illness, the importance of treatment compliance, treatment options, and relapse prevention Dilk & Bond, 1996). By combining CBT with other evidence-based treatments, for instance Supportive Therapy (Penn et al., 2004) and Personal Therapy (Hogarty, 2002), the psychoeducational components of CBT are complemented by focusing on the therapeutic alliance, providing support and advice, making efforts to minimize stress, building skills to increase personal competence at self regulation, and developing self awareness pertaining to affective, cognitive and behavioral states. Ongoing maintenance of a supportive therapeutic relationship can help the child to deal with daily stress resulting from the social and academic challenges of school, which illustrates one way that school psychologists can support children with EOS. As with adult CBT, the objectives of treating EOS must be customized to meet the needs of the individual being treated.

Skills training. Skills training that focuses on developing basic skills, the development of which are often disrupted by EOS, is an important component of treating the illness. Providing training in communication, social, and daily life skills is an integral part of the early treatment of children with EOS (American Academy of Child and Adolescent Psychiatry, 2001; Asarnow et al., 2004; Gonthier & Lyon, 2004).

Family interventions. When treating a child with EOS, family participation and involvement are extremely important because the individual is likely to reside with their family and depend upon them to support and access treatment. Family participation in treatment of EOS yields positive outcomes such as improved family problem solving and enhanced psychosocial functioning (Doane, Goldstein, Miklowitz & Falloon, 1986; Hogarty, 2002). Given these findings in adult and child populations, it appears that for any treatment to be effective in reducing symptoms of EOS, it must include a family treatment component. Family therapy should target the reduction of environmental stressors so as to reduce the chances of relapse (Clark & Lewis, 1998) and should last at least 9 months, the length at which more positive outcomes are demonstrated when compared to those lasting less than 6 months (Pitschel-Walz, Leucht, Bauml, Kissling & Engel, 2001).

Psychoeducational interventions in the school setting. There exist three psychosocial interventions that have exceptionally strong applicability to the school setting. Supported employment and education employs individualized job development, ongoing job support, and integration of vocational and mental health services (Lehman et al., 2004). Applying this intervention to the lives of youths involves affecting modifications to address educational and social development in the school environment.

Token economy interventions have demonstrated efficacy within the context of controlled environments where clear expectations and consequences for behaviors have been established (Lehman et al., 2004). Poor social skills and relationship difficulties are commonly associated with EOS and other psychopathologies in children; token economy systems may increase skill acquisition (Spence, 2003). Additional research is needed to assess the specific benefits of using token economy systems with children with EOS.

School-wide interventions have been implemented to address the causes of stigma and discrimination both of which can have profound implications for developing youth as they struggle with mental illness. An evaluation of one program addressing stigma and discrimination, administered to over 1,500 middle school students in the United States, precipitated significant improvement in knowledge and attitudes relative to mental illness (Watson et al., 2004). Interventions such as this, that address social development in a school setting, can help reduce stress for those experiencing EOS and/or other mental disorders.

INTERNET RESOURCES FOR PROFESSIONALS

Given the seriousness of early onset schizophrenia in children, early identification and intervention are very important. There are numerous online resources available to children, parents, and school psychologists to assist in the identification, treatment, and support of children with early onset schizophrenia, however, it is often difficult to identify quality materials. The information described below, includes support at the individual, family, and community level, as well as links to additional resources. For an extended list of internet resources the reader is referred to Li, Pearrow, & Jimerson (2010).

National Institute of Mental Health
(http://www.nimh.nih.gov/health/topics/schizophrenia/index.shtml)

This website provides current research on the topic of Childhood Onset Schizophrenia. Through easy-to-read publications and fact sheets this site provides general information about the disorder, including assessment, treatment, and help finding services. A variety of resources offered here will be useful to a wide array of persons, including people with schizophrenia, their family members, researchers, as well as professionals.

MedlinePlus – Schizophrenia (http://www.nlm.nih.gov/medlineplus/schizophrenia.html)

This website shares the most up-to-date information and research on schizophrenia with various links to sites from reputable national agencies, including information related specifically to schizophrenia in children. Here you can gain access to medical journal articles through the research database MEDLINE. Additionally, this site offers fact-sheets, information about drugs, an illustrated medical encyclopedia, and patient tutorials.

Schizophrenia.com – Information, Support, and Education
(http://www.schizophrenia.com/index.php)

This site is a non-profit web community dedicated to the education and support of those impacted by schizophrenia. Although this site is not specific to early-onset schizophrenia, information is provided related to this specific subgroup of individuals. Links and information on this site include basic information about the disorder (e.g., definition, risk factors, prognosis, treatment) as well as newsblogs, discussion groups, chat rooms, links to articles (based in newspapers and scientific journals), a newsletter, and even links to international discussion groups.

North American Society for Childhood Onset Schizophrenia (http://www.nascos.org/Home/)

This site was developed by the North American Society for Childhood Onset Schizophrenia for the purpose of helping families and professionals share information and resources. Basic information specific to COS is provided for the general public. Access to the site's Knowledge Base is available for anyone interested in becoming a member of the site. It contains updated information on research and resources for parents and family members. Links to other schizophrenia-related sites are also provided.

National Alliance on Mental Health
(http://www.nami.org/Content/ContentGroups/Helpline1/Early_Onset_Schizophrenia.htm)

This user-friendly website provides information about fighting stigma, EOS, symptoms, diagnosis and related difficulties, typical prognosis, common methods of treatment, medications, and a brief overview of current research being conducted on EOS. It seems to be most geared toward families suspecting or living with affected children.

The American Academy of Child and Adolescent Psychiatry
(http://www.aacap.org/cs/root/facts_for_families/schizophrenia_in_children)

This site provides a brief primer for families interested in understanding schizophrenia in children. It presents common symptoms and early warning signs of COS. To help families with the challenge of distinguishing other common diagnoses that may co-occur or precipitate a diagnosis of COS, the website offers links to other psychiatric disorders such as bipolar disorder and autism.

The American Psychological Association (http://www.apa.org/topics/topicschiz.html)

This page is dedicated to schizophrenia in general, not EOS or COS specifically. It includes information and links to journals, books, other websites, and fact sheets that apply to children and their families.

Psychiatric Times (http://www.psychiatrictimes.com/schizophrenia)

The Psychiatric Times website includes access to medical news as well as research reviews, practice guidelines, and clinical trials. These and other resources provide information on the etiology, epidemiology, assessment, and treatment of schizophrenia including COS. Authored by medical professionals, this website includes information regarding differential diagnosis and comorbid diagnoses—rarely found on other sites.

CONCLUSIONS

This manuscript provides a brief overview of the contemporary understandings of schizophrenia with early and childhood onset. The central aim herein has been to bring science to practice and succinctly highlight key considerations for school psychologists and other educational professionals. Although cases of early and childhood onset schizophrenia are rare, the associated effects are among the most pervasive and debilitating of all childhood psychopathologies (Li, Pearrow, & Jimerson, 2010). The information presented in this manuscript offers important knowledge and resources to prepare school psychologists and other educational professionals to identify and address the needs of students with EOS.

No single, definitive cause of schizophrenia or EOS has been identified; instead the literature supports a multifaceted etiological model consisting of environmental, genetic, and neurobiological factors. A developmental psychopathology perspective offers great utility for understanding schizophrenia in general and EOS in particular. Poor long-term outcomes are generally associated with EOS and available evidence suggests outcomes are worse than those associated with adult onset schizophrenia. Therefore, knowledge of early warning signs and specialized treatment can help school psychologists improve the developmental trajectory of students with EOS by allowing for earlier and more effective efforts at primary and secondary prevention.

In addition, knowing the early indicators of psychoses can help school psychologists determine when to refer a student for outside services more suited to address serious mental health issues such as schizophrenia. Moreover, it is important for school psychologists to monitor and support students already diagnosed with EOS to ensure they are provided the necessary support services in the school context.

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TOC

Lessons in Suicide Prevention from the Golden Gate Bridge: Means Restriction, Public Health, and the School Psychologist

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Youth suicide is a global public health problem and some lessons for more effectively preventing it can be found in a perhaps unlikely source: the Golden Gate Bridge. Issues discussed include means restriction and method substitution, the stigma associated with suicide and the consequences of it, myths and misconceptions regarding suicide, and taking a public health approach to suicide prevention. The implications of these issues for school-based suicide prevention and school psychologists are provided.

KEYWORDS: youth suicide, suicide prevention, means restriction, public health, school psychologists

Youth suicidal behavior is an enormous societal problem both in the U.S. and in other countries. Worldwide, suicide claims the lives of nearly one million people annually, has increased over 60% during the last half-century, and is the second leading cause of death among all people ages 10 to 24 (Miller, 2011). In the U.S., suicide is the third-leading cause of death among 10- to 24-year olds (American Association of Suicidology, 2010), trailing only accidents and homicide. Moreover, for each young person who dies by suicide it is estimated that 100 to 200 more make suicide attempts, and that thousands more engage in suicide-related communication (e.g., suicide threats) and suicidal ideation (Mazza, 2006). Consequently, youth suicidal behavior is a major public health crisis for children and adolescents, their families, and their communities (Miller, Eckert, & Mazza, 2009).

Given the significance of this problem and the urgent need to address it, and because children and adolescents spend much of their time in schools, educational facilities have been identified as critical venues for focused youth suicide prevention efforts (Kalafat, 2003; Mazza & Reynolds, 2008). Although most youth suicides occur in a student's place of residence rather than in school (Berman, Jobes, & Silverman, 2006), other forms of youth suicidal behavior (e.g., suicidal ideation; suicide threats) do occur in schools, sometimes at high rates (Miller, 2011). Moreover, although there are significant methodological problems with many of the studies that have examined the effectiveness of school-based suicide prevention programs (Miller et al., 2009), there is increasing evidence that schools can increase the knowledge that students and school personnel have about youth suicidal behavior, and that this can lead to an increased number of referrals to school-based mental health professionals (Mazza, 1997; Reis & Cornell, 2008; Suldo et al., 2010). Further, research indicates that presenting information to students about youth suicide can help change their attitudes about it (Kalafat, 2003), and that training peers and increasing school connectedness can enhance protective factors (e.g., social support) associated with reduced suicide risk (Wyman et al., 2010). Perhaps most important, there is some preliminary evidence suggesting that comprehensive school-based suicide prevention programs can decrease the number of student suicides (Zenere & Lazarus, 1997), and do so over a sustained period of time (Zenere & Lazarus, 2009).

Unfortunately, it appears that many schools do not offer suicide prevention programs (Miller, 2011), placing them at risk not only for potential student deaths by suicide but also possible litigation (Berman, 2009; Jacob, 2009; Jacob, Decker, & Hartshorne, 2011). This is problematic, given that school personnel – including school psychologists – have a legal responsibility as well as an ethical duty to prevent

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youth suicide whenever possible (Jacob, 2009). Although school psychologists play an important role in school-based suicide prevention efforts, most of their work in this area typically involves suicide risk assessment and crisis counseling with suicidal youth (Miller, 2011). Although critically important, crisis counseling only occurs after a child or adolescent has been identified as being potentially suicidal and is therefore reactive rather than proactive. A more population-based, proactive role for the school psychologist is needed to maximize the effectiveness of school-based suicide prevention efforts. Some important lessons for accomplishing this goal can be found in a perhaps unlikely source: the Golden Gate Bridge.

Suicide and the Golden Gate Bridge

Located in San Francisco, California, the Golden Gate Bridge is considered one of the seven wonders of the modern world and has been described as "a global icon, a triumph of engineering, and a work of art" (Starr, 2010, p.1). It also has the dubious distinction of being the site of more suicides than any other single place in the United States (Joiner, Van Orden, Witte, & Rudd, 2009) and perhaps the world (Friend, 2003). Completed in May of 1937, the year 2012 marked the 75th anniversary of the bridge. Since its completion, over 1,500 people (the exact number is unknown and current figures are likely underestimates given undetected nighttime jumps; Starr, 2010) have jumped from the bridge to their deaths (Bateson, 2012). For every person who dies by suicide at the bridge – which occurs about once every two weeks on average (Friend, 2003) – two or more others are restrained from doing so, usually by members of the California Highway Patrol (Joiner, 2010). Of those individuals who do jump, the vast majority (an estimated 97%) die either at impact or by drowning (Friend, 2003).

Although calls for systematic prevention efforts have been ongoing since at least the 1950s, the current system for preventing suicide on the Golden Gate Bridge is what bridge officials refer to as a "non-physical barrier" (Friend, 2003, p. 13). These components include several security cameras and 13 telephones, which potentially suicidal people can use to contact the bridge's control tower. The other important component is randomly scheduled patrols conducted by the California Highway Patrol and Golden Gate Bridge personnel, who monitor pedestrians walking across the bridge via squad cars, motorcycles, bicycles, and on foot (Friend, 2003). However well intentioned, a significant problem with these programs is that they are dependent on a potentially suicidal individual actively seeking help (which often does not occur) or on situations in which an individual patrolling the bridge is within reasonable proximity to an individual attempting to jump from it.

A bridge barrier, which would potentially solve both of these problems, has been proposed for decades but has been repeatedly voted down by the authorities in the San Francisco Bay area. Typical reasons cited for not erecting bridge barriers include their cost, view obstruction, and aesthetic concerns (Friend, 2003). Perhaps the most important impediment to building a bridge barrier, however, is the apparent belief among many that any attempt at preventing suicides at the Golden Gate Bridge would ultimately be ineffective, because individuals who were prevented from jumping from the bridge would simply attempt and most likely die by suicide in some other manner, in some other place, and at some other time (Joiner, 2010).

Myths and Method Substitution

There are many myths about suicide (Joiner, 2010), with perhaps the most dangerous being the faulty notion that there is little or nothing anyone can do if a particular individual wants to die by suicide. That is, limiting access to a lethal means of suicide would only temporarily prevent a suicide from occurring, because an individual thwarted from attempting suicide via one method would simply adopt another one. This theory, commonly referred to as method substitution, would suggest that restricting access to lethal means in one area (e.g., restricting access to jumping off the Golden Gate Bridge through the placement of bridge barriers) would simply result in an increase in another suicide method (e.g., firearms), and the overall suicide rate would remain unchanged (Miller, 2011).

In regard to the Golden Gate Bridge, a study asked a national sample of 2,770 respondents about

what effect a physical barrier might have had on the fate of the people who had already died by suicide at the bridge. Thirty-four percent of the respondents indicated their belief that every single person would have found another way to die by suicide, even if a barrier was present; an additional 40% believed that most would have done so (Miller, Axrael, & Hemenway, 2006). These results are consistent with other reports regarding public reactions to physical bridge barriers. For example, even though many college student suicides have taken place on the campus of Cornell University in upstate New York, where students have leaped to their deaths from bridges overlooking deep gorges, a recent report conducted at Cornell found that 43.6% of undergraduate students opposed implementing permanent safety structures on campus bridges (Cross, 2011).

The respondents who opposed the use of physical barriers in these studies were clearly unaware of a now-classic study conducted more than 30 years ago by Seiden (1978), who examined the records of 515 individuals who were restrained from jumping off the Golden Gate Bridge from 1937 (the year the bridge was completed) through 1971. The method substitution theory would predict that most of these individuals, perhaps the large majority, would have died by suicide at a later date after being prevented from jumping from the Golden Gate Bridge. Results of the study revealed, however, that only 6% later died by suicide – the remaining 94% did not (Seiden, 1978). A number of subsequent studies (e.g., Bennewith, Nowers, & Gunnell, 2007; Reisch & Michel, 2005) and literature reviews (Beautrais, 2007; Beautrais & Gibb, 2009) examining the effects of bridge barriers on suicidal behavior have reported similar results, indicating that placing physical barriers on bridges (i.e., engaging in means restriction) can save lives.

Moreover, the issue of method substitution and suicide does not apply only to bridge barriers. Public policy initiatives that have restricted the use of firearms (particularly handguns) is associated with a reduction in suicide by firearms and suicide overall, especially among young people (Berman, Jobes, & Silverman, 2006; Leenaars, 2009). Reductions in suicide rates have also been reported when public access to toxic gas has been decreased (Joiner et al., 2009) and when certain drugs and medications (Leenaars et al., 2009) and alcohol consumption (Wasserman & Hadlaczky, 2009) are restricted. Although there are some instances where method substitution may occur (De Leo, Dwyer, Firman, & Nellinger, 2003), it clearly is not inevitable. Additionally, if an individual is prevented from dying by suicide, there is a high probability that person will not engage in subsequent suicide attempts (Berman et al., 2006). For example, among the few known survivors of those who jumped from the Golden Gate Bridge, none have subsequently died by suicide or even made an additional suicide attempt (Joiner, 2010).

As a result of these findings, it has been increasingly recommended that a public health approach to suicide prevention on the Golden Gate Bridge be implemented. A central tenet of a public health approach is its emphasis on prevention and early intervention with entire populations rather than individuals (Doll & Cummings, 2008; Strein, Hoagwood, & Cohn, 2003). The first public health programs began as simple policies to clean up communities, followed by local, state, and eventually federal initiatives to provide vaccinations and environmental improvements for a wide variety of medical problems (Strein et al., 2003). More recently, public health approaches have been applied to education in the form of a three-tiered model of prevention and intervention (Shinn & Walker, 2010), where it has been used to address a variety of problems in schools, including academic problems (Martinez & Nellis, 2008), aggression and bullying (Swearer, Espelage, Brey Love, & Kingsbury, 2008), substance abuse problems (Burrows-Sanchez & Hawken, 2007), child poverty (Miller & Sawka-Miller, 2009), depression (Mazza & Reynolds, 2008), non-suicidal self-injury (Miller & Brock, 2010), and youth suicidal behavior (Miller, 2011; Miller et al., 2009).

A public health approach to suicide prevention on the Golden Gate Bridge would emphasize the use of means restriction (i.e., bridge barriers) and public education about suicide, including debunking the many myths that surround it, the fact that suicidal behavior is typically the result of treatable mental health problems, and that suicide can be effectively prevented (Joiner et al., 2009). As of this writing, however, bridge barriers have been proposed but have not yet been constructed at the Golden Gate

Bridge. Several years ago, however, a barrier was constructed (at a cost of five million dollars) between the bridge's walkway and traffic, designed to protect bicyclers on the bridge from onrushing cars (Joiner, 2005). This occurred despite the fact that no bicyclist has ever been killed on the bridge. As noted by Joiner (2005), "five million dollars and zero deaths for bicyclists; zero dollars and over a thousand deaths by suicide: it is difficult to avoid the conclusion of stigma and bias" (p. 27). To better understand why there is still no prevention barrier on the Golden Gate Bridge, it is first necessary to understand the relationship between suicide and stigmatization.

Suicide and Stigmatization

It has been suggested that suicide may be the most stigmatized form of human behavior (Joiner, 2005). Stigma, which "combines fear with disgust, contempt, and lack of compassion, all of which flow from ignorance" (Joiner, 2010, p. 272), has been associated with suicide for centuries (Miller, 2011). Why are suicidal people stigmatized? The answer to this question is complex, but appears in part to reflect evidence that individuals who are believed by others to play a greater role in their condition are stigmatized to a greater degree than are individuals who are perceived as being victims of circumstances beyond their control (Joiner et al., 2009). In fact, the stigma associated with suicide is so pervasive that there have been cases in which the families of youth suicide victims made requests to coroners that their son's or daughter's death by suicide should be altered and that some other cause (e.g., an accident) be attributed as the cause of death (Nuland, 1993). Similarly, Joiner (2010) reported the case of one chief medical examiner who stated that he never records a youth's death as a suicide, even if the evidence clearly supports it, because he does not want to "stigmatize" the youth's parents. Clearly, suicide is a frequently taboo topic that often stigmatizes the suicide victim as well as his or her family (Miller, 2011).

Because of the stigma associated with it, the notion of having frank and candid discussions about suicide is distressing to many people, and the topic of youth suicide seems to make many people particularly uncomfortable (Miller, 2011). This may be due to the myth that asking questions or talking with children or adolescents about suicide will increase the probability of its occurrence (Mazza, 2006). Despite fears to the contrary, there is no evidence for this belief (Gould et al., 2005). In fact, research suggests that youth who are given the opportunity to openly and frankly discuss the topic of suicide with trusted adults typically have more beneficial outcomes than youth not given this opportunity, as do their peers who also may be at risk (Mazza, 2006).

Implications for School Psychologists

The lack of effective means restriction procedures on the Golden Gate Bridge, and the stigmatization of suicidal people that appears to be a cause of the reluctance to implement them, provides valuable lessons for school psychologists interested in promoting effective school-based suicide prevention programs. In particular, school psychologists will need to make use of their consultative skills, including their skills in organizational consultation and systems intervention (Meyers, Meyers, Proctor, & Grayhill, 2009), and adopt a systems-level, public health approach to suicide prevention (Miller, 2011; Miller et al., 2009). Public health approaches to prevention moves the focus away from remediating problems for individuals toward a greater focus on preventing problems for populations (Hoagwood & Johnson, 2003; Strein et al., 2003). For example, in the context of youth suicide, school psychologists will likely have to take the lead in dispelling a variety of myths associated with suicidal behavior, including the "just world" belief that people essentially deserve whatever happens to them (Albee, 1986), the mistaken belief that if someone really wants to die by suicide there is little or nothing that can be done to prevent it (Joiner, 2010), and the false notion that questioning or talking with youth about potential suicidal behavior will "put ideas into their head" and increase the probability of suicidal behavior (Gould et al., 2005).

In addition, school psychologists need to be cognizant of the issues of means restriction and its effects on suicidal behavior. Given that most youth who die by suicide use guns as their method of choice, the issue of means restriction has particular relevance when considering firearms (Miller, 2011). There is clear and compelling evidence that the presence of firearms in a child or adolescent's home

– particularly unlocked, loaded handguns – is associated with significantly increased risk for suicide (Simon, 2007). In addition, the risk conferred by guns is proportional to their accessibility and the number of them available, and if a gun is used in a suicide attempt a fatal outcome will occur 78-90% of the time (Berman et al., 2006). Public policy initiatives that have restricted the access to guns have been associated with a reduction of suicide by firearms and also suicide overall, especially among young people (Miller, 2011). As such, it has been suggested that potentially one of the most powerful youth suicide prevention strategies is removing guns from the home environment, or at least restricting access of youth to them (Berman et al., 2006).

School psychologists are encouraged to collaborate with parents and members of the community to emphasize greater means restriction in homes and communities, such as ensuring that all guns are kept locked and stored out of the reach of children and youth. Additional roles for school psychologists in this process may include coordinating efforts between schools and communities to provide youth and adults with gun safety training and advocating for mandatory background checks and waiting periods prior to making gun purchases (Garland & Zigler, 1993). Although it is recognized that restricting the use and/or access to guns is a politically and sometimes emotionally charged topic, the evidence is clear that (a) most youth who die by suicide do so via firearms, and (b) individuals who own guns or who have easy access to them are more likely to die by suicide than those who do not (Leenaars, 2009)

School psychologists are also encouraged to work with parents to ensure that other potentially lethal materials are given limited and controlled access to suicidal youth, including knives and many types of medications. For example, Berman and his colleagues (2006) suggested that limiting prescription doses of potentially lethal medications to a restricted time frame might be beneficial, and there is some evidence that this can be an effective strategy for reducing suicidal behavior (e.g., Hawton, 2002; Leenaars et al., 2009).

To help reduce the stigma associated with suicidal individuals, school psychologists need to find ways to encourage students to seek help when necessary for themselves and/or their peers. Unfortunately, a major impediment to this process is the consistent finding that youth with the highest risk for suicide are frequently the least likely to seek help from others (Berman et al., 2006). Ironically, it appears that suicidal thoughts and other suicidal behaviors may act as a barrier to getting help for some children and adolescents, a condition known as help negation (Rudd, Joiner, & Rajab, 1995). For example, Carlton and Deane (2000) found that the presence of suicidal ideation was negatively associated with help seeking in a sample of New Zealand high school students. This finding was later replicated among both Australian (Deane, Wilson, & Ciarrochi, 2001) and American (Fur, Westfield, McConnell, & Jenkins, 2001) university students. In the study involving American students, only 20% of the participants (out of a sample of 1,455) who reported suicidal ideation sought some form of treatment for it.

A variety of factors may affect the help seeking behaviors of children and adolescents in regard to suicidal behavior and other mental health problems (Srebnik, Cauce, & Baydar, 1996). For example, Cigularov, Chen, Thurber, and Stallones (2008) examined the barriers to help seeking among 854 high school students in Colorado. The most prominent barriers to getting help for themselves were (1) an inability to discuss problems with adults, (2) the belief that one should handle such problems without assistance from others, (3) a fear of hospitalization, and (4) lack of perceived closeness to adults. The most prominent barriers students identified for helping their friends included (1) concerns about making the wrong judgment about their friends, (2) the perceived lack of approachability of adults in the school, (3) the fear of a friend's possible hospitalization, and (4) underestimating their friends' problems.

These results, as well as the results from other studies demonstrating a clear reluctance among vulnerable students to seek help for their problems (e.g.., Carlton and Deane, 2000; Zwaaswijk, Van der Ende, Verhaak, Bensing, & Vernhulst, 2003), has important implications for school psychologists. In particular, research suggest that school personnel need to form closer bonds with students generally, so that students are more likely to perceive them as approachable and helpful adults, whether in regard to their own possible suicidal behavior or that of their peers (Miller, 2011). The need for school personnel

to extend themselves to students and demonstrate their support for them is especially important for adolescent males, given that they have a much higher probability of dying by suicide than females (Miller & Eckert, 2009).

School psychologists are also encouraged to work with school personnel to ensure that students are aware that the mental health problems that typically underlie suicidal behavior (e.g., depression) are very common and readily treatable, and that getting help for a mental health problem is analogous to getting help for a physical health problem. Highlighting the fact that biological factors are highly associated with depression and suicidal behavior may be helpful for some youth, particularly male students, who may be reluctant to identify themselves for their mental (rather than physical) health issues, especially if they perceive themselves as deserving "blame" for them or needing to handle their problems on their own (Miller, 2011). School psychologists can also work with school personnel to communicate and reinforce the notion that getting help is not a sign of weakness but rather a sign of strength, and that at times everyone has problems for which they need help from other people.

These ideas were adopted by the U.S. Air Force after an alarming increase in suicide rates among its members in the mid-1990s. Air Force leaders made proactive efforts to conceptualize suicide prevention as a community-wide responsibility rather than an isolated and individual problem. Key components of the Air Force program included (1) ongoing commitment from Air Force leaders; (2) consistent and frequent communication around the topic of suicide prevention with Air Force personnel; (3) de-stigmatizing the notion of getting help for mental health problems; (4) improving collaboration among prevention agencies within the Air Force community; and (5) identification and training of suicide prevention gatekeepers. A significant and sustained drop in the suicide rate among Air Force personnel was demonstrated after this program was implemented (Knox, Conwell, & Caine, 2004), and it provides a useful model of applying a population-based, public health approach to suicide prevention in the schools (Miller, 2011).

School psychologists should also have the necessary knowledge and skills to recognize the various risk factors and warning signs of suicide, formulate and conduct suicide risk assessments and screenings, distinguish between suicidal youth and those engaging in non-suicidal self-injury, reintegrate a student back into school following the student's suicide attempt, implement effective postvention procedures if a student suicide does occur, and be cognizant of the various legal and ethical issues associated with school-based suicide prevention (Berman, 2009; Berman et al., 2006; Miller, 2011), including the fact that ethical requirements are often more stringent than legal ones (Jacob et al., 2011). Regarding this last point, although school psychologists should behave in a manner consistent with legal mandates and their particular code of professional ethics (e.g., National Association of School Psychologists Principles for Professional Ethics), meeting these requirements should only be viewed as the minimum standard expected and neither encompasses nor limits what school psychologists can do to assist potentially suicidal youth. That is, although best practice in school-based suicide prevention should be informed by legal requirements and ethical responsibilities, it need not be limited by either of them (Miller, 2011).

Finally, all school-based suicide prevention programs or interventions should be based, whenever possible, on evidence-based practices. This term refers to "a body of scientific knowledge defined usually by reference to research methods or designs, about a range of service practices (e.g., referral, assessment, case management, therapies, or support services" (Hoagwood & Johnson, 2003, p.5). More recently, however, evidence-based practices have encompassed "a model of practice that integrates research evidence for treatments with clinical expertise and patient characteristics" (Merrell, Ervin, & Gimpel Peacock, 2012, p. 156). In the context of suicide prevention programs in the schools, evidence for effectiveness is often lacking (Miller et al., 2009), particularly in areas such as suicide postvention. Nevertheless, school personnel, especially mental health professionals such as school psychologists, need to be cognizant of current as well as emerging best practices in suicide prevention.

Conclusion

The Golden Gate Bridge has now been an iconic part of the California landscape for over 75 years. Despite the fact that over 1,500 people have died by suicide at the bridge during that time, effective prevention strategies (e.g., bridge barriers) have not been implemented; a fact that appears to at least partly reflect the stigma associated with people who exhibit suicidal behavior (Bateson, 2012; Joiner et al., 2009). These issues, which have shaped efforts to more effectively prevent suicide on the Golden Gate Bridge, have clear parallels in the recent movements in schools toward public health models of prevention and intervention. School psychologists are encouraged to adopt a public health approach to potentially suicidal youth, to effectively collaborate and consult with their school-based colleagues regarding this frequently stigmatized and marginalized population, and to take leadership roles in developing, implementing, and evaluating suicide prevention programs. Ironically, the Golden Gate Bridge, the site of more suicides than any other place in the U.S. and perhaps the world, would appear to have some important lessons to impart in this process.

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TOC

Leveraging Strengths Assessment and Intervention Model (LeStAIM): A Theoretical Strength-Based Assessment Framework

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Current assessments in the schools are based on a deficit model (Epstein, 1998). *The National Association of School Psychologists (NASP) Model for Comprehensive and Integrated School Psychological Services* (2010), federal initiatives and mandates, and experts in the field of assessment have highlighted the need for the comprehensive assessment of students in order to understand students' pattern of strengths and weaknesses, explain areas of deficit, and derive scientifically based interventions to increase students' positive development and outcomes (Hale et al., 2010; Reynolds, 2008; U. S. Department of Education, 1994; 2006). These developments call for a paradigm shift from a deficit perspective to a strength-based assessment and intervention focus. The leveraging strengths assessment and intervention model (LeStAIM), described in this article, is a comprehensive theoretical strength-based assessment framework consistent with NASP's model for practice in school psychology, federal initiatives and mandates, and experts recommendations for best practices in assessment. This theoretical strength-based assessment model makes use of ecological theory, neurodevelopmental constructs, dynamic assessment, positive psychology, and resiliency theory to understand cognitive processes, learning, and social emotional functioning. Leveraging strengths to address weaknesses is emphasized to promote positive student development using individual and multi-systemic based interventions.

KEYWORDS: strength-based assessment, neurodevelopmental, multi-systemic, resiliency, self-advocacy, dynamic assessment.

The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA 2004) mandates that each state must adopt criteria for determining whether a child has a specific learning disability that: 1) must not require the use of a severe discrepancy between intellectual ability and achievement; 2) must permit the use of a process based on the child's response to scientific, research-based intervention; and 3) may permit the use of other alternative research-based procedures for determining whether a child has a specific learning disability (United States Department of Education, 2006). The IDEIA 2004 mandates have led to debates regarding what is the best framework to use for the assessment of learning disabilities (Hale et al., 2010; Reynolds, 2008). Yet, the need for a comprehensive nonbiased assessment is still required by law, as Response to Intervention (RtI) is only part of the process required to assess learning disabilities (Reynolds, 2008).

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Many professionals are aware that the sole reliance on RtI is not going to solve the problem with the assessment or achievement of low performing students, especially those students with learning disabilities (Reynolds, 2008). More importantly, the understanding of why students are having difficulties will assist in the understanding of what type of interventions will address the problem(s) (Pohlman, 2008). Hale et al. (2010) argue that neither the ability-achievement discrepancy model nor failure to respond to intervention alone is sufficient for the identification of learning disabilities. Many experts in assessment indicate that what makes the most empirical and clinical sense is a framework that identifies patterns of psychological processing strengths and weaknesses that explain academic deficits (Hale et al., 2010). The assessment of cognitive and neuropsychological processes strength and weaknesses should be used for both specific learning disabilities (SLD) identification and intervention purposes (Hale et al., 2010). Similarly, a comprehensive assessment involving cognitive and neuropsychological strengths and weaknesses can also assist in understanding and intervening with children experiencing varying learning problems and disabilities.

Professional organizations, such as the National Association of School Psychologists (NASP), have provided guidance to the continued debate on assessment practices. In 2010, the *National Association of School Psychologists Model for Comprehensive and Integrated Psychological Services* emphasized that examiners should have the "knowledge of varied models and methods for assessment and data collection for identifying strengths and needs, developing effective services and programs, and measuring progress and outcomes" (p. 323). Previously, the conference on the Future of School Psychology in 2002 prioritized the top outcomes for children. These outcomes included: 1) improved academic competence and social-emotional functioning for all children; 2) enhanced family-school partnerships and parental involvement; 3) more effective education and instruction for all learners; and 4) increased child and family services in schools to promote health and mental health, and 5) integrated community services to support the child and family (Dawson, Cummings, Harrison, Short, Gorin, & Palomares, 2003/2004). National initiatives have also prescribed that assessment practices address student's strengths, involve parents, school staff, and other relevant individuals, and focus on improved outcomes for students (U.S. Department of Education, 1994).

The NASP model for the professional practice of school psychologists, as well as federal initiatives, requires that school psychologists and assessment personnel incorporate the use of children and youths' strengths and needs in the assessment and intervention process, and involve the active participation of the student, parents, school personnel, and community in order to promote better developmental outcomes for students. The goal of current assessment practices in public schools is to identify an individual's deficits when considering eligibility for special education services. Besides listing strengths on Individualized Education Plans (IEPs), assessment personnel often do not focus on students' strengths either to understand functioning or to generate interventions (Epstein, 1999; Jimerson, Sharkey, Nyborg, & Furlong, 2004; Lubbe & Eloff, 2004; Reid, Epstein, Pastor, & Ryser, 2000).

Focusing on deficits does not necessarily lead to better understanding of the students learning needs nor does it typically address or promote better outcomes. Moreover, it has been documented that there are unintended effects when focusing on deficits. These unintended effects can lead to: feelings of demoralization and diminished self-confidence, lowered motivation and aspirations to excel, negative expectancies, stereotypes, and lack of feelings of belonging (Laursen, 2003; Reid, Epstein, Pastor, & Ryser, 2000). Assessment requires both the understanding of students' weaknesses in order to classify or to diagnose disabilities, and the understanding of strengths and assets in order to use these strengths to promote learning and adjustment (Reid et al., 2000).

A focus on strengths has received much attention in mental health, child welfare, family services, and in education through resiliency research (Blundo, 2001; Epstein, 1999; Lubbe & Eloff, 2004). A strength-based focus has also been a result of positive psychology, which emphasizes individual strengths of character and fosters strengths to produce positive outcomes (Seligman, 2000). While a strength-based focus has been primarily used in therapy and prevention, strength-based assessment has emerged more recently.

Strength-based Assessment

Epstein (1998) indicates that strength-based assessment is based on the beliefs that: 1) all students have strengths and the emphasis on these strengths will lead to heightened motivation; 2) all students are capable of learning and demonstrating many strengths given sufficient experiences, instructions, and opportunities by their school, family, and/or community; and 3) the focus on students positive skills and resources is more likely to lead them to use more of their strengths and resources. In addition, strength-based assessment directs the professional to identify and build upon the existing strengths, assets, and skills of the student, family, and supporting individuals, such as school personnel.

As previously mentioned, assessment personnel in the schools rarely use students' strengths as a central component in their assessment or intervention plans (Cosden, Kern, Koegel, Koegel, & Greenwell, 2006). The NASP model for *Comprehensive and Integrated School Psychological Services* (2010) emphasizes the "recognition of risk and protective factors that are vital to understanding and addressing systemic problems…" (p. 327). Addressing risks, protective factors, and strengths or assets are part of using resiliency theory, which has shown to optimize outcomes for students and families (Benson, Scales, Hamilton, Sesma, Hong, & Roehlkepartain, 2006; Masten, 2001). Students who possess protective factors, strengths and assets tend to have more positive outcomes than students who possess fewer protective factors, strengths, and assets (Benson et al., 2006; Ogg, Brinkman, Dedrick, & Carlson, 2010). Protective factors, strengths, and assets are part of the foundation in strengths-based assessment and intervention.

While emerging, there is a movement toward a strength-based assessment, and away from a deficit model (e.g., Epstein, 1999; Lubbe & Eloff, 2004; Pohlman, 2008; Rhee, Furlong, Turner, & Harari, 2001). This movement toward a strength-based framework has been primarily focused on character strengths and social-emotional functioning, which have followed the positive psychology and resiliency movements. Park and Peterson (2003) have used a positive psychology framework to develop their *Values in Action Inventory for Youth* (VIA-Youth), which is a self-report inventory for children and youth and measures 24 different strengths of character. Other inventories to assess social-emotional strengths have also been published, such as LeBuff, Shapiro and Naglieri's (2009) *Devereux Student Strengths Assessment* (DESSA) and Epstein's (2004) *Behavioral and Emotional Rating Scale-2* (BERS-2). In addition, there are other non-published, strength-based systems, such as the *Multifactor Assessment and Action Planning System* (MAAPS) (Bouman et al., 2012), developed by Doug Bouman, one of the authors of this manuscript. The movement toward positive psychology and research on the use of resiliency in schools has led some researchers to investigate the efficacy of strength-based assessment.

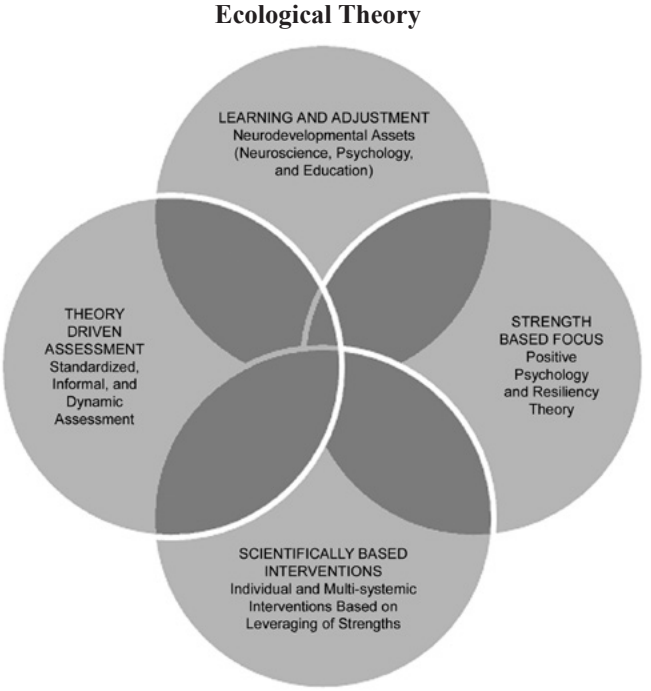
Studies focusing on the effectiveness of the use of strength-based assessment on the treatment and outcomes of students with behavioral disorders have shown positive results. Cox (2006) found that the outcomes for students with behavioral difficulties who were initially assessed using Epstein's *BERS-2* showed significantly better outcomes than those students whose therapist did not use the *BERS-2*, and who did not use a strength-based practice to treatment. Similar results were found by Barton, Macking, and Fields (2006). Other researchers have also begun to explore the implementation of positive psychology in the schools as part of treatment approaches (refer to Gilman, Huebner, & Furlong, 2009).

While researchers and practitioners have used strength-based assessment and interventions (e.g., Cox, 2006; Epstein, 1998; Rhee et al., 2001), their focus has been in addressing behavioral and emotional difficulties. A strength-based assessment framework focusing on learning and adjustment is still needed in the field of school psychology given the fact that most students referred for difficulties have learning problems (Eggen, & Kauchak, 2007). The closest reference to a strength-based framework addressing learning difficulties is described by Lubbe and Eloff (2004) who promote: 1) a paradigm shift in assessment focusing on student's strengths, resources, and capacities; 2) use of dynamic assessment; and 3) involvement of the various social systems in the assessment process. Lubbe and Eloff (2004) and Pohlman (2008) emphasize the need for a paradigm shift toward using a strength-based approach to assessment of learning. This paradigm shift is consistent to NASP's *Comprehensive and Integrated*

Model for Services (2010), as well as to the "leveraging strengths assessment and intervention model (LeStAIM)" that will be described in this article.

In summary, it has not been until the last decade that a strength-based focus to treatment and assessment has gained attention in school psychology (Nickerson, 2007). The delay in focus on strength-based assessment in school psychology may be due to various barriers. The main barrier has been a historical focus on psychopathology. Other barriers include a lack of research linking strengths to outcomes, clear legislative and professional role requirements, availability of appropriate standardized measures, and emphasis on strength-based assessment in practice. These barriers, however, are slowly dissipating as positive psychology has gained more momentum and there is continued focus on strengths and resiliency (Seligman, Steen, Park, & Peterson, 2005). There is also more research showing a link between strengths and improved outcomes (Barton, Macking, & Fields, 2006; Cox 2006). This research has prompted systemic changes, such as legislative mandates and professional role descriptions for school psychologists and assessment personnel who are "urged" to address strengths, assets, and risk factors (*National Association of School Psychologists Model for Comprehensive and Integrated School Psychological Services*, 2010; U.S. Department of Education, 1994). In addition, standardized strength-based assessment tools are being developed and current ones exist (Epstein, 1998; Park & Peterson, 2008; LeBuff, Shapiro, & Naglieri, 2009). With these developments, there is a need for a comprehensive assessment model that addresses students' strengths, assets, and risk factors to promote positive outcomes for students. The leveraging strengths and intervention model's (LeStAIM) framework to be described in this article is a comprehensive strength-based assessment model which can be used to assess all children referred for learning and social-emotional difficulties.

FIGURE 1. *The leveraging strengths assessment and intervention model (LeStAIM) is a theoretical strength based assessment framework based on theory.*



Leveraging Strengths Assessment and Intervention Model (LeStAIM)

Theoretical Model. The LeStAIM is a comprehensive theoretical assessment framework that emphasizes strengths to leverage weaknesses in cognitive, academic, and social-emotional functioning. The goals of the LeStAIM's framework are to: 1) understand the student's cognitive, academic, and

social-emotional strengths, assets, and needs; 2) assist the parents and the student to understand the student's learning and social-emotional strengths, assets, and needs; and 3) assist parents and related personnel with the leveraging of strengths as part of the development and implementation of individual and multi-systemic interventions to optimize developmental outcomes. A brief overview of the model will be provided, as a more detailed description is beyond the scope of this article.

As shown on Figure 1, the LeStAIM framework is a theory driven strength-based assessment model, which is based on ecological theory and uses standardized, informal, and dynamic assessment to investigate cognitive processing, learning, and adjustment based on neuroscience, psychology, educational psychology, and education. The assessment results facilitate the use of leveraging strengths to develop weaknesses by implementing individual and multi-systemic scientifically based interventions to promote positive developmental outcomes for students.

Assessment. The LeStAIM's approach is similar to the traditional psycho-educational assessment, which involves review of records, observations, interviews, informal and standardized testing. While traditional psycho-educational assessment focuses on addressing weaknesses without a clear understanding of what is causing the difficulties (Hale et al., 2010; Pohlman, 2008; Reynolds, 2008), the LeStAIM framework involves the use of learning theories to develop a hypothesis using strengths, assets, and protective factors. This hypothesis is then used to develop scientifically based interventions to optimize outcomes for children and youth. Research has shown that the number one predictor when solving a problem is a clear hypothesis of the problem, which leads to defined interventions and positive outcomes for students (Erchul & Matsen, 2010). Thus, the strength-to-strategy component of the assessment, which focuses on leveraging strengths to address weaknesses, becomes a very important component of the assessment.

Another difference is the use of dynamic assessment when using the LeStAIM approach. The LeStAIM approach uses dynamic assessment, which involves the use of qualitative information provided by the student during the assessment to understand processing, learning, and the zone of proximal development in order to determine what is going to assist the student in moving forward with his/her learning and adjustment. The dynamic assessment component involves paying close attention to the subtle behavior of the student while in the testing situation, as well as understanding the role of mediated learning and how this can be used to optimize student learning. (The reader is referred to the work Robinson-Zanartu (2000) for more information on dynamic assessment).

Table 1 illustrates a comparison between traditional psycho-educational and the LeStAIM framework. As described on Table 1, the LeStAIM framework is similar to the traditional assessment in the use of assessment techniques and tools. However, as previously described, the LeStAIM approach emphasizes a theory driven approach to interpreting information gathered in the assessment and formulating a hypothesis using a strength-based perspective to understand strengths, assets, and needs.

Unfortunately, many times traditional psycho-educational assessment and RtI do not focus on understanding learning, but rather on addressing weaknesses without a clear understanding of what is causing the difficulties (Hale et al., 2010; Pohlman, 2008; Reynolds, 2008). This is contrary to the problem-solving model (advocated by so many current school psychology leaders and by legislation), which emphasizes the understanding of difficulties and having a clear hypothesis which will assist in solving the problem. Research has shown that the number one predictor when solving a problem is a clear hypothesis of the problem, which leads to defined interventions and positive outcomes for students in consultation (Erchul & Matsen, 2010). It is expected that the same holds true in assessment, as a clear understanding of the problem should lead to scientifically based interventions which will optimize outcomes (Hale & Fiorello, 2004; Pohlman, 2008). Research in assessment outcomes is lacking for this reason. It is expected that research in assessment outcomes will follow once assessment models follow: 1) a clear theoretical approach to the relationship between assessment and interventions, and 2) a delineated approach to learning and adjustment that produce positive outcomes for students.

TABLE 1: *Comparison Between Traditional Psycho-educational Assessment and LeStAIM*

Traditional Assessment	LeStAIM
- Uses review of records, interviews, observations	- Uses review of records, interviews, observations
- Uses informal, curriculum-based, and standardized testing	- Uses informal, curriculum-based, and standardized testing
- Addresses strengths, but focuses on weaknesses	- Addresses weaknesses, but **focuses on strengths**
- Focuses on scores to classify performance compared to the norm	- **Interprets scores and uses dynamic assessment** to understand individual's learning
- Lacks a theoretical framework to derive at a hypotheses about the problem	- Uses learning theories, **neurodevelopmental constructs, positive psychology and resiliency, ecological theory** to derive at a hypothesis
- Is deficit based (will only address strengths as part of the IEP)	- **Focuses on strengths, assets, and needs to leverage students' strengths to address weaknesses**
- Focuses on eligibility	- Eligibility is addressed, but **focus is on empowering the student and parents** to optimize outcomes
- Standard recommendations	- **Recommendations and interventions uses the leveraging of individual and multi-systemic strengths based on hypothesis**

Learning. The LeStAIM approach emphasizes the understanding of learning based on brain functioning, cognitive developmental, and neuroscience. Because not everyone has knowledge or expertise in neuropsychology in the schools, the use of neurodevelopmental constructs, as described by Dr. Mel Levine (2001), provide a framework for understanding cognitive processing and learning.

Dr. Levine conceptualized eight neurodevelopmental constructs, which represent neurological capacities that are expected to become increasingly effective over time with experience (Levine, 2001). The eight neurodevelopmental constructs based on neuroscience are: memory, neuro-motor function, social cognition, attention, higher order cognition, temporal sequential ordering, language, and spatial ordering (c.f., Levine, 2001). It is important to note that Dr. Levine's neurodevelopmental constructs are consistent with various aspects of Cattell-Horn-Carroll (CHC) theory, which has been widely researched (Schneider & McGrew, 2004).

The neurodevelopmental framework describes learners in terms of profiles of strengths, assets, and weaknesses as opposed to using diagnoses, and provides an understanding of the relationship between these strengths and weaknesses to academic and social functioning (Levine, 2001). The main assumption when using neurodevelopmental constructs is that there is a mismatch between the strengths and weaknesses of a learner and school demands. Understanding this mismatch and focusing on strengths will result in more effective interventions for students (Levine, 2001). Therefore, focusing on strengths involves leveraging strengths to address weaknesses (this will be referred to as "strength-to-strategy" in reports to make it clear for parents to understand).

Positive Development. In addition to the neurodevelopmental constructs, the LeStAIM approach emphasizes positive development and the use of strengths through the use of resiliency theory and positive psychology, which provide a framework for conceptualizing what promotes positive development

in children and youth. Both positive psychology and resiliency theory emphasize the need to focus on individual strengths, as well as understanding the multiple systems which can support a student's development to foster strengths (Benson et al., 2006; Masten, 2001; Seligman, 2000).

The Search Institute has conducted much research involving what promotes positive development. Its research shows that focusing on a multi-systemic approach increasing the number of "developmental assets" (e.g., internal assets: commitment to learning, positive values, social competencies, positive identity; as well as external assets: supports, commitment to learning, positive values, social competencies, positive identity) across multiple contexts results in better outcomes for children and youth (Benson et al., 2006). (For further information, refer to the search institute's research articles and list of 40 developmental assets at: http://www.search-institute.org/40-develomental-asset).

Multi-Systemic. Promoting positive outcomes for students depends on many factors across various systems. Consequently, using an ecological perspective with a multi-systemic perspective is used when conceptualizing assessment and interventions. The LeStAIM framework, not only involves the student in the assessment process, but also in the intervention development stage to foster "self-determination" and "self-advocacy." Research on self-determination indicates that students need to be equipped with the knowledge, beliefs, and skills to promote their own academic success (Field & Hoffman, 2002). The LeStAIM approach also involves parents in the assessment and intervention process, as research shows that parent involvement is the number one predictor of students' academic success (Eggen & Kauchak, 2007). When possible, other systems (e.g., teachers, siblings, friends, school personnel, etc.) in the student's life are also involved to provide support in promoting the student's strengths and assets.

Using Strengths to Leverage Weaknesses

Interventions using a strength-based focus move beyond reduction of distress to the development of wellness and competence (Cosden et al, 2006; Laursen, 2003). The interventions are focused on using students' strengths to motivate them and assist them to develop their weaknesses. In some cases strengths are used to help the student "bypass" his/her weaknesses. Leveraging strengths is a framework that is consistent to what other professionals focusing on strengths have used when working with children and youth. For example, Cosden et al. (2006) describe an example of leveraging strengths by using the "identification of a child's preferences … to motivate the child to engage in other needed, but less preferred, activities" (p. 3). Other types of interventions using strengths have focused on students' strengths to address contextual, as well as individual weaknesses (Cox, 2006). Interventions using strengths and assets result in increased motivation and a sense of empowerment (Baker, Koegel, & Koegel,1998; Brookemen-Frazee, 2004; Cox, 2006).

The LeStAIM model focuses on positive student developmental outcomes, not just on the assessment process. The theoretical framework is described above. To clarify the process, a case study highlighting a strengths-based approach to assessment and intervention design follows.

Case Illustration

Adam, a ten-year old boy, was referred for a comprehensive psychoeducational evaluation by his mother to address her concerns related to his academic performance, assignment completion, and increasing reluctance to attend school. It was reported that Adam exhibited strengths in reading skills and verbal abilities. These strengths were in contrast to the significant difficulties that were noted in completing written tasks efficiently and completing tasks with fluency. Additional concerns included difficulty sitting still long enough to complete assigned work, especially when tasks required writing. Adam's assets, skills, and hobbies included use of computers, sports, art, building models, and creating buildings or machines with Legos©.

Assessment Results. Briefly, results from the assessment using the LeStAIM framework suggested that Adam was a bright student with significant neuro-developmental strengths in language, temporal-sequential ordering, memory, and higher order cognition. These strengths allowed him to progress academically in reading, applied mathematics, science and social studies. However, spatial ordering,

neuro-motor/ grapho-motor functions, attention, and social cognition were significant weaknesses for him. These observations help to explain his difficulties in math computation and written expression. His delayed grapho-motor skills provided an understanding of what led to his illegible handwriting. Similarly, challenges with spatial ordering explained his frequent letter and number reversals.

Linking profile to academic concerns. Adam's strengths allowed him to progress in reading and allowed him to learn and assimilate information presented at school, at home, and through his environment. Unfortunately, his strengths were overshadowed by several specific weaknesses. Primarily, Adam's struggle to sustain attention and stay on task had raised the diagnostic question about a possible attention deficit disorder. However, his inconsistent attention appeared to occur more often when Adam was involved in written tasks. His overall struggle with written tasks was influenced by his difficulty with spatial orientation and weak grapho-motor function. His failure to complete assignments and his reluctance to begin writing tasks seemed to be related to his struggles with spatial ordering and grapho-motor difficulties. In addition, at the core of his struggle with motivation was Adam's belief that he was not as "smart" as most of his peers. His mother and his teacher had told him he needed to try harder, but despite his efforts he continued to experience failure. Adam reached a point of near "shut down" and began refusing to attend school.

Leveraging strengths through a strength-to-strategy plan. During the meeting held to discuss the assessment results, Adam, his mother and his teacher were given a one page strength-to-strategy plan. This strength-to-strategy plan is shown on Table 2.

TABLE 2. *Adam's Strength-to-Strategy Plan*

Works great!	**Works:**	**Working on:**
- Using words: talking/understanding/reading - Recalling factual information - Math concepts - Using a computer - Building and creating with Legos©	- Mental math - P.E. and sports activities - Remembering order and sequences - Paying attention to things you enjoy	- Direction of numerals and letters - Writing details: spacing, spelling, capitals, end marks, indenting - Handwriting - Completing work - Staying motivated when things get hard

In the strength-to-strategy plan shown on Table 2, the three boxes visually display three areas that synthesized the findings from the strength-based assessment report: Works great (strengths and assets), works (adequacies), and working on (weaknesses). Understanding strengths and the reasons why difficulties arise is very important in the LeStAIM framework, as part of the emphasis is to empower the student, the parents, and other systems to support the student's success. Once there was an understanding of Adam's strengths and weaknesses, possible interventions and modifications were discussed to leverage his strengths to compensate for his weaknesses. While the examiner suggested various scientifically based strategies and interventions, and the teacher and parent cooperatively developed others, only a few of these interventions will be presented in this article due to space constraints.

The first group of interventions focused on empowering Adam to assist him to identify ways to leverage his strengths to support spatial confusions, grapho-motor difficulties, and motivation. Examples of how Adam could leverage his language strengths to support visual confusions through verbal cuing and self-talk were discussed and recommended. Research has shown that verbal cuing and self-talk enhance learning and metacognition (Eggen, & Kauchak, 2007). To illustrate this in the meeting, Adam was shown a specific example of how to leverage words to form a letter he had struggled to write

correctly: a cursive z. The process shown was to use a verbal cue such as: "draw a number 3 sitting on the line and loop it back up to form a z." Additionally, it was recommended that he form commonly reversed letters and numerals with Legos© and place them nearby to cue their directionality when writing. For b's and d's his verbal cue could reflect differentiating b's from d's through the first and last letter of his name.

The strategies to support him at school included accommodating grapho-motor tasks by accelerating keyboard instruction to bypass weak grapho-motor skills, given that the computer use was one of Adam's strengths. Additional strategies were implemented to assist his grapho-motor skills, such as enlarging math calculation sheets to obtain more white space, turning binder paper horizontally, and to using lines to eliminate confusion between columns for place value. Considering Adam's strength in higher order thinking, metacognitive strategies were also suggested, such as the use of colored pens to highlight mixed function signs when adding, subtracting, multiplying and dividing. In addition, Adam's mother and teacher were to create a motivation program with well-defined rewards and consequences for completing homework on time. While not every intervention can be research-based, the majority of the interventions used for Adam were supported based on educational foundations (refer to Eggen & Kauchak, 2007).

Multi-systemic involvement. Adam was followed up via educational therapy provided by one of the authors. In the schools, this type of follow up would typically be provided by a special educator and the school psychologist could assist via consultation. The multi-systemic involvement afforded by the LeStAIM framework was maximized by involving Adam, the parent, and teacher to encourage them to work collaboratively to support Adam. Adam was observed to embrace a new perspective based on his understanding of his learning difficulties. He understood that his unhappiness at school was tied to the fact that his weaknesses in grapho-motor and spatial orientation made it difficult to achieve certain tasks at school and at home and his frustration with his difficulties impacted his motivation. After learning about his strengths, Adam was able to tap into them by using language and metacognitive strategies to work on written tasks associated to written language and math.

Summary

The *National Association of School Psychologists (NASP) Model for Comprehensive and Integrated School Psychological Services* (2010), federal initiatives and mandates, and experts in the field of assessment have called for the comprehensive assessment of students to: understand students' pattern of strengths and weaknesses, explain areas of deficit, and derive scientifically based interventions to increase students' positive development and outcomes (Hale et al., 2010; Reynolds, 2008; U. S. Department of Education, 1994; 2006). Positive psychology, research on resiliency, and emerging research on strength-based treatment and assessment further support the use of strengths, assets and protective factors to optimize students' developmental outcomes (Benson et al., 2006; Ogg, Brinkman, Dedrick, & Carlson, 2010; Seligman et al., 2005). Current assessment practices in the schools, however, focus on deficits (Epstein, 1998; Nickerson, 2007). It is clear that professional organizations, such as NASP, and federal initiatives are promoting a paradigm shift to use strengths in assessment practices in the schools.

Debates as to what entails the best approach to assessment are often based on specific approaches that either focus on old practices in assessment (e.g., use of discrepancy model or strict use of normative data) or move toward what some find to be "new" practices, such as RtI. It is clear that the sole reliance on the discrepancy model is not going to assist children develop optimally. Similarly, sole reliance on RtI will not solve the problems for many children who experience various difficulties outside of the reading or math intervention models that may be used as part of RtI programs in the schools. A comprehensive theoretical assessment framework that incorporates theory and research in neuroscience, psychology, and education to facilitate the understanding of students' learning, development, and adjustment, and uses of strength-based focus that leads to better developmental outcomes is needed in the field of school psychology.

The LeStAIM framework is a comprehensive theoretical assessment model that uses ecological theory, neurodevelopmental constructs based on neuroscience, psychology, educational psychology, and education; and considers research in positive psychology and resiliency to assess strengths, assets, and protective factors to understand cognitive processing, learning, behavioral, and social-emotional functioning of all children. The goals of the LeStAIM's framework are to: 1) understand the student's cognitive, academic, and social-emotional strengths, assets, and needs; 2) assist the parents and the student to understand the student's learning and social-emotional strengths, assets, and needs; and 3) assist parents and related personnel with the leveraging of strengths as part of the development and implementation of individual and multi-systemic interventions to optimize developmental outcomes. In order to optimize student's positive development, school psychologists need to actively engage in a paradigm shift in assessment and intervention practices toward a strength-based focus and away from a deficit model. The LeStAIM framework supports this paradigm shift by incorporating a theory driven approach to strength-based assessment and intervention that will optimize outcomes for children, youth, and families.

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TOC

Performance of School Age Reading Disabled Students on the Phonological Awareness Subtests of the Comprehensive Test of Phonological Processing (CTOPP)

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This study examined the performance of reading disabled children on the two Phonological Awareness Subtests of the Comprehensive Test of Phonological Processing (CTOPP). Participants performed significantly different on these two subtests with a poorer performance on the Elision subtest than Blending Words. In addition, the two subtests were not correlated for this group. Results suggest that, for reading disabled children, interpretation of the composite score may not be as useful as considering the individual subtests scores.

KEYWORDS: phonological processing, CTOPP, dyslexia, decoding, reading disabilities

This study was inspired by our observations over many years that reading disabled students, when evaluated for a phonological processing disorder, do much better with sound blending tasks than with tests of sound manipulation. Sound blending scores are often average or close to it. When strong sound blending scores are combined with weaker phoneme awareness measures to form the recommended composite score, they obscure a possible phonological awareness deficit. The resulting insignificant finding creates problems on two levels. Conceptually, the near average composite score seems to contradict well-established research regarding the importance of phonology in reading disabilities. Practically, use of the composite score makes it difficult to identify a needy child for special education services because no processing disorder is found.

A substantial body of research, much of it dating from the last quarter of the last century, finds phonological awareness to be a core deficit in specific reading disability or dyslexia (Christo, Davis & Brock, 2009; Fletcher, Lyon, Fuchs & Barnes, 2007; Lieberman & Shankweiler, 1989; Shaywitz, 1996; Velutino, Fletcher, Snowling & Scanlon, 2004). To the surprise of many, weaknesses in phonology proved to be more predictive of future reading failure than general intelligence especially for pre-literate and beginning readers (Share, Jorm, McClean & Mathews, 1984; Shaywitz, 1996, 2004; Torgesen et al., 1999). Results of this established research have been incorporated into the definition of dyslexia developed for the International Dyslexia Association:

Dyslexia is a specific learning disability….characterized by difficulties with accurate and/or fluent word recognition. These difficulties typically result from a deficit in the phonological component of language (Lyon, Shaywitz & Shaywitz, 2003, p.1).

It is therefore incumbent upon the practitioner to include measures of phonological awareness in the evaluation of a struggling reader. This should help in demystifying the reading problem, deciding on appropriate interventions, and documenting progress or the lack thereof (Christo, Davis, & Brock, 2009).

The early studies that established the phonology-reading link used a variety of experimental, non-standardized procedures for assessment, intervention and prediction of future performance (Bradley & Bryant, 1983; Rosner & Simon, 1971; Yopp, 1988). Subsequent research has led to a more nuanced

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approach, both in defining the construct (Cassady, Smith, & Putnam, 2008; Sodoro, Allinder, & Rankin-Erickson, 2002) and in operationalizing it with nationally standardized measures (Berninger, 2007; Elliott, 2007; Kaufman & Kaufman, 2004; Martin & Brownell, 2005; Wagner, Torgesen & Rashotte, 1999; Woodcock, McGraw, & Mather, 2001).

The current research literature distinguishes between phonological processing, phonological awareness, and phonemic awareness. Phonological processing is an over-arching construct that can, depending on the scholar's definition, refer to the "automatic…use of sounds to understand spoken words" (Walsh, 2009, p. 214), or "the use of phonological information, especially the sound structure of one's oral language, in processing written language" (Wagner, Torgesen & Rashotte, 1999, p. 2). Phonological awareness, under the umbrella of phonological processing, has been defined as conscious awareness of the sound structure of spoken words (Stahl & Murray, 1994; Wagner, Torgesen, & Rashotte, 1999; Walsh, 2009). Phonemic awareness, a sub-category of phonological awareness, refers to the ability to isolate and manipulate the smallest distinguishable sound unit that conveys meaning: the phoneme (Torgesen et al., 1999).

The data presented in this investigation will focus on phonological and phonemic awareness. The multiplicity of methods used to assess phonological awareness can be ordered as to level of task difficulty. This work has been summarized by Cassady, Smith, and Putnam (2008) in their fine-grained analysis of the development of phonological awareness skills. Their work also examines the role of linguistic complexity and phoneme position. Linguistic complexity refers to the size of the sound unit to be worked with, from words, syllables, onset and rhymes (b/ike, l/ike) to phonemes (b/i/k). Task difficulty refers to the operation the child is required to do: Say rhyming words, tap out syllables, find the word that is different, match a beginning sound to a picture of a word, combine two or more sounds to make words, and delete or substitute sounds in words. Position refers to the placement of a sound within a word; beginning, middle, or end.

There is general agreement as to a developmental progression for task difficulty, position, and linguistic complexity, although some controversy regarding the causal role of elements of this hierarchy continues (Goswami, 2002). Reviewing task difficulty, Adams (1990) constructed a five level phonemic awareness hierarchy as follows: 1) Knowledge of nursery rhymes, 2) Oddity tasks (choosing the word with the beginning, middle or ending sound that doesn't belong), 3) Blending/syllable splitting, 4) Phoneme segmentation, and, 5) Phoneme manipulation. Syllable splitting refers to the task of isolating the initial phoneme of a word. With respect to blending phonemes, Adams, (1990) concluded that, "…they have been shown to be significantly easier than segmentation and deletion tasks" (p. 76).

Concerned that Adams' (1990) hierarchy confounded task difficulty and linguistic complexity, Cassady, Smith, and Putnam (2008), after isolating these variables in an assessment tool named *Standardized Assessment of Phonological Awareness (SAPA)*, concluded that "[their] results support the order of development offered by Adams" (p. 529). Even though researchers differ in details of their models, a table of comparisons presented by Cassady et al. (2008, p. 517) shows a consensus that deleting or substituting phonemes are at the top of the task difficulty hierarchy, while sound blending is placed at an earlier developmental level. (See also Pufpaff (2009), Shatschneider et al., 1999; Stanovich, Cunningham & Cramer, 1984; Wagner, Torgesen & Rashotte, 1994; Yopp, 1988). Cassady et al. (2008) also reported two other findings from their administration of the SAPA in the fall, winter and spring to a sample of 203 kindergarten children over the course of the 2002-2003 and 2003-2004 academic years. First was that "blending generally precedes segmenting tasks when holding linguistic complexity constant" (Cassady et al., 2008, p. 526). And second, segmenting tasks in turn precede phoneme deletion and manipulation in the developmental sequence.

A related finding from the Cassady et al. (2008) study was that "…when tested midway through their kindergarten year the students showed a marked increase in performance gains in the blending and segmenting tasks….we interpret this sudden change to be evidence of explicit phonological training, which was the primary curriculum goal during that period of instruction" (pp. 525-526). Cassady's

(2008) research documents that the beginning reading curriculum has changed significantly since the early studies demonstrated the importance of phonology to reading. Much of the work on phonological awareness in the last century was done with kindergarten students who were very beginning readers given little systematic instruction in sound awareness (Bradley & Bryant, 1983; Liberman & Shankweiler, 1985; Perfetti, Beck, Bell, & Hughes, 1987).

In time, the early reading curriculum was influenced by the ongoing research. While sound blending has previously been an intrinsic part of code oriented reading programs (children learn to "say it fast" as in SRA DISTAR (Engelmann & Bruner, 1983), it is now explicitly taught in kindergarten and first grade through state-adopted basic reading texts. (For example, see Houghton-Mifflin Reading: A Legacy of Literacy, 2003.) The more complex tasks of phoneme deletion and substitution, although included with sound blending in some curriculum standards, (e.g. California Common Core Content Standards 2010), are not directly required in decoding new words, and are probably not as intensively practiced in the same way as is blending sounds to make words. Because sound blending is less complex, appears earlier developmentally, and is now also more routinely taught, most children in the early elementary grades may become proficient at this task.

The importance of assessing phonology in reading disability evaluations is now recognized, and numerous well-standardized measures of phonological awareness are available. Sound blending, as an easily administered phonological awareness task, plays a significant role in these diagnostic processing tests.

Nationally standardized phonology measures now available include the Comprehensive Test of Phonological Processing (CTOPP, Wagner, Torgesen, & Rashotte, 1999); Process Assessment of the Learner (Pal II, Berninger, 2007); the Test of Auditory Processing Skills, 3rd Edition (TAPS -3, Martin & Brownell, 2005); and diagnostic subtests of global cognitive and their co-normed achievement tests including the Woodcock-Johnson III Cognitive and Achievement Batteries (W-J-III, Woodcock, McGrew, & Mather, 2001); the Differential Ability Scales, Second Edition (DAS-II, Elliott, 2007); and the Kaufman Test of Educational Achievement, Second Edition (KTEA-II, Kaufman & Kaufman, 2004). The DAS-II and KTEA–II phonological awareness scales consist of a number of tasks including sound blending, which generally follow the progression outlined by Adams (1990). Both these instruments yield one overall score, normed to age 12 or 6th grade. The KTEA-II sound blending items are given only at the kindergarten level, however. On the other hand the Sound Blending subtest of the TAPS-3 is normed to age 18, while the Sound Blending test included in the Woodcock–Johnson III Tests of Cognitive Abilities Standard Battery yields standard scores through age 80 + !. (Ceiling effects are clearly evident.) Both the TAPS -3 and Woodcock-Johnson include sound blending as part of a composite score; the TAPS-3 provides a Phonologic Index and the Woodcock-Johnson an Auditory Processing Factor.

The Comprehensive Test of Phonological Processing (CTOPP, Wagner, Torgesen & Rashotte, 1999), the subject of the current study, has been widely used as a component of reading evaluations (Christo, Davis & Brock, 2009; Haight, 2006; Hurford, 2003). The CTOPP provides assessment in Phonological Awareness, Phonological Memory and Rapid Naming from ages 5 through 24. There are separate forms for ages 5 and 6, and 7 to 24. The Phonological Awareness Composite for ages 5 and 6 consists of three subtests, Blending Words, Elision, and Sound Matching, while only Elision and Blending Words are included in the 7-24 year form. Blending Words items vary in length and complexity from two to 10 phonemes; Elision begins by asking the student to delete initial phonemes, then progresses to deletion of final and medial consonants and to phonemes embedded in a consonant cluster. A supplementary test of Blending Nonwords is also available. All subtests are given equal weight in computing the Phonological Awareness Composite; thus sound blending results contribute 33% of the variation to the ages 5 and 6 composite, and 50% of the variation to the 7-24 year phonological awareness score.

The CTOPP test manual contains two predictive criterion validity studies which bear directly on the purpose of this paper (Wagner, Toregesen & Rashotte, 1999, pp. 90-97). The data show substantially lower correlations with reading skill criterion variables for the Sound Blending than the Elision subtest, especially for the 7-to-24 year-old version. Of note are results reported of a concurrent and predictive

validity study with subjects drawn from a clinic for learning-disabled students (median age 9). At the time these students were given the CTOPP, and also six months later, the Word Attack and Word Identification subtests of the Woodcock Reading Mastery Test-R, the Gray Oral Reading Test-3, and the Wide Range Achievement Test-3 were given. The manual presents partial correlations (controlling for age and corrected for reliability) between all of the reading achievement measures and the CTOPP subtest scores for both testing times. The average concurrent correlation between six reading measures and the CTOPP Elision subtest score is r=.52, while the Blending Words subtest average correlation with these reading measures is r=.19. Average correlations between the Elision and Sound Blending Words subtests (given at time one) and the same criterion variables are somewhat higher six months later, at r=.62 and r=.38 respectively. Thus we see that the utility of Blending Words in explaining variation in reading achievement appears to be significantly less than the more complex Elision subtest.

The value of sound blending in differentiating among skilled and struggling readers is in question because of the relative simplicity of the task as shown in the established developmental hierarchies discussed above. Furthermore, current reading curricula provide intense training in sound blending, thus practice effects may impact student scores. The CTOPP manual criterion validity data (Wagner, Torgesen & Rashotte, 1999) indicate that skill in sound blending in elementary age reading disabled students is minimally related to success in reading. For all of these reasons, inclusion of sound blending test data as part of a reading disability evaluation becomes problematic. Use of an unweighted measure of sound blending in a composite score, may provide an inaccurate evaluation of the phonological status of reading disabled students. This in turn could lead to a significant under estimation of the phonologic core deficit that, at this point in time, is assumed to underlie dyslexia/reading disability.

To shed light on the questions surrounding sound blending as a useful phonological processing measure our study examines the relationships among subtest scores within the Phonological Awareness, Phonological Memory, and Rapid Naming Composites of the CTOPP. Our sample includes only school age students who meet stringent criteria for a reading disability.

METHODS

Participants

Participants were selected from two clinical data sets. One data set was the population of students identified as having a specific learning disability with goals in reading in a large suburban school district. The second data set consisted of students who had been referred to a university-based assessment clinic. Participants were selected according to the following criteria:

1. Standard scores on a measure of real word reading or nonsense word reading below a score of 85, using either the Woodcock-Johnson Test of Achievement III, or the Wechsler Individual Achievement Test; and
2. Standard score on a measure of verbal ability above a score of 85, using either the Woodcock-Johnson Test of Cognitive Abilities III, the Wechsler Intelligence Scale for Children IV, or the Kaufman Assessment Battery for Children II; and
3. Scores available for all six core subtests of the Comprehensive Test of Phonological Processing.

To secure participants for the study an excel database of all clients at the university-based clinic was created. Filters were used to select students who met above criteria for both data sets. Visual inspection of student files was used to select participants who met the above criteria from the school district special education records. All participants meeting the above stated criteria were then placed into a new excel database for analysis. SPSS 18 was used to perform data analysis. Paired sample t-test and Pearson Correlation coefficients were determined for the selected variables. From a data set of 350 potential participants accumulated from both data sets, 48 met the above criteria and were used in this study.

The demographic characteristics as well as means for the verbal ability and real and pseudoword reading measures are listed in Table D.

TABLE D. *Ranges and Means for Demographic Variables, Verbal Ability and Word Reading Scores for Participants (n=48)*

Variable	Range	Mean
Age	6-15	9.42
Grade	1-9	3.82
Verbal Ability Stan Score	86-107	95.44
Real Word Read Stan Score	48-101	78.31
PseudoWord Read Stan Score	62-96	79.69

It is important to note that the means for verbal ability, real word reading and pseudoword reading are derived from scores on different tests. The three tests used to measure verbal ability (Woodcock-Johnson Test of Cognitive Abilities III, the Wechsler Intelligence Scale for Children IV, or the Kaufman Assessment Battery for Children II) are commonly used for this purpose. The two tests used to measure word reading ability (Woodcock-Johnson Test of Achievement III, or the Wechsler Individual Achievement Test) are also commonly used for this purpose. The use of different tests to establish criteria for participation was deemed acceptable for this study as the purpose was to identify a population with average level verbal ability in general and with poor performance on word reading. Since these tests are routinely used in schools to measure these variables they were considered appropriate for establishing criteria. In addition, these scores were not used as part of the analysis and only for identifying participants.

RESULTS

The range, means and standard deviations for the CTOPP subtests used in this analysis are presented in Table E.

TABLE E. *Ranges, Means and Standard Deviations for CTOPP Subtests (n=48)*

Subtest	Range	Mean	Stand. Dev.
Blending Words	5 -14	9.27	1.97
Elision	3-13	7.50	1.90
Memory for Digits	3-15	8.70	2.85
Nonword Repetition	5-17	9.22	2.59
Rapid Digit Naming	1-15	7.71	2.62
Rapid Letter Naming	2-13	7.76	2.58

There was considerable variation among scores for the subtests of the CTOPP. In addition, visual inspection of scores suggested that there was considerable intra-individual variation among subtest scores as well.

Correlations

Correlations (Pearson Correlation Coefficient) between the two subtests in each of the Composites of the CTOPP were derived and are presented in Table F. The Phonological Awareness Composite is comprised of Elision and Blending Words. The Phonological Memory Composite is comprised of Nonword Repetition and Memory for Digits. The Rapid Naming Composite is comprised of Rapid

Letter Naming and Rapid Digit Naming. These Composites were arrived at during CTOPP development through factor analysis (Wagner, Torgesen & Rashotte, 1999).

TABLE F. *Correlations Among Subtests of CTOPP*

	Blending Words	Elision	Memory for Digits	Nonword Repetition	Rapid Digit Naming	Rapid Letter Naming
Blending Words		.21+	-.001	-.034	.016	-.055
Elision			.221	.379	-.111	.013
Memory for Digits				.428*+	-.079	-.056
Nonword Repetition					-.142	-.045
Rapid Digit Naming						.826*+

*significant at .01 level
+correlations of primary interest

Both the Phonological Memory and Rapid Naming Composites showed significant correlations between their two respective subtests. The correlation coefficient for the two tests of the Phonological Memory composite (Nonword Repetition and Memory for Digits) was significant at the .01 level (r=.43), but is still considered a moderately low correlation (Sattler, 2008). The correlation coefficient for the two tests of the Rapid Naming Composite (Rapid Letter Naming and Rapid Digit Naming) was significant at the .01 level (with a strong correlation of r=.83), considered a high correlation by Sattler (2008). In contrast the correlation coefficient for the two tests of the Phonological Awareness Composite (Elision and Sound Blending) was not significant (r=.21).

Paired Samples t-test

To further investigate the difference in performance for this population on the tests making up the separate composites, paired sample t-tests were performed on the pairs of tests making up each of the composites.

There was no significant difference between the scores for the two tests of the Phonological Memory Composite, Memory for Digits (M=8.71 SD=2.8) and Nonword Repetition (M=9.2, SD=2.6): t=-1.12, p=.27. There was no significant difference between the scores for the two tests of the Rapid Naming Composite, Rapid Letter Naming (M=7.76, SD=2.6) and Rapid Digit Naming (M=7.71, SD=2.62): t= -.194, p=.847. There was a significant difference between the two tests of the Phonological Awareness Composite, Elision (M=7.5, SD=1.9) and Blending Words (M=9.27, SD=1.98): t=-5.04, p=.000.

DISCUSSION

We initiated this study as clinicians trying to make sense of why we often found our students with basic word reading problems having differing scores on the Elision and Blending Words tasks. As we know, normed tests are standardized primarily on normal populations with much smaller numbers of students with learning disabilities or processing issues included in the standardization sample. Over the years we had waited for an analysis such as the one presented here to confirm or disconfirm our clinical impressions. Since we found no such study we decided to pool our clinical resources and analyze our data. These findings indicate to us that children with word reading difficulties, as we have defined them above, do perform differently and more poorly on the Elision subtest than the Blending Words subtest

of the Phonological Awareness Composite of the CTOPP. Further, the mean scores of these two subtests are statistically significantly different from each other. This leads us to conclude that the composite score should not be considered the best measure of "phonological awareness" for students exhibiting reading disabilities as defined in this article and that the two subtests should be considered separately in trying to understand, classify, and treat students with word reading disorders.

We would also like to note that these results are supportive of the hierarchical models proposed by Adams (1990) and Cassidy et al., (2008) with the Elision task, a task of phoneme manipulation, being more likely to capture the weakness of our students than Blending Words. This then also supports the aforementioned studies (Cassady et al., 2008; Pufpaff, 2009; Shatschneider et al., 1999; Stanovich, Cunningham and Cramer, 1984; Wagner, Torgesen and Rashotte, 1994; Yopp, 1988) finding that tasks which require the deletion or substitution of phonemes are more difficult than the blending of phonemes.

Our data regarding Rapid Naming may be helpful in clarifying the conceptual status of these measures. Rapid Naming tests have been a matter of much study and controversy. Should Rapid Naming be subsumed under the rubric of phonological processing (Torgesen, Wagner & Rashotte, 1999), be conceptualized as a separate cognitive process (Wolf & Bowers, 1999), or viewed as a marker for processing speed? (For a literature review, see Christo & Davis, 2008.) The pattern of correlations, with very high correlations between the two Rapid Naming subtests and no or negative correlations with all other CTOPP subtests does lend empirical evidence to the hypothesis that Rapid Naming is a cognitive function distinct from phonological processing in children who are poor readers. (See Table F above.)

The lack of correlation between the CTOPP Blending Words subtest and the memory subtests, Memory for Digits and Nonword Repetition (-.001 and -.034 respectively) is also of interest. Some researchers (and no doubt practitioners) have suggested that sound blending items, especially nonword sound blending, discriminate between individuals because of a heavy load on short term memory (Wagner et al., 1993). The hardest Blending Words item on the CTOPP contains 10 phonemes which in theory have to be recalled sequentially. Our data do not support a relationship between short term memory and sound blending. In the experience of one of the authors, students who pass long sound blending items usually pull the correct word from long term memory after hearing no more than three to five sounds. Retrieval fluency and vocabulary development, rather than short term memory may be involved in success with very long sound blending items.

LIMITATIONS OF THE STUDY

Our sample is small. To further understand the implications of these data, we recommend replication with a second, larger sample of poor readers using the same assessment tools to define selection criteria. The consistency of these data at different ages and reading levels needs to be examined. As we have suggested, sound blending may be more predictive of reading skill with young, beginning readers. We have used only one measure of sound blending. It would be instructive to repeat this study with sound blending tests other than from the CTOPP.

SUGGESTIONS FOR FURTHER RESEARCH

The utility of including a sound blending measure in phonological processing assessment of school age reading delayed children may be in question. The Phonemic Awareness Clinical Cluster of the Woodcock-Johnson III is of interest, because, as in the CTOPP, the subtest Sound Blending is given equal weight as its partners, Incomplete Words and Sound Awareness in an overall cluster score.[1] While examining the Woodcock-Johnson III it may be well to look more closely at the role of the Sound Blending subtest within the Auditory Processing Broad Ability cluster in a reading disabled sample. The

[1] The phonemic awareness cluster consists of the subtests Sound Blending and Incomplete Words if only the Cognitive Battery is given, but includes the Sound Awareness subtest of the Achievement Battery as well if this test is also given.

Woodcock-Johnson III Technical Manual (McGrew & Woodcock, 2001) reports a modest correlation of. 23 between Sound Blending and Auditory Attention for 6-to-8 year olds in the standardization sample. A closer examination of the cognitive correlates of sound blending skill may be warranted. These would include short term memory, vocabulary development, long term retrieval, and processing speed among other variables.

Finally, as indicated above, the relationship between various measures of phonological awareness with reading achievement needs to be systematically examined for each grade/age level through high school.

CODA

We have speculated about a number of possible reasons for our CTOPP findings, including when the test was standardized, the changes in reading curriculum young students are currently receiving, and the level of difficulty of the two tasks students are asked to perform. We have been informed that the CTOPP is being revised and may well be out by next summer. We hope that the information presented in this article is considered in order to address the sound blending problem in the new edition.

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TOC

Decreasing Reading Differences in Children from Disadvantaged Backgrounds: The Effects of an Early Literacy Intervention

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Children from low socioeconomic backgrounds (SES) are at increased risk of reading problems. Although phonological awareness consistently emerges as a critical literacy skill for children, little research exists regarding the effects of the acquisition of phonological awareness skills on decreasing the reading achievement gap between children of different SES levels. In this study, 50 first graders from low SES backgrounds were randomly assigned to receive10 weeks of phonological awareness intervention or a control condition. In addition, 25 first graders from middle-high SES backgrounds served as a comparison group. A significant difference in phonological awareness skills was found between children in the low SES intervention group who received the phonological awareness intervention and similar children in the control group who did not receive the intervention. Reading skill differences between the low SES intervention and control groups were found at follow-up 24 weeks later but not immediately following intervention. Although the gap in reading skills of children from the low SES intervention group and the middle-high SES comparison group decreased, reading differences remained. Implications of findings with regard to p**r**evention and identification of children at-risk for reading difficulties, as well as planning and implementing early literacy intervention for children from disadvantaged backgrounds are provided.

KEYWORDS: achievement gap, early literacy intervention, phonological awareness, reading, socioeconomic status

While 45% of fourth graders not eligible to receive free and reduced price lunch scored at or above proficient in reading, only 17% of eligible fourth graders scored at or above proficient in reading (NAEP, 2009). These data are especially disheartening given that 21% of America's children live below the federal poverty level, and 42% live in low-income homes (White, Chau, Aratani, 2010). Being raised in poverty puts children at increased risk not only in reading, but for a wide range of problems, such as lower achievement, repeating a grade, eligibility for special education, and dropping out of high school (Herring, McGrath, & Buckley, 2007; Oh & Reynolds, 2008). Although family income and education, per se, do not directly shape children's achievement, there is a significant and positive association between family SES and a number of home and school ecological processes predictive of children's later language and reading abilities. Furthermore, children who experience reading difficulties early in their school career continue to struggle as they advance in grade (Catts et al., 2008; Young et al., 2002) resulting in an increasing gap in skills between successful and struggling readers (Francis et al., 1996; Juel, 1988; Torgeson &Burgess, 1998). Hence, children from low income homes are disproportionately at-risk for developing persistent learning problems that have long-term detrimental outcomes.

A number of reasons have been provided to explain the poor academic performance of children from low SES backgrounds. For instance, the results of a large body of research indicate that children from low SES backgrounds do not have the same opportunities to engage in literacy-related activities as

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children from higher SES backgrounds (Bradley et al., 2001; Pianta et al., 2002). The quality and number of shared reading activities is lower, as well as trips to the library and exposure to varied vocabulary and syntax (Baker, Serpell, & Sonnenschein, 1995; Goldenberg, 2001; Roberts, Jurgens, & Burchinal, 2005; Hart & Risley, 1995). Preschool programs serving children from low SES backgrounds provide varied access to print, and fewer opportunities to engage in literacy-related activities (McGill-Franzen, Lanford, & Adams; 2002). Last, researchers investigating preschool teachers' beliefs regarding the importance of teaching specific skills found that teachers serving children from low SES backgrounds rated social-emotional skills significantly higher than language, literacy, and early math skills (Kowalski, Pretti-Fonczak, & Johnson, 2001). Outcomes for children from low SES backgrounds do not appear to be much better when they enter grade school as they are more likely to attend larger schools with a higher student-to-teacher ratio, high teacher turn-over, and be taught by a teacher who is not certified in the subject taught and has less than three years teaching experience (Goldhaber, 2002; Lupton, 2005; Nye, Konstantopoulos, Hedges, 2004; Rowan, Correnti, & Miller, 2002; Tajalli & Opheim, 2005).

Given the differential resources and complexity of home and neighborhood environments in low SES communities, it is not surprising that these children frequently have low phonological awareness skills (Dickenson & Snow, 1987; Smith & Dixon, 1995). Phonological awareness, an important precursor to reading, is the understanding that words are composed of individual sounds that can be manipulated (Simmons & Kame'enui, 1998). Results from a large body of independent research indicate that skills in phonological awareness directly affect the ease of reading acquisition and subsequent reading achievement (National Reading Panel, 2000; Whitehurst & Lonigan, 2000). Moreover, phonological awareness can be systematically and effectively taught to young children (Nancollis, Lawrie, & Dodd, 2005), with instruction being the most effective when taught to children in the early grades, such as preschool, kindergarten, and first grade (Schuele & Boudreau, 2008). Effective instructional strategies include rhyme detection (e.g., asking children which of three verbally presented words rhyme; Majsterek, Shorr, & Erion, 2000); blending (e.g., teaching children to blend three sounds together to make a word; O'Connor, Jenkins, Leicester, & Slocum, 1993); and segmenting (e.g., identifying individual sounds in words, such as /m/ /a/ /t/ in "mat"; O'Connor, Jenkins, Leicester, & Slocum, 1993). Still, the relation between SES, phonological awareness, and subsequent reading achievement has been the focus of only a few studies. Bowey (1995) examined differences in phonological sensitivity and reading achievement in children from high and low SES backgrounds. Measures of phonological awareness, and verbal and performance ability were administered to children in preschool, and later at the end of first grade. Strong differences were evident between SES groups on preschool verbal and performance ability, first grade phonological awareness, and first grade reading achievement. Differences between SES groups continued to be significant even when verbal and performance ability were statistically controlled. However, when measures of phonological awareness were entered as covariates, SES differences in first grade reading skills were no longer significant suggesting that differences in phonological awareness skills may account for the reading achievement gap between low and high SES groups. Similarly, Raz and Bryant (1990) investigated the role of SES in children's development of phonological awareness and reading skills. Again, significant differences were reported on phonological awareness measures between SES groups. When performance on phonological awareness tasks was controlled, however, no differences were found between the groups on reading tests one year later. These results illustrate that differences in reading achievement between children from low and high SES backgrounds may be explained by differences in phonological awareness skills in preschool and kindergarten.

The results of these studies and their proposed implications illustrate a "Mediating Factor Model," suggesting that SES may indirectly affect reading achievement by its impact on the acquisition, or lack thereof, of phonological awareness (Noble, Farah, & McCandliss, 2006). That is, knowledge of phonological awareness may decrease SES-related differences in reading for young children. The correlational nature of these studies, however, does not permit causal statements regarding phonological awareness, or lack thereof, as an explanation for differences in reading achievement between children from different SES groups. Thus, it is unclear whether phonological awareness, and not some other

variable(s), may explain some of the differences in reading performance between children from low and high SES backgrounds.

This study expands upon a previous study investigating the intervention validity of the Phoneme Segmentation Fluency task (PSF) of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Hagans, 2008). Results from the previous study indicate that instruction informed by frequent monitoring of students' phonological awareness skills, as measured by the PSF task, leads to improved phonological awareness skills to the extent that the phonological awareness skills of children from low SES backgrounds were comparable to children from middle-high SES backgrounds after 10 weeks of instruction. Although phonological awareness is an important precursor to learning to read, it is not a critical reading skill in isolation, and little evidence exists on whether gains in phonological awareness made by children from low SES backgrounds in response to phonological awareness instruction translate to increased oral reading fluency skills comparable to children from higher SES backgrounds. This is especially relevant in light of the research conducted by Good and colleagues (2002) on the predictive validity of the DIBELS measures as indicators of risk in achieving subsequent literacy outcomes.

The focus of this study was to examine whether differences in the oral reading fluency skills of children from low and high SES backgrounds decrease as a result of participating in an early literacy intervention primarily centered on explicit phonological awareness instruction. If differences in reading skills between children from low and high SES backgrounds decrease due to preexisting group differences in phonological awareness skills, instruction in phonological awareness should decrease reading differences between the two groups. Furthermore, the reading performance of children from lower SES backgrounds would increase and "catch up" to children from higher SES backgrounds as a function of receiving instruction in phonological awareness. As a function of receiving the phonological awareness intervention, quantitative indicators of risk related to later literacy outcomes were examined.

METHOD

Participants

Seventy-five first-grade students from three elementary schools in a small city in the Pacific Northwest participated in the study. Selection of participants was predominantly based on participants attending a school with at least 50% or more students receiving free or reduced-price lunch. School 1 served as the low SES intervention and control site where all three first grade classrooms participated in the study. Students within each classroom from whom parent consent was obtained were randomly assigned to either an intervention group receiving the phonological awareness instruction (n=26) or a control group (n=24). Approximately 58% of students in School 1 received free or reduced-price lunch; 88% were considered White or Caucasian; 5% Hispanic; 4% Native American; 2% African American; and 1% Asian American. Fifteen children from two different classrooms at School 2 and 10 children from three different classrooms at School 3 served as a high SES comparison group, with approximately 3% (School 2) and 28% (School 3) of students receiving free or reduced-price lunch. Ethnicity for School 1 and 2 was as follows: 93% White or Caucasian; 4% Asian American; 1% Hispanic; 1% Native American; and 1% African American (School 2); 92% White or Caucasian; 5% Hispanic; 1% African American; 1% Native American; and 1% Asian American (School 3). One participating student in School 1 was identified as a student with an intellectual disability and received full-inclusion special education services. Although the student participated in an intervention group, her data were not included in the analysis. No other participating first graders were identified as having a disability and/or requiring supplemental instructional services.

The existing language arts curriculum used in the district was Scott Foresman's *Celebrate Reading* (1997) basal reading program and was taught by assigned classroom teachers. Stein, Johnson, and Gutlohn (1999) describe the first grade *Celebrate Reading* program as emphasizing an implicit phonics approach to teaching reading such that context (e.g., whole words, pictures) is used to teach letter-sound correspondence. Participants were not provided supplemental reading curricula or instruction aside from books selected by students from the school library.

Dependent Measures

Three dependent measures were used to calculate phonological awareness and beginning reading skills: (a) DIBELS PSF and (b) Nonsense Word Fluency (NWF) tasks, and (c) Oral Reading Fluency (ORF). Repeated measures with the PSF task were used to estimate the slope of learning of phonological awareness skills. Each participating student was administered one PSF probe weekly throughout the duration of the study. Administration of the PSF task entails asking the student to say the sounds in a series of three- or four-phoneme words presented verbally. For example, a student is asked to identify the sounds in the word "shop," with the correct response being /sh/ /o/ /p/. After the student responds, another three- or four-phoneme word is verbally presented. The number of correct phonemes produced in one minute is the final score. Twelve alternate forms of the PSF measure were used in the study. The alternate-form reliability of a single PSF probe is .88, with multiple probe (e.g., three probes) reliability of .96 (Good, Gruba, & Kaminski, 2002). The concurrent criterion-related validity with the Woodcock-Johnson Psycho-Educational Battery Total Reading cluster score is .54, and .65 with the Metropolitan Readiness Test. The predictive criterion-related validity is .62 with the Metropolitan Readiness Test, and .68 with the Stanford Diagnostic Reading Test.

The NWF measure was used to measure children's alphabetic principle skills at the start and conclusion of the study, and at follow-up. Administration of the NWF measure consists of presenting an 8.5" x 11" sheet of paper with randomly ordered vowel-consonant and consonant-vowel-consonant nonsense words (e.g., tob, siv, ov) and asking the student to produce the sounds of each letter in the word, or read the whole word. For example, for the stimulus word "sup", the correct response would be /s/ /u/ /p/ or "sup." The total number of correct letter-sounds produced in one minute is calculated. Three alternate forms of the NWF task were used in the study. The alternate-form reliability of a single NWF probe is .92, and .98 for multiple probes (e.g., three probes; Good, Gruba, & Kaminski, 2002). The concurrent criterion-related validity is .59 with the PSF task; predictive criterion-related validity is .66 with the Woodcock-Johnson Psycho-Educational Battery Total Reading cluster score; and .82 with Oral Reading Fluency (Good, Gruba, & Kaminski, 2002).

ORF measures were used to calculate beginning reading skills at the end of the study and at follow-up. Pre-test ORF data were not collected due to the September start of the study when most first graders are beginning to read connected text. The Test of Reading Fluency (TORF; Children's Educational Services, 1987), a version of ORF, was used in the study. Students are asked to read aloud a first-grade reading passage for one minute. The total number of words read correctly in one minute is recorded. Test-retest reliability of ORF tasks range from .92 to .97, and alternate-form reliability of different reading passages from the same level range from .89 to .94 (Tindal, Marston, & Deno, 1983). The criterion-related validity of ORF passages with common tests of reading achievement such as the Stanford Diagnostic Reading Test, Woodcock Reading Mastery Test, and the Reading Comprehension subtest from the Peabody Individual Achievement Test range from .73 to .91 (Children's Educational Services, 1987).

Independent Variables

Two independent variables were examined in this study: (a) SES, and (b) instructional group. Two covariates also were examined: (a) initial phonological awareness skills as measured by the PSF task, and (b) initial alphabetic principle skills as measured by the NWF task.

Socioeconomic status. Parents of participating students completed a brief family survey regarding family income, education, and occupation to describe and verify group differences in SES. Survey responses are summarized in Table 1. Based on poverty guidelines by the U.S. Department of Health and Human Services (2009), incomes below $22,050 for a family of four are considered below the poverty line. The Nam-Powers Socioeconomic Index (Nam & Terrie, 1993), which ranks primary occupation on a scale of 0 to 100 based on the median level of education and median income associated with that occupation, was used to form an SES composite based on survey information. Mean SES scores for each group were calculated and used to compare between-group differences in SES.

TABLE 1. *Family Questionnaire Responses Regarding Income and Education by Group*

Survey Items	Low SES Intervention	Low SES Control	High SES Comparison
Number of Respondents	24	24	25
Family Income Per Year			
50,000+	7%	25%	64%
35,000-49,999	3%	8%	16%
25,000-34,999	26%	12%	8%
20,000-24,999	19%	8%	4%
15,000-19,999	11%	4%	0%
10,000-14,999	3%	33%	0%
5,000-9,999	7%	8%	0%
< 5,000	11%	4%	0%
Educational Attainment			
College Graduate	16%	16%	72%
Some College	45%	50%	20%
High School Graduate Only	20%	20%	12%
Non-High School Graduate	12%	16%	0%

Instructional Group. Children were provided instruction in either phonological awareness (PAI) or math (M) for 10 consecutive weeks as a supplement to the general reading and math instruction provided in the classroom. In the PAI group, six groups of 3–7 children received explicit phonological awareness instruction four days a week for 20–25 minutes a day based on the *Phonemic Awareness in Young Children* curriculum (PAEYC; Adams, Foorman, Lundberg, & Beeler, 1997). PAEYC is an empirically validated program (Foorman, Francis, Beeler, Winikates, & Fletcher, 1997) designed to develop the early literacy skills of children in kindergarten and first grade. A variety of early literacy skills are introduced, practiced, and extended utilizing activities that are engaging to young children, and promote active participation (Adams et al., 1997). Skills targeted in daily lessons included (a) identifying initial and final phonemes; (b) segmenting and blending phonemes; (c) counting and adding phonemes; (d) subtracting initial and final phonemes; and (e) letter-sound correspondence.

Daily intervention scripts were developed by the researcher based on principles of effective instructional design (e.g., Kame'enui & Simmons, 1990), including signaling, precorrection, using manipulatives to represent concepts, reviewing previously taught skills, testing procedures at the group- and individual-level, using a range of examples, and introducing a limited number of phonetically similar phonemes and letter-sounds in a lesson. For example, an instructional lesson implemented during the second week of the study included displaying an 8 ½" x 11" piece of paper to students that included 5–6 color pictures beginning with different initial sounds, such as "pencil," "bird," "dog," and "chair." Correction procedures were included on intervention scripts, as well as suggestions on varying activities using simpler or more complex words depending on children's progress. For example, intervention scripts included a list of words beginning with a target sound without accompanying pictures, or teacher wording on expanding the activity by asking the children to look around the classroom for items that begin with a target sound.

Instructional groupings and skill emphases were modified based on weekly individual progress monitoring data. Informal observations of instruction were conducted daily by the first author to

gauge children's engagement in instructional activities and teachers' adherence to intervention scripts. Approximately 80% of instructional activities were spent on onset recognition, phoneme segmentation, and blending skills. Letter-sound correspondence accounted for approximately 20% of instructional effort.

To ensure increases in phonological awareness were due to the implemented phonological awareness intervention and not the additional time, energy, and attention children in the low SES intervention group received, children in the low SES control group were provided small group math instruction. Children whose parents did not consent to participating in the study were provided math and/or language arts worksheets by their teacher to complete independently during the study's instructional and assessment activities. Children in the middle-high SES comparison group did not receive additional or supplemental instruction in reading or math.

PROCEDURE

The study was conducted over 12 weeks beginning the third week in September and ending the second week of December, with follow-up occurring the second week of May. Data were collected on all participating children at both the intervention/control and comparison school sites. During the first week of the study and prior to beginning instruction, the PSF and NWF tasks were administered to all children. In addition, parents/guardians of participating children completed a family survey regarding education, occupation, and income. The phonological awareness and math instruction was delivered to participants in the low SES intervention and control groups during weeks 2–11. The phonological awareness skills of all participants (e.g., intervention, control, and comparison groups) also were measured weekly during this time using alternate PSF probes. At the conclusion of the study (Week 12), one alternate probe from both the PSF and NWF task, and one ORF first grade reading probe from the TORF (Children's Educational Services, 1987) were administered to all participants. At follow-up, one alternate NWF probe and one alternate ORF first grade reading probe from the TORF were administered.

For children participating in the low SES intervention group, PSF progress monitoring data were used to guide instructional activities and group children according to skill levels. The researcher and PAI interventionists met twice monthly to review progress monitoring data and discuss children's response to instruction. If a child's performance did not increase or remained stable after two data points (e.g., two weeks), the researcher and interventionists brainstormed ideas on how to increase the child's performance. Approximately 25% of children (n=6) in the PAI group were moved to a smaller instructional group (e.g., 3 children per group) where previously taught skills were re-introduced; additional guided practice was provided; and skill mastery was achieved prior to introducing a new skill.

Phonological awareness and math interventionists included six master's and doctoral-level graduate students in education who had experience working with young children and had received training and conducted student teaching in designing and delivering evidence-based literacy instruction. The researcher met with the interventionists for a total of 6 hours prior to the start of the study to review intervention materials and curricula, practice the delivery of instructional activities, and plan behavior management strategies. Data collectors consisted of five additional graduate students in education and one person from the community trained in education and psychology. Training on the administration and scoring of the PSF, NWF, and ORF tasks included two, 2-hour sessions reviewing the measurement tools, watching and discussing a video demonstration, and practicing in pairs. Inter-rater reliability was calculated immediately following data collection training, week 5 of the study, and at follow-up. Agreement was defined as each time a data collector and independent scorer consistently recorded that a sound or word provided was correct or incorrect. Disagreement was scored each time either a data collector or independent scorer recorded that a sound or word provided was correct or incorrect. Inter-observer agreement was calculated by dividing the agreement score by agreement plus disagreement scores and multiplying by 100. Agreement between data collectors was .90 and above across measurement instruments at each reliability check in the study.

RESULTS

Descriptive statistics for independent variables and pre-test PSF and NWF variables, SES, and post-test and adjusted means on PSF, NWF, ORF, and ORF at follow-up by group are provided in Table 2. The low SES intervention and low SES control groups were not significantly different on any of the above variables. Thus, random assignment was effective in creating similar groups. The two low SES groups were significantly different from the middle-high SES comparison group, but not significantly different from each other, on PSF and NWF at pretest, and SES. This finding is consistent with previous research examining literacy achievement differences between children from low and middle-high SES groups.

TABLE 2. *Descriptive Statistics for Pretest and Post-Test Early Literacy and Reading Skills, and SES By Group*

	Low SES Intervention[a]			Low SES Control[b]			High SES Comparison[c]		
Variable	*M*	*SD*	Adjusted Means	*M*	*SD*	Adjusted Means	*M*	*SD*	Adjusted Means
PSF-pre	17.12	12.69		21.58	16.02		35.68	15.76	
PSF-post	53.88	8.70	56.31	39.33	17.65	40.59	50.68	10.45	46.95
NWF-pre	15.54	11.20		14.83	10.52		27.56	18.73	
NWF-post	31.69	13.07	34.80	33.08	13.87	36.78	35.96	18.25	29.19
ORF-post	11.96	11.49	14.22	8.46	4.93	11.88	21.24	23.95	15.60
ORF-follow up	29.71	23.15	33.24	20.45	10.48	24.75	54.05	25.38	45.92
SES	56.78	18.82		59.29	22.13		83.44	10.16	

Note: PSF-pre= Phoneme Segmentation Fluency Pretest Scores; PSF-post= Phoneme Segmentation Fluency Post-Test Scores; NWF-pre=Nonsense Word Fluency Pretest Scores; NWF-post=Nonsense Word Fluency Post-Test Scores; ORF-post=Oral Reading Fluency Post-Test Scores; ORF-follow up=Oral Reading Fluency Follow-Up Scores; SES=Socioeconomic Status.
a. $n = 26$. b. $n = 24$. c. $n = 25$.

Analysis of Covariance (ANCOVA) was used to examine the effects of the phonological awareness instruction on children's subsequent reading skills. Participants' initial NWF skills were used as a covariate to adjust ORF post-test scores. An interaction between NWF pretest performance and group was present, $F(2, 69)=5.62$, $p<.05$, $\eta^2=.142$, indicating that instructional effects on oral reading fluency skills were dependent on participants' beginning NWF skills. To address the problem of heterogeneity of regression slopes, NWF-pre scores were divided into risk categories, as described by Good, Simmons, Kame'enui, Kaminski, and Wallin (2002), and a two-factor ANOVA was conducted to test the main effect of instruction on ORF for participants classified as "at risk," "some risk," and "low risk" at the beginning of the study based on initial NWF skills. Participants scoring less than 13 letter-sounds per minute on NWF-pre were coded as "at risk" of not achieving goal levels on ORF; those scoring between 14–24 letter-sounds per minute on NWF-pre were coded as at "some risk" of not achieving NWF goal levels; and children scoring 25 or more letter-sounds per minute were coded as "low risk" of not achieving ORF goal levels. No significant interaction effect was present ($p=.51$) thus, main effects were examined. Although no main effect was found for instruction on ORF, $F(2, 72)=2.16$, $p=.12$, $\eta^2=.061$, a significant effect was found for risk status, $F(2, 72)=5.73$, $p<.01$, $\eta^2=.15$ indicating that differences between groups may be due to participants' initial performance on NWF. ANOVA results are displayed in Table 3.

TABLE 3. *Analysis of Variance of Oral Reading Fluency Post-Test Scores*

Source	*df*	SS	MS	*F*
Group	2	930.6	465.3	2.17
Risk	2	2475.04	1237.52	5.7**
Group*Risk	4	711.96	177.99	.825
Error	66	14243.83	215.81	
Total	75	34337		

**p< .01.

According to Good et al (2002), children in the middle of first grade scoring less than eight words per minute on a grade-level ORF passage are considered "at risk" of not meeting goal levels; children performing eight to 20 words per minute are considered at "some risk," and those scoring over 20 words per minute are at "low risk" of not meeting goal levels on ORF. Post-hoc analyses revealed significant differences between the performances of children considered to "at-risk" of not meeting goal level outcomes on ORF and children considered at "low risk" at the end of the intervention (p<.01). In addition, significant differences were found at post-test between children considered at "some risk" and those considered at "low risk" (p<.01). No significant differences in performance were found between children labeled at "some risk" and "at risk" (p=.35). Of children in the low SES group who participated in the phonological awareness instructional group, 46% were classified as "at risk" at the end of the study compared to 58% of children who did not receive the phonological awareness instruction. No children in the low SES control group reached "low risk" status, whereas 12% of children from the low SES group who received the early literacy intervention were classified as 'low risk' by the end of the study.

When examining follow-up ORF scores using ANCOVA, again, a significant interaction effect was present between NWF at pretest and group at follow-up, $F(2, 59)=3.40$, $p<.05$, $\eta^2=.103$. A two-factor ANOVA was conducted to test the effects of instruction at follow-up 24 weeks later based on participants' initial NWF risk status. Table 4 displays the results from the ANOVA on ORF follow-up scores. No significant interaction effect was present (p=.55) thus, main effects were examined. Main effects for group were found at follow-up, $F(2, 72)=9.10$, $p< 01$, $\eta^2=.245$, with the high SES comparison group performing significantly higher than the two low SES groups. On post-hoc analyses, mean group differences was largest between the low SES control group and middle-high SES comparison group (e.g., -33.60; p<.01) and between the low SES intervention group and middle-high SES comparison group (e.g., -24.34; p<.01. Significant group differences were not found between the low SES intervention group and low SES control group at follow-up (e.g., 9.26; p=.28).

TABLE 4. *Analysis of Variance of Follow-Up Oral Reading Fluency Scores*

Source	*df*	SS	MS	*F*
Group	2	7076.84	3538.42	9.1**
Risk	2	4946.5	2473.25	6.36**
Group*Risk	4	1202.7	300.67	.773
Error	56	21773.16	388.81	
Total	65			

**p< .01.

Main effects also were present for risk status, $F(2, 72)=6.36$, $p<.01$, $\eta^2=.185$. On post-hoc analyses, significant differences were found between the three risk status groups, $p<.05$. According to Good et al. (2000), children scoring less than 20 words per minute on a grade-level reading passage at the end of first grade are "at risk" of not meeting goal levels on ORF, children scoring between 20–40 words per minute are at "some risk," and those scoring over 40 words per minute are "low risk" (Good et al., 2000). The percentage of children classified as "at risk" at the end of first grade was as follows: 50% of children in the low SES intervention group 55% of children in the low SES control group, and 14% of children in the high SES comparison, group. Of children considered at "some risk," 21% were in the low SES intervention group; 40% were in the low SES control group; and 42% were in the high SES comparison group. The percentage of participants classified as "low risk" was 29% of children in the low SES intervention group, 5% of children in the low SES control group, and 42% in the high SES comparison group. Descriptive statistics for ORF post-test and follow-up for all three groups by risk status are provided in Table 5.

TABLE 5. *Descriptive statistics for Oral Reading Fluency at post-test and follow-up for all three groups by initial Nonsense Word Fluency risk status*

	ORF-post (n=75)			ORF-follow up (n=65)		
Risk Status	M	SD	N	M	SD	N
Low SES Intervention						
At Risk	6.73	2.76	11	21.22	15.6	9
Some Risk	11	6.5	11	28.36	21.75	11
Low Risk	29	21.02	4	52.5	31.08	4
Low SES Control						
At Risk	5.57	4.65	7	10.8	3.35	5
Some Risk	9.25	4.62	12	22.1	9.97	10
Low Risk	10.5	5.13	5	26.8	10.61	5
High SES Comparison						
At Risk	6.67	6.11	3	30	16.37	3
Some Risk	16.18	8.94	11	56.33	19.22	9
Low Risk	30.27	33.28	11	59.79	30.24	9

Note: ORF-post=Oral Reading Fluency Post-Test Scores;
ORF-follow up=Oral Reading Fluency Follow-Up Scores.

DISCUSSION

Reading researchers consistently report that young children from lower SES backgrounds typically have lower levels of literacy skill upon school entry than children from middle and higher SES backgrounds. Results of research investigating variables that may account for differences in the reading achievement of children from lower and higher SES backgrounds indicate that this gap in literacy skills may be explained by the presence, or absence, of phonological awareness skills. Indeed, correlational studies show that varying levels of phonological awareness skills in young children may explain differences in reading performance between SES groups (Bowey, 1995; Raz & Bryant, 1990).

Evidence from the present study showing that the implementation of systematic phonological awareness instruction decreases SES-related differences in early literacy skills, specifically phonological awareness, is noteworthy. Indeed, the phonological awareness skills of children in the low SES intervention group were significantly higher compared to the phonological awareness skills of children in the low SES control group, and these children were more likely to be categorized as at "low risk" of not meeting goal levels in reading in the future. Similar results were found at follow-up with 29% of children in the low SES intervention group considered at "low risk" compared to 5% of children in the control group, and closer to the 42% of children in the high-SES comparison group.

Based on the results of this study, children from low-income backgrounds who achieved adequate levels of phonological awareness by the middle of first grade did not demonstrate reading skills (i.e., oral reading fluency) comparable to children from the middle-high SES comparison group. These results may lend support to the negligible research on the effectiveness of phonological awareness instruction in increasing the literacy skills of struggling readers beyond the primary grades (Bhat, Griffin, Sindelar, 2003). That is, increased phonological awareness may not consequently result in fluent reading in connected text, especially for children at the end of first grade. Possible hypotheses regarding the results of this study are that the phonological awareness intervention was 1) delivered too late, 2) narrowly focused, and 3) too brief.

Results of research indicate that to make the greatest impact on children's early reading acquisition, first grade reading instruction should be preceded by focused, well-implemented kindergarten instruction (Hiebert, Pearson, Taylor, Richardson, & Paris, 1998; Hiebert & Taylor, 2000). If intense, systematic phonological awareness instruction is delivered in kindergarten or preschool, children may enter first grade with acceptable levels of phonological awareness instead of acquiring phonological awareness and beginning reading skills simultaneously (Magnuson, Ruhm, & Waldfogel, 2007; Scanlon, Vellutino, Small, Fanuele, & Sweeney, 2005; Vellutino & Scanlon, 2001). Considering evidence regarding differences in instructional quality and teacher experience in schools serving children from low and middle-high SES communities (Arnold & Doctoroff, 2003), children in the middle-high SES comparison group may have received high-quality literacy instruction in kindergarten, as well as a higher level of exposure at home, which may account for their stronger literacy skills upon entering first grade, as measured by their pre- and post-test performance on the study's literacy measures. Thus, the continued gap in reading skills between children in the low SES intervention group and middle-high SES comparison group at the end of the study and at follow-up may be another illustration of the "Matthew Effect" (Stanovich, 1986). Thus, it may be imperative to intervene early to make the greatest impact on the reading trajectories of children, especially those at-risk of developing reading problems. These results may also provide further evidence that increased phonological awareness may not lead to increased reading skills as children advance in grade.

A second hypothesis for the study's results is that the implemented intervention was too narrowly focused on phonological awareness instruction. As stated earlier, 80% of instructional effort was devoted to increasing students' phonological awareness instruction, and 20% to alphabetic principle skills. Implementing a more "balanced approach" earlier in the intervention may have more immediately increased children's subsequent oral reading fluency skills, as well as provided a backdrop for later reading instruction (Pressley, Roehrig, Bogner, Raphael, & Dolezal, 2002). Instruction that incorporates a variety of skills and strategies (e.g., word recognition skills, vocabulary development, comprehension strategies), using multiple instructional approaches (e.g., explicit, teacher-directed instruction; guided and independent reading; "process" writing and spelling instruction), with varied materials (e.g., predictable and decodeable texts, trade books, basal readers, Zygouris-Coe, 2000) may more successfully increase children's reading skills. Furthermore, the intervention may not have been implemented long enough to result in a meaningful decrease in reading differences between the low SES intervention and high SES comparison groups. Vaughn, Linan-Thompson, and Hickman (2003) found that struggling second graders who initially received supplemental reading instruction for 10 weeks, and were subsequently provided

another 10 weeks of intervention made substantial growth in reading. Thus, a longer intervention period may have been necessary; however, decreasing the size of the instructional groups and/or increasing instructional time may have also been effective (Wanzek & Vaughn, 2008). Varying levels of intervention intensity may be even more important for children from low SES backgrounds who often enter school with fewer literacy-related experiences and lower overall literacy skills (Chatterji, 2006), and who may not respond to implemented interventions as quickly or significantly without considering students' individual instructional needs.

Another explanation for the effects of the phonological awareness instruction on students' reading skills for children in the low SES intervention group is that the long-term effects of the phonological awareness instruction may come into play later. It is possible that the reading trajectories of children who participated in the phonological awareness intervention changed but meaningful differences, comparable to children in the middle-high SES comparison group, will be more evident the following school year or later when these children have acquired the necessary decoding skills to become fluent readers (Lerkkanen, Rasku-Puttonen, & Aunola, & Nurmi, 2004). Thus, a measure of word reading at follow-up may have more adequately differentiated the reading skills of children in all three groups. A study conducted by Speece & Ritchey (2005) indicates that first graders identified as at risk read on average half the number of words in a 1-minute reading passage compared to typically achieving first graders, and experience growth at approximately half the rate. Thus, the ORF measure may not have adequately captured the word reading skills of children in the low SES intervention group compared to the low SES control group at the end of the study and at follow-up. However, these results may lend support to the negligible research regarding the effectiveness of phonological awareness instruction for struggling readers beyond the primary grades (Bhat, Griffin, Sindelar, 2003). That is, increased phonological awareness may not lead to increased reading performance, especially for students after first grade.

LIMITATIONS

The results of this study should be interpreted with consideration to threats of external and internal validity. Participants in this study were predominately white and English-speaking, residing in a small city. Thus, participants may not be representative of and conclusions may not generalize to persons from non-white ethnic and racial backgrounds, whose first language is not English. Although participants in this study were purposely chosen based on their SES and statistical procedures indicated that significant SES differences were evident between the lower and middle-high SES groups, children in the lower SES intervention and control groups may not have adequately represented children from low SES backgrounds. Family questionnaires revealed that some low SES participants lived in homes that may be considered middle SES. According to survey responses,16% of families in both the low SES intervention and control groups included a college graduate, and 7% and 25%, respectively, had incomes of $50,000 or higher per year. Although the lower SES intervention and control groups may not adequately represent children from low SES backgrounds who are of primary concern in narrowing the achievement gap, it should be noted that, based on poverty guidelines set forth by the U.S. Department of Health and Human Services (2009), 60% of participants (n=13) in the low SES intervention group lived in households below the poverty line, as well as 67% of participants (n=16) in the low SES control group. However, only 12% of participants (n=3) in the middle-high SES comparison group lived in households below the poverty threshold. Nonetheless, replication of the study with a more homogenous group of participants may result in differing outcomes.

While a child's family income may be a marker of academic risk, it does not convey meaningful information regarding the impact of the home environment in promoting achievement. Results of several studies (e.g., Hart & Risley, 1995; McLoyd, 1998; Payne, Whitehurst, & Angell, 1994) were due to the manipulation of educators and known to have a causal impact on student achievement. Thus, the SES measure employed in this study may have excluded important aspects of SES that relate to children's attainment of literacy skills, and may not have adequately delineated high and low SES participants into groups on important SES-achievement indicators. Future studies should include SES measures

that assess home processes that directly relate to literacy outcomes, such as quality of shared reading practices, exposure to a rich and varied vocabulary, and experience with an array of print materials.

Two threats to the internal validity of this study are present: 1) data collectors were not blind to subjects' group membership, and 2) quantitative intervention integrity data were not collected. Although data collectors were not knowledgeable of the specific skills taught in the low SES intervention group, data collectors may have observed subjects entering and/or exiting instructional groups for data collection purposes. Thus, data collectors' knowledge of subjects' group membership may have biased the administration and scoring of dependent measures, and is a potential threat to the validity of the study's findings. The second threat to the internal validity of the study is a lack of intervention integrity data collected. Although instructional groups were informally observed by the first researcher, and feedback was provided to interventionists based on observed implementation of scripted lessons, to attribute the study's effects directly to the implemented intervention, quantitative data are needed to validate the assumption of a causal effect between the implemented intervention and the dependent variables (Shadish, Cook, & Campbell, 2002). Thus, a significant limitation to the current study's findings is a lack of collection of systematic intervention integrity data. As a result, causal statements regarding the effects of the phonological awareness intervention on subjects' early literacy skills should be made with caution. That is, it is unknown how much, if any, groups varied in the delivery of the scripted phonological awareness intervention lessons which may further explain children's response, or lack thereof, to the implemented intervention.

FUTURE RESEARCH

Future studies investigating the potential of phonological awareness instruction in decreasing SES differences in reading should consider a number of variables. Specifically, researchers should ensure that participants attending schools considered primarily comprised of children from low SES backgrounds, based on the number of children receiving free or reduced price, are indeed from low SES backgrounds. Thus, measures of family income, education, and occupation as well as home factors related to literacy outcomes should be included. In addition, future studies should include participants from more homogenous low and middle-high SES levels, as well as different ethnic, racial, and native language backgrounds to more adequately reflect all children who may be at-risk for developing reading difficulties. Recent measures of intelligence also should be included to ensure instruments used are based on the most up-to-date research on the assessment of cognitive abilities, reflect demographic changes, and are psychometrically sound.

Also important is the inclusion of quantitative measures of intervention integrity to draw definitive conclusions regarding the efficacy of specific intervention procedures and strategies to child outcomes. Intervention integrity measures such as systematic observations that include a checklist of scripted procedures are recommended. Data collectors blind and unsusceptible to participants' group membership may also be important to ensure intervention effects are directly related to the implemented intervention. Future studies also should consider the inclusion of measures of word identification as an indicator of reading skill, especially if children's subsequent reading skills, based on initial literacy skills, may be more effectively measured with isolated word reading than reading in connected text.

IMPLICATIONS FOR SCHOOL PSYCHOLOGY

The passage of the Individuals with Disabilities Education Improvement Act of 2004 (PL-108-446) and the nation-wide focus on implementing Multi-Tiered Systems of Support (MTSS) to identify and intervene early with at-risk learners have large and significant implications for the practice of school psychology. Appropriate identification models and systematic use of instructionally relevant data are key to effectively identifying students who are struggling or are at-risk of not meeting goal levels of literacy. For example, state-, district-, and/or school-wide benchmark data (e.g., fall, winter, spring) coupled with specific cut scores may be used to make decisions regarding intervention need, and the use of error analyses and/or Brief Experimental Analyses to pinpoint instructional targets. Much like this study,

which used frequent progress monitoring to guide instruction and inform movement of participants between groups based on instructional need, data on the progress of students receiving intervention may be used to gauge the effectiveness of intervention, inform instruction, and make intervention exit and enter decisions so that allocation of resources is commensurate with instructional need.

School psychologists can be key players in contributing to prevention and intervention school reform efforts. However, to meaningfully contribute and provide leadership to school and district implementation teams, the focus of school psychology training at the pre-service and in-service level needs to shift from a classification and eligibility assessment model to one that is idiographic and instructionally relevant. Knowledge of instructional design principles (Kame'enui & Simmons, 1990), important targets of literacy instruction (National Reading Panel, 2000; National Early Literacy Panel, 2008), and fluent application of problem-solving also are necessary. Reinventing the role of the school psychologist is necessary to the continued relevance of school psychology's contribution to school reform.

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TOC

Context-Sensitive Ethics in School Psychology

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Ethical codes and licensing rules provide foundational guidance for practicing school psychologists, but these sources fall short in their capacity to facilitate effective decision-making. When faced with ethical dilemmas, school psychologists can turn to decision-making models, but step-wise decision trees frequently lack the situation sensitivity needed for our most daunting ethical challenges. This article proposes a context-sensitive approach to ethics in school psychology that balances the need for ethical standards with an overt acknowledgement of the critical role of situational variables, values, and contextual factors. A context-sensitive ethics framework is presented and illustrated with case examples, followed by recommendations for practitioners.

KEYWORDS: ethics: applied professional ethics, school psychology, decision making, special education

Context-sensitive Approach to Ethical Decision-Making

The purpose of this article is to encourage school psychologists to think carefully and critically about professional ethics by considering a context-sensitive approach to ethical decision-making. We provide background information and a rationale for a context-sensitive approach, followed by case scenarios to illustrate the application of the proposed model.

A context-sensitive approach to resolving ethical challenges is defined as using the context of individual circumstances in ethical decision-making and employing a process of arriving at decisions by considering not only the relevant guidelines in ethical codes, but also the unique interactions of the relevant individuals and systems. Existing decision-making models encourage such a process but fall short of providing guidance for the execution of this approach.

There are a number of reasons why a context-sensitive approach is needed now more than ever before. Shifting demographics have resulted in schools that are culturally and linguistically diverse. Consequently, school psychologists must be sensitive to cultural differences, particularly in the various ways that individuals perceive and respond to challenging ethical dilemmas. Moreover, conventional, Western approaches to ethics are largely based on a paradigm of individualism that may fail to meet the needs of collectivist models (Lützén, 1997). For example, the mandate to "do no harm" is typically regarded as an obligation that a professional (e.g., physician, psychologist, etc.) has to an individual without regard for others who may potentially be impacted. In school psychology, the focus on the individual can be found in phrases such as, "school psychologists attempt to resolve (conflicts of interests) in a manner that provides the greatest benefit to the client" (NASP, 2010, p. 10). Though the NASP *Principles* (2010) consider "the rights and welfare of all affected parties," the dominant focus is on the individual (p. 2).

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Technological advances are placing new pressures on communication and interaction, and "with each new advance, we risk the potential violation of ethical or legal practice" (Pfohl, 2010, p. 32). Children, families, and schools increasingly rely on communication media that are rapid and easily shared. As a result, old ethical models that were developed prior to the technological revolution may be limited in their capacity to address contemporary concerns. For example, standards regarding confidentiality and security of records may be difficult to apply to the context of the ever-changing technological landscape. While school psychology has always adjusted to changes in technology, the rate of change has never before been so steep.

Finally, a limitation of most decision-making models is the assumption of rational players with objective, impartial reasoning (Lützén, 1997). A context-sensitive approach recognizes the inherent subjectivity of our work and embraces it. Here we recognize that better ethical decisions are made when we acknowledge subjectivity and take it into consideration when engaging in decision-making processes.

BACKGROUND

The field of psychology, and school psychology in particular, has developed robust and comprehensive ethical codes, guidelines, and a related body of professional literature (APA, 2010; ISPA, 1990; Jacob and Hartshorne, 2006; NASP, 2010). The ethical standards, codes, and guidelines have largely been effective at setting clear expectations for school psychologists, establishing protections for children, families, and others, and providing a framework for addressing challenges and dilemmas. However, we question the degree to which the existing ethical tools (e.g., codes and decision-making models) are sufficient to meet the challenges of the changing world in which we work and live. In this article we argue in favor of a context-sensitive approach to ethics in school psychology that places ethical decision-making in a framework that takes into consideration critically important variables in professional settings and the lives of children, families, and professional educators. It is our hope that such an approach will enable school psychologists to be proactive and responsive to changes and needs in the field.

In the absence of a context-sensitive approach to ethics in school psychology, practitioners may be at risk for making significant errors in judgment, with serious consequences for children, families, and other educators. For example, the school psychologist who fails to take cultural factors into consideration when trying to resolve an ethical dilemma may inadvertently harm the very people that one is trying to assist. Moreover, the school psychologist who acts without the benefit of a context-specific approach may misunderstand the ethical dilemma, or try to solve one that does not even exist. As school psychologists operate in both the worlds of educational and psychological paradigms, each with their own rich traditions, histories, and ethical/legal foundations, the absence of contextual thinking can result in misguided actions. Given the high stakes, adoption of a context-sensitive approach is a significant issue for the field of school psychology.

Our thinking about ethics in school psychology is shaped in part by Bronfenbrenner's (1979) ecological systems theory, which proposes that child development is best understood in the context of *microsystems* (e.g., the family, the school), *mesosystems* (i.e., interactions across the microsystems), the indirect influence of the more distant *exosystem*, and the *macrosystem* of cultural and political factors. By attending to the unique constellation of ecological systems factors for each child, we place ethical decisions in the relevant context. Moreover, those employed as psychologists in schools recognize the ecosystemic nature of such work (Borgelt & Conoley, 1999; Curtis & Stollar, 2002; Lusterman, 1992) and the unique challenges of working with multiple systems (Lasser & Klose, 2007). We do not mean to suggest that Bronfenbrenner's (1979) ecosystemic framework is the foundation of a context-specific approach, but rather an example of contextual thinking and conceptualization.

School psychologists are aware that contextual factors are significant. Ball, Pierson, & McIntosh (2011) have articulated the importance of the legislative (e.g., No Child Left Behind) and professional (e.g. NASP and Division 16 of APA) parameters that affect the practice of school psychology. The need for an ecosystemic perspective in assessment and intervention for school psychology has been underscored by Cowan (2011).

Aside from school psychology, social and cognitive psychology have addressed the role of context and provide empirical support for its influence. For example, memories of eyewitness accounts may be influenced by viewing call-in crime show on television (MacLin, Tapscott, & MacLin, 2010). Self-ratings of attractiveness depend on the context of competition (Saad & Gill, 2009), and reported satisfaction in romantic relationships compared to overall life satisfaction may be influenced by the ordering of questions (Puente-Díaz, 2011). Context matters, and a growing body of literature demonstrates its influence on cognition and perception.

Though recognition that both child development and the work of school psychologists are nested in ecosystemic contexts serves as a significant influence on our thinking, the foundation for the proposed perspective comes from another helping profession that has embraced this paradigm. Lützén (1997) proposed a context-sensitive approach for nursing ethics that can inform the way that school psychologists think about ethical decisions. This approach views ethics as, "an interpersonal activity, set in a context" rather than a set of universal principles, applied mechanically with little regard for cultural, systemic, and interpersonal factors (Lützén, 1997, p. 218).

Lützén (1997) advanced the notion of context-sensitive ethics in nursing after observing that nurses were unable to successfully apply traditional frameworks for ethical decision-making, largely due to a recognition that those models assumed an impartial and objective decision-maker. Though traditional models may be adequate for solving hypothetical ethical dilemmas, nurses living and working in real situations are partial and subjective. Lützén credits her approach to Carol Giligan's (1982) ethics of care and the hermeneutic philosophical ethics of Hans-Georg Gadamer (1983) and argues that in the real world of daily practice, nurses rely much more on the particulars of a given context than they do on decision-making models. Though nursing and school psychology are different fields, they are both helping professions that have significant commonalities (e.g., primary ethical responsibility is to patient/child, ethical principles of autonomy, beneficence, etc.). When school psychologists are advised to consult with "colleagues with greater expertise," they are essentially being encouraged to seek out an objective point of view (NASP, 2010, p. 2).

The problem of addressing ethical dilemmas in context has been addressed in the fields of counseling and psychology (Cottone & Claus, 2000; Cottone, 2001). A significant critique of many ethical decision-making models is the reliance on an individual (rather than social) process, though there are some notable exceptions (e.g., Hill, Glaser, & Harden, 1995; Betan, 1997). Ironically, psychologists recognize the importance of social systems, yet typically fail to apply this knowledge to ethical decision-making (Cottone, 2001; Lasser & Klose, 2007). This is not to suggest that a systems approach is absent from psychology, but rather that the application of context to the resolution of ethical problems has not been fully developed. In response to this concern, Cottone (2001) proposed a social constructivism approach to ethical decision-making that relies less on individual processes in favor of an interactive approach that requires negotiating and consensus building, while taking into consideration cultural and social factors.

Given the nature of our work and work setting, we argue that school psychologists could also benefit from an ethical decision-making model that incorporates both a context-sensitive approach (Lützén, 1997) and a social constructivist perspective (Cottone, 2001). What follows is a brief review of the current status of professional ethics in the field of school psychology (including codes, principles, and ethical decision-making models), a discussion as to why a context-sensitive approach should be applied to school psychology, and case examples to highlight such an approach. We conclude with implications for applied professional ethics in the field.

Current Status Of Professional Ethics In School Psychology

School psychologists primarily work under the ethical code of NASP. However, other codes are considered (Ethical Principles for Psychologists and Code of Conduct of the American Psychological Association, International School Psychology Association). Some state guidelines or rules of practice mirror ethical guidelines but also focus on procedural compliance. In practice, we have multiple codes, standards, rule books, etc. as a reference for ethical decision making.

These codes/guidelines are not the same as decision-making models, of which there are many (see Cottone & Claus, 2000 for a review). It has been noted that making a decision is often listed as a step in the process, but isn't described. We argue that arriving at a decision warrants analysis.

Reviews of Selected Ethical Codes Relevant to School Psychology Practice

The *National Association of School Psychologists Principles for Professional Ethics* (NASP, 2010) provides four general themes: Respecting the dignity of all persons, professional competence and responsibility, honesty and integrity in interpersonal relationships and responsibility to schools, families, communities, the profession and society. These themes, as well as the codes and decision-making model described below, serve as important guiding themes for ethical practice. Moreover, these tools recognize the importance of context. However, they fall short in their capacity to provide practitioners with guidance for utilizing the context in which specific situations ethical dilemmas arise to make context-based ethical decisions.

The *Ethical Principles of Psychologists* provided by the American Psychological Association (APA, 2010) provides five general ethical principles: Beneficence and nonmaleficence, fidelity and responsibility, integrity, justice and respect for people's rights and dignity. In the introduction to the document, APA notes that context should be considered when applying ethical guidelines and the interpretation of the guidelines may vary, depending on the context. However, no specific guidelines are given for the process of incorporating the context into ethical decision-making.

The International School Psychology Association (ISPA) created a code of ethical principles that attempts to define general principles that span international, cultural, linguistic and legal contexts. The general tenants of the ISDA ethical code include general principles related to trust, promotion of children's welfare, and high levels of professional competence (ISPA, 1990).

The section of the ISPA ethical code that relates to professional responsibilities provides specific guidelines for assessing the context of psychological services by explicitly stating how aspects of context can be considered in practice. Primary importance is placed on the school psychologist's responsibility to understand the goals and philosophies of the system in which they work (exosystem) and the value systems of the families with whom they work (microsystem). In addition, emphasis is placed on knowledge and sensitivity of the cultural system in which they work (macrosystem). In this respect, the ISPA ethical guidelines provide the most explicit value on considering the context in ethical decision-making, but, again, little guidance is given for how to accomplish this.

We acknowledge that ethical codes for school psychologists address the idea of context and integrate systemic approaches to ethics. However, current versions of the codes do not place sufficient emphasis on contextual factors, nor do they provide school psychologists with sufficient guidance for applying a contextual framework for the resolution of ethical challenges. Simply telling school psychologists to attend to context is insufficient.

Review Of Ethical Decision-Making Models

One of the most frequently used models for ethical decision-making is the eight-step model developed by Geralrd Koocher and Patricia Keith-Spiegel (Koocher & Keith-Spiegel, 1998). The steps in the process include: Determine if the issue is an ethical one, identify the ethical principle in a specific code, consider factors that may influence decision, consult colleagues, generate alternatives, evaluate consequences of alternatives, make the decision, and implement the decision. The third step, consideration of factors, instructs the decision maker to think about the context in which the ethical dilemma occurs. However, the model falls short providing guidance with respect to how one can thoroughly examine context.

In the NASP reference material, *Best Practices in School Psychology*, McNamara (2008) presents a flow chart for ethical decision-making. The primary steps in the flow chart include become aware of the dilemma, identify the basis of the conflict, determine options for action, decide on the course of action and evaluate the outcome. The subsets of these primary steps include numerous considerations. However,

evaluating the context of the ethical dilemma is not explicitly considered. In fact, in this context, the hierarchy of considerations places the contextual considerations far below that of other considerations. We advocate for a parallel process that pairs contextual factors with each step in a decision-making model.

Thus far, we have presented a case in favor of a context-sensitive approach to ethical decision-making and have noted that though such approach is valued, little guidance is available with respect to the application of such an approach. To illustrate the context-sensitive approach presented, we offer case examples applied to realistic scenarios in school psychology.

CASE EXAMPLES

Case 1

Eva Burton is a school psychologist in a rural school district. She lives in one of the small towns included in the district. Eva grew up in this same small town and graduated from the high school where she currently works. Some of the teachers, administrators and staff are the same as when Eva attended school. In addition, Eva is active in the community and local church. In the community, Eva is a Girl Scout troop leader and a Sunday school teacher at the church. Recently, Eva was asked to participate in a manifestation determination meeting. The student in question is Liz, a sophomore who has violated the student code of conduct by possessing prescription medication with the intent to distribute on the school campus. Eva was the only school psychologist available to participate in the manifestation determination. Liz's mother works as a secretary in the church where Eva teaches Sunday school and they have been friends since elementary school. In addition, Eva has known Liz since she was a child and was in the Sunday school class and in Eva's Girl Scout troop. Liz's father is a teacher at the regional middle school, where Eva also serves as the school psychologist and Eva has worked closely with him on several cases. Eva is well aware of Liz's parents' strong opinions about teenage drug use as they have been quite active in lobbying the school board for a zero tolerance policy regarding drug related issues in school.

Analysis: Eva's situation seems easy enough to handle at first; she can recuse herself from participation in the manifestation determination since she has multiple dual relationships with the family. *Relevant NASP (2010) ethical principles: School psychologists avoid multiple relationships and conflicts of interest that diminish their professional effectiveness (Standard III.4, p. 10); School psychologists refrain from any activity in which conflicts of interest or multiple relationships with a client or a client's family may interfere with professional effectiveness (Standard III.4.2, p. 10*). However, the reality is that rural communities often do not have the luxury of multiple qualified participants who can contribute to these decisions. In this example, the context must be carefully examined to determine how Eva might proceed.

At the microsystem level, Eva must evaluate the concerns and ethical issues related to her relationship with Liz and her parents. The analysis continues into the mesosystem as Eva evaluates her how the different relationships interact and how they might influence her decision making in the manifestation determination. Then, exosystem issues must be considered concerning Eva's responsibility to the school for which she works, including creating a safe environment for all students by upholding the student code of conduct. Finally, macrosystem issues that include the local culture and its values related to a zero tolerance policy regarding drugs and schools must be considered. *Relevant NASP (2010) ethical principle: School psychologists whose personal or religious beliefs or commitments may influence the nature of their professional services or their willingness to provide certain services inform clients and responsible parties of this fact (Standard III.4.2, p. 10).*

To engage in a process of context-sensitive ethical decision-making, Eva should include others in the decision making process. *Relevant NASP (2010) ethical principle: School psychologists who provide services to several different groups (e.g., families, teachers, classrooms) may encounter situations in which loyalties are conflicted. As much as possible, school psychologists make known their priorities and commitments in advance to all parties to prevent misunderstandings (Standard III.2.4, p. 10).* She can explain the various ethical principles to school administrators and Liz's parents and then all parties can engage in problem solving to devise a solution that is acceptable. *Relevant NASP ethical principle:*

School psychologists are candid about the nature and scope of their services (Principle III.2, p. 10). By engaging in this process, Eva creates a richer, more ethical approach to the problem, rather than simply deciding to recuse herself from an important service for the student.

Case 2

Jessica Smart is a school psychologist in a large suburban school district. This district has a reputation for cutting edge innovation, especially in the use of technology to enhance instruction and professional practice. Over a period of several years, the district has moved from a paper-based record keeping system to an online system. The final phase of this change was the inclusion of all special education records in the online data management system, including individual psycho-educational evaluations.

Jessica works on one of the elementary campuses in the district. The speech language pathologist (SLP) on the campus comes to Jessica and is very upset. The SLP's child, a middle school student, is in the process of being evaluated for special education eligibility by another school psychologist in the district. Both the SLPs and the school psychologists in the district have access to the school records of all special education students in the district. Because the individual evaluations are written online directly into the data management system, the SLP was able to access a draft of her own child's evaluation. She is not in agreement with the information that she read in the draft report and has asked Jessica to review the draft report so that they can discuss it.

Analysis: Jessica must consider a number of ethical principles in her decision regarding her course of action. There are a number of competing interests in the scenario and it is important for Jessica to consider the context when deciding on her course of action.

Similar to the first example, on first glance, it may seem that Jessica's choice is clear – do not get involved, report the SLP for accessing information inappropriately. However, the consequences of this cut and dry approach could have many negative results.

The microsystem in this case includes the family and child being evaluated and the parent's right to have access to data that is included in the evaluation process. *Relevant NASP (2010) ethical principle: School psychologists ensure that parents have appropriate access to the psychological and educational records of their child. Parents have a right to access any and all information that is used to make educational decisions about their child (Standard II.4.4, p. 8).* In addition, Jessica may feel an obligation to determine if the child is, in fact, receiving the best evaluation that will guarantee access to appropriate services.

The school campus personnel represent the exosystem in this scenario. Jessica must maintain a working relationship with the SLP on her campus. *Relevant NASP (2010) standard: To meet the needs of children and other clients most effectively, school psychologists cooperate with other psychologists and professionals from other disciplines in relationships based on mutual respect (Standard III.3.1, p. 10).*

The macrosystem involved includes the district policies that allow confidential information to be accessed by various professionals. *Relevant NASP (2010) standards: School psychologists discuss with parents and adult students their rights regarding creation, modification, storage, and disposal of psychological and educational records that result from the provision of services. Parents and adult students are notified of the electronic storage and transmission of personally identifiable school psychological records and the associated risks to privacy; and, school psychologists, in collaboration with administrators and other school staff, work to establish district policies regarding the storage and disposal of school psychological records that are consistent with law and sound professional practice. They advocate for school district policies and practices that safeguard the security of school psychological records while facilitating appropriate parent access to those records (Standard II.4.9, p. 9).* Also included is the model and effectiveness of psychological services delivery by other professionals in the district.

The mesosystem includes the interaction of knowledge Jessica may have about the school psychologist who conducted the evaluation, her future interactions with the SLP on her campus, and her feelings about the policies that have *resulted in confidential information being available in the online*

data management system Relevant NASP (2010) standard: School psychologists discuss and/or release confidential information only for professional purposes and only with persons who have a legitimate need to know (Standard I.2.5, p. 5). In order to make an appropriate decision, Jessica must consider all of these factors. If she focuses on only one factor, instead of the interaction of these factors, Jessica could make a decision that would have negative repercussions for one or more of the components of the system involved.

Case 3

Frank Smith is a school psychologist who provides counseling in a middle school in an urban school district. Janell Acada, a school counselor at the same school, spoke to one of the students with whom Frank is working, and was made aware of some family issues. Janell asked Frank to sit with her, the student, and parent to have an open conversation about what the student has discussed in counseling in order to confront the issues of which Janell has been made aware. Frank indicated that, although there may be a time and place for such a conversation, the bounds of confidentiality of the student/school psychologist relationship would not allow such a conversation to take place. Janell disagreed and was surprised that Frank would not immediately tell the parent everything the student had discussed in counseling sessions. Her words were, "I should never know more about the student than the parent. I tell the parents everything."

Analysis: The microsystem in this case example is the child and his psychological well-being. Frank, the school psychologist, has an ongoing relationship with the student that has specific boundaries regarding information shared in counseling. It would appear that this case is quite straight-forward. *Relevant NASP standards: School psychologists respect the right of persons to self-determine whether to disclose private information (Standard I.2.1, p. 5); and, The school psychologist's commitment to protecting the rights and welfare of children is communicated to the school administration, staff, and others as the highest priority in determining services (Standard III.2.3, p. 10). However, if a child or adolescent is in immediate need of assistance, it is permissible to delay the discussion of confidentiality until the immediate crisis is resolved (Standard I.2.3, p. 5).* However, consider the parents as part of the microsystem of the child. The parents' values and beliefs should be considered in the context of their understanding of the boundaries and limits of confidentiality. Perhaps the prohibition of the ethical code is too absolute in this context, perhaps not. In making the decision about this ethical dilemma, Frank must consider these aspects of the microsystem context.

The working relationship between Frank and the school counselor represents part of the exosystem in this case example. The NASP (2010) ethical code require that school psychologists work collaboratively with other professionals in the schools and respect the knowledge and skills of other professions. "To meet the needs of children and other clients most effectively, school psychologists cooperate with other psychologists and professionals from other disciplines in relationships based on mutual respect. They encourage and support the use of all resources to serve the interests of students. If a child or other client is receiving similar services from another professional, school psychologists promote coordination of services" (Standard III.3.1, p. 10). This becomes part of an ethical dilemma when the school psychologist and the other professional and significant disagreements about how the conflict should be resolved. The relationship must be examined to evaluate the differing points of view in the context of what is best for the child. If the counselor views the parents as the primary client and the school psychologist views the child as the primary client, then the assumptions underlying these beliefs must be examined.

The macrosystem in this case has to do with the different codes of ethics and professional practice that govern different mental health professionals working within a complex system. In addition, there are campus policies, district policies, state regulations, and family law and education law. Another part of the macrosystem is the interpretation of these various codes by different professionals working in the schools. It may be an assumption that mental health professionals share an understanding or interpretation of the codes, but this assumption may not hold true. Frank must engage in problem solving

with the school counselor to examine these contextual issues in order to arrive at a satisfactory resolution to this ethical dilemma. After the professionals engage in problem solving, it is critical to return to the case/student and examine how the potential decision will impact the child and his context. Without that step of returning to the child, the context has not truly been considered in the decision-making.

Mesosystem involves the conflicts between the clinical interests of the child and the conflicts between the interaction of the laws, and varying ethical codes. In other words, at each step of the analysis, the interaction of the relationship with the context must be considered. The relationship is central to the process. The impact of decision on the relationship is secondary only to the well-being of the child.

Implications For The Profession

Adopting a context-sensitive approach in school psychology has a number of implications for the field. We recommend revisions of the ethical codes (e.g., NASP, APA, and ISPA) to explicitly include the need to examine contextual factors when faced with challenging ethical scenarios. Moreover, the codes should reference decision-making models that give clear guidance with respect to utilizing a context-sensitive approach.

Unfortunately, decision-making models in school psychology have not fully addressed context. Therefore, we recommend that these models undergo revisions that incorporate subjectivity and impartiality, as well as the need to take a systems perspective. A good example from another discipline can be found in the Midwives Eco-systemic Model of Ethical Thinking (Foster & Lasser, 2010).

Finally, both pre-service and in-service training of school psychologists should include theoretical instruction and practical application of principles of ethical decision-making that incorporate a context-sensitive approach.

CONCLUSION

While ethical considerations have been integral to the practice of psychology practically since its inception, there seems to be a continuous "tweaking" of the guidelines, principles, and practice of ethics within the field. Examination of other professions that follow a code of ethics (e.g., medicine, nursing, etc.) would indicate that those of us who practice psychology are not alone in the endeavor to improve the manner in which we consider ethical issues as we work with clients and patients. While APA, NASP, and ISPA have produced ethical standards, codes and guidelines that have generally been effective for setting clear expectations for school psychologists, there seems to be some question as to efficacy when using the existing tools (e.g., codes and decision-making models) to meet the ongoing challenges incurred when practicing within the context of a school system. The need to adhere to ethical guidelines emanates directly from the principles set forth in the Belmont Report; that those of us who work with "human subjects" in any capacity should: 1) have respect for persons, 2) practice beneficence and 3) justly apply to each person we treat an equal share, according to individual need, individual effort, societal contribution, and to each person according to merit (NIH, 1979). However, those of us who specialize as school psychologists have an additional obligation to take an extra measure of care when examining these issues, as we predominantly work with minors who are vulnerable and easily disserved in an ethical sense. The question remains, does a standard ethical code really address those principles in a just manner, particularly when context is not taken into consideration?

This article proposes that, particularly in the school environment, we might best serve students by taking a perspective that recognizes the interpersonal activity imbedded in the eco-systemic nature of our work, and of using context as one important factor to consider when making ethical decisions. We have presented just a few scenarios in which context might play a significant role in making a school-based ethical decision. There exists the possibility of many more examples not examined here that make our argument in favor of a context-sensitive approach to ethics in school psychology even more salient. When practitioners are able to place ethical decision-making in a framework that takes into consideration critically important variables in professional settings and the lives of children, families, and professional

educators, they are likely to be able to make more proactive and responsive choices that will be of most benefit to students and their families. As we endeavor to make careful, well considered changes to our way of practicing with this very vulnerable group of clients, we must also be aware of how ethics is evolving in related fields and how these changes and processes might best be applied to the needs of school psychology.

The primary concern addressing ethical dilemmas in context is the inherent difficulty in relying on an individual process. This concern is not unfounded, as contextual decision-making would essentially place the school psychologist in a position of sole arbitrator, rather than relying on the ethical (socially mitigated) guidelines of a non-contextual ethics code process. This will clearly need to be taken into consideration as further discussion on this topic unfolds. As discussed in this text, and explored in the individual case scenarios, there are often instances in which the process of taking context into consideration when making ethical decisions can be not only more sensitive, and in essence more useful, but may also ultimately address the issue at hand in a more comprehensive format as this type of decision-making acknowledges the critical role of situational variables, values, and contextual factors in the process.

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Race and Ethnicity in School Psychology Publications: A Content Analysis and Comparison to Publications in Related Disciplines

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Previous research has examined the quantity and types of diversity-related research in the field of school psychology, revealing gaps in the literature. Extension of this line of research with current data and comparison to related disciplines is needed. This study used content analysis to address these issues, with a specific focus on the racial and ethnic dimension of diversity. Specifically, this study examined and compared the quantity and types of peer-reviewed journal articles related to race/ethnicity within school psychology, special education, and professional school counseling. Three journals from each of these three disciplines from 2008-2010 were identified and coded using systematic procedures, and data were analyzed descriptively. Of the three professions, school psychology journals devoted the least amount of coverage to race/ethnicity-related issues with professional school counseling journals publishing over twice the amount of articles on race/ethnicity in the same time period. Additional results, interpretations, implications, and limitations are provided.

KEYWORDS: race, ethnicity, school psychology, content analysis, diversity, research

Educators' understanding of the domains in which educational inequities and disparities exist is essential to creating policies, practices, and institutional structures that are fair for all students (Rogers & O'Bryon, 2008; Shriberg et al., 2008; Skiba et al., 2011; Speight & Vera, 2009). Such understanding may be particularly important given the current diversity that exists today in America's public PK-12 schools, wherein 45% of students are identified as racial/ethnic minority group members (National Center for Education Statistics, 2011a). Demographic variables such as race/ethnicity, socioeconomic status, and gender are often associated with differences in student outcomes (Gregory, Skiba, & Noguera, 2010; National Center for Education Statistics, 2011b). Whereas a relationship can, and often does, exist between and among demographic variables in relation to students' educational outcomes (e.g., McGraw, Lubienski, & Strutchens, 2006; Raffaele Mendez & Knoff, 2003), there is evidence that students' race/ethnicity contributes to differential outcomes regarding academic achievement (Haycock, Jerald, & Huang, 2001; McGraw et al., 2006), special education placement (e.g., Donovan & Cross, 2002; Skiba et al., 2008), and school-based discipline practices (Raffaele Mendez & Knoff, 2003; Noltemeyer & Mcloughlin, 2010a, 2010b; Skiba et al., 2011; Skiba, Michael, Nardo, & Peterson, 2002). These differential outcomes often result in racial/ethnic disparities that negatively affect educational outcomes, such as high school completion and preparation for employment, for some students of color (Gregory et al., 2010; Losen & Orfield, 2002; Shealy & Lue, 2006; Smith & Kozleski, 2005). Projections of continued growth in individuals from racially/ethnically diverse backgrounds (U.S. Census Bureau, 2010) will likely keep equity related issues a central challenge for America's educators.

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Addressing educational inequities that are evidenced along racial/ethnic lines should be of critical importance to school psychologists because they are concerned with improving educational outcomes for all students (Ysseldyke et al., 2006). Indeed, documents (e.g., *School Psychology: A Blueprint for Training and Practice III [Blueprint III], Model for Comprehensive and Integrated School Psychological Services,* and *Principles for Professional Ethics*) that guide the professional practices of school psychologists indicate that issues of diversity, fairness, and equity are salient. For instance, *Blueprint III* directs school psychologists to "use their knowledge and skills to help schools embrace and address diversity issues effectively at all levels" (Ysseldyke et al., 2006, p. 16). Further, the *Model for Comprehensive and Integrated School Psychological Services* (NASP, 2010b) explains that school psychologists should understand research related to diversity factors for children, families, and schools and use evidenced-based strategies to enhance service delivery to diverse populations. However, to help schools address diversity in efforts to improve student outcomes, particularly for students from racially/ethnically diverse backgrounds, school psychologists need access to a literature base that is representative of the student populations they serve. Given evidence of differential educational outcomes for students based on race/ethnicity, we were interested in exploring the degree to which information about racially/ethnically diverse populations are covered topics within the school psychology literature and identifying the characteristics of this literature base.

Therefore, this article presents the findings of an investigation that examined the quantity and types of race/ethnicity related articles published in school psychology peer-reviewed journals from 2008 to 2010. Although school psychology was the primary field of interest, we also reviewed research in two other fields, professional school counseling and special education, to see how the school psychology race/ethnicity literature base compares to related professions that also serve diverse student populations.

Diversity-Related Content Analyses in School Psychology Journals

High-quality empirical reviews of research literature in the field of school psychology can be found on many topics ranging from curriculum-based measurement (Reschly, Busch, Betts, Deno, & Long, 2011) to token economies (Maggin, Chafouleas, Goddard, & Johnson, 2011). With specific respect to diversity issues, four major studies (i.e., Albers, Hoffman, & Lundahl, 2009; Brown, Shriberg, & Wang, 2007; Miranda & Gutter, 2002; Rogers Wiese, 1992) have examined diversity-related content in school psychology journals using a content analysis approach (see Table 1 for a summary of findings). Three of these studies (i.e., Brown et al., 2007; Miranda & Gutter, 2002; Rogers Wiese, 1992) have framed diversity using broad criteria and one (i.e., Albers et al., 2009) conceptualized diversity more narrowly in specific relation to English Language Learners (ELLs).

Beginning with the seminal study in this area, Rogers Weise (1992) used content analysis to examine the quantity and types of research on diversity-related issues in the field of school psychology. Specifically, she examined all issues of *Psychology in the Schools* (PITS), *School Psychology Review* (SPR), and *Journal of School Psychology* (JSP) published from 1975 to 1990 for content in which individuals from diverse racial/ethnic (i.e., African Americans, Asian Americans, Latinos, Native Americans, or Pacific Islanders), cultural, or linguistic backgrounds in the United States were the primary topic. To meet study inclusion criteria, articles either (a) focused exclusively on one or more of the groups noted above, or (b) used a sample of participants from one or more of these groups concurrent with a sample of individuals from European American and/or English-speaking backgrounds. Articles that focused on international issues or populations were not included. Rogers Wiese also coded each included article using the following categories: (a) type of article (empirical or conceptual), (b) focus of article (academic achievement, behavior, intellectual assessment, training, the school psychologist's role, or intervention), (c) age group of participants, and (d) geographic region in which the study was conducted. Findings indicated that 9% of the total articles reviewed focused on diversity-related issues. Of these articles, 77% were empirical pieces that primarily focused on assessment and the school psychologists' role pertaining to assessment.

TABLE 1. *Summary of Previous Diversity Content Analyses in School Psychology*

	Rogers Wiese (1992)	Miranda & Gutter (2002)	Brown, Shriberg, & Wang (2007)	Albers et al (2009)
Years Reviewed	1975-1990	1990-1999	2000-2003	1995-2005
Journals	PITS, SPR, JSP	PITS, SPR, JSP, SPQ	PITS, SPR, JSP, SPQ, JASP	JSP, PITS, SPQ, SPR, SPI
Focus of Diversity	Racial/ethnic, cultural, linguistic backgrounds	Racial/ethnic, cultural, linguistic backgrounds, SES, sexuality	Racial/ethnic, cultural, linguistic backgrounds, SES, sexuality	Linguistic (English Language Learners)
% articles related to topic	9%	10.6%	16.9%	6.5%
Article Type Empirical Conceptual	 82% 18%	 62%	 69.9%	
Race/Ethnicity Studied African American Hispanic American/Latino Native American Asian American	 41.3% 15.5%* 8.6%** n/a	 43% 23% 5% 3%	 40.1% 25.2% 2.9% 1.9%	Not coded
Grade Level Pre-K Elementary Secondary University	 7.1% 39.1% 4.8% 2.2%		 17.5% 58.3% 20.4% 3.9%	

*We calculated this by combining the percentages for Hispanic, Chicano, and Latino populations
**We calculated this by combining the percentages for Native American, Navajo, Navajo and Papago, and Sioux and Chippewa populations

Miranda and Gutter (2002) conducted a follow-up to Rogers Wiese (1992) to examine if there was an increase in school psychology diversity-related research from 1990 to 1999. These researchers used similar methodology as Rogers Wiese, but reviewed *School Psychology Quarterly* (SPQ) in addition to JSP, PITS, and SPR. They also expanded on Rogers Wiese's criteria for a diversity-related article to include socioeconomic status and sexuality. Miranda and Gutter found that 10.6% of the articles they reviewed included diversity-related content, a small increase since Rogers Wiese's investigation. Most (62%) articles were empirical. Notably, 22% of the articles identified were included in special topical editions of the school psychology journals reviewed. Unlike Rogers Wiese, who found that 77% of diversity-related articles focused on assessment, Miranda and Gutter found that only 38% of their articles had such a focus, which is consistent with the expanding role of the school psychologist during that time period (Fagan & Wise, 2007). Thirteen percent of Miranda and Gutter's articles were intervention focused, and most pertained to the elementary school-aged population. Regarding specific racial/ethnic groups, African Americans (43%) were represented most, followed by Latinos (23%), Native Americans (5%), and Asian Americans (3%).

Brown, Shriberg, and Wang (2007) continued the strand of research that examines diversity-related content in school psychology journals using broad criteria for diversity. These researchers used the same study inclusion criteria as Miranda and Gutter (2002) to investigate diversity-related research in JSP, PITS, SPQ, SPR from the years 2000 to 2003, and *Journal of Applied School Psychology* (JASP) from 2002 to 2003. Brown et al. (2007) also coded articles for the university affiliation of the authors and the setting on which the article focused (i.e., rural, suburban, urban). They found that 16.9% of the articles reviewed were diversity-related, a notable increase since the initial Rogers Wiese (1992) investigation

and the subsequent Miranda and Gutter (2002) investigation. Similar to Miranda and Gutter's findings, the majority (69.9%) of the articles reviewed were empirical. Twenty-two percent of the diversity-related articles focused on intervention/prevention, while 20.4% focused on assessment, representing a continual decrease in assessment-focused diversity-related articles since Rogers Wiese's and Miranda and Gutter's reviews. Most articles focused on elementary aged populations (58.3%), with secondary grades (20.4%), preschool (17.5%), and college following (3.9%). In addition, Brown et al. (2007) found that African Americans (40.1%) continued to be represented most in the diversity-related literature, followed by Latinos (25.2%), Native Americans (2.9%), and Asian Americans/ Pacific Islanders (1.9%).

Finally, Albers et al. (2009) narrowed the criteria for diversity-related content to focus their analysis on ELLs specifically. Their content analysis reviewed articles that appeared in JSP, PITS, SPQ, SPR, and *School Psychology International* (SPI) from 1995 to 2005, as well as journals from professional counseling, special education, and speech-language to determine the extent to which issues related to ELL students are covered across professions, and to compare how school psychology stands in comparison to the other student-service professions. In relation to the school psychology journals reviewed, Albers et al. found that 6.5% of the articles covered issues related to ELL students. Assessment was the focus of the majority of the articles (55.9%), with intervention (20.3%) and consultation (5.3%) following. When data were compared for journals by field, Albers et al. found that special education journals (11.3% of articles) covered ELL related issues the most, followed by speech-language journals (10.1%), school psychology journals (6.5%), and then professional counseling journals (4.8%). Compared to the other professions, Albers et al. noted that school psychology journals' coverage of ELL issues was lacking.

Similar to Albers et al. (2009), the current study narrows the criteria for diversity-related content to focus specifically on race/ethnicity related content. Although we recognize that race/ethnicity is just one aspect of the full spectrum of human diversity, we think it is an important one, and we hoped to reveal the degree to which the topic is considered in school psychology compared to related professional fields. Consequently, we analyzed the quantity and types of articles on race/ethnicity in school psychology, professional school counseling, and special education journals.

METHODOLOGY

Journal Identification

As noted previously, the primary field of interest for the current content analysis was school psychology. Special education and professional school counseling journals were included for comparative purposes because these fields were deemed to be similar to school psychology, given that they also involve the provision of services to children with specialized academic, behavioral, and/or emotional needs in school settings. Counseling psychology was also considered for inclusion in the study, but was ultimately excluded because (1) it does not exclusively involve the provision of services in a school setting, and (2) it serves both adults and children. As a result, many articles included in counseling psychology journals may target different populations than would be relevant to children in school settings.

To identify appropriate journals, we researched journals within school psychology, professional school counseling, and special education and then created an exhaustive list by field. Importantly, because we wanted to follow-up on some aspects of Brown and colleagues' (2007) work, but also allow a year for researchers to heed their call for more diversity-related research before we began analyzing articles, only articles from 2008, 2009, and 2010 were considered for analysis. Once an exhaustive list of journals was created, we used impact factors to identify the top three journals in the fields of school psychology and special education. Impact factors were identified using 2010 Journal Citation Reports® Science Edition (Thomson Reuters, 2011). The impact factor was used because it is an indicator of a journal's influence within its respective field. Since we were only able to locate two professional school counseling journals, we included both rather than using impact factors to determine journal inclusion for this field. See Table 2 for a list of journals included in the study across disciplines.

TABLE 2. *List of Journals within Each Field*

Field	Journal Title
School Counseling	Journal of School Counseling
	Professional School Counseling
School Psychology	School Psychology Review
	School Psychology Quarterly
	Journal of School Psychology
Special Education	Journal of Special Education
	Remedial and Special Education
	Exceptional Children

Three scholars in school psychology, the authors of this article, identified and coded articles to examine the quantity and type of articles related to race/ethnicity. Each coder was assigned as the primary coder for the 2008-2010 volumes of two-to-three journals (one from each discipline). To establish inter-coder agreement and remain consistent with high-quality empirical reviews of the literature in school psychology that utilized double-coding (e.g., Maggin, Chafouleas, Goddard, & Johnson, 2001; Price, Floyd, Fagan, & Smithson, 2011; Reschly, Busch, Betts, Demo, & Long, 2009), each author served as a secondary coder for one year of two-to-three other journals. Thus, for each of the identified journals, one primary coder identified and coded articles from each year and a secondary coder identified and coded articles from one year of the journal. The primary and secondary coders identified and coded articles independently.

Article Identification

In the current study, we focused specifically on race/ethnicity and specified that this topic must be identified within the abstract and/or title. More specifically, we used the following definition as a basis for selecting articles for the study: "…any investigation in which individuals from diverse racial/ethnic groups were a main focus as indicated in the article title and/or abstract and supported by the text." Similar to Miranda and Gutter (2002) and Brown et al. (2007), this definition could apply to the populations studied, topics discussed, or issues presented. However, the group or issue being investigated must be central to the study (e.g., an article with one paragraph on race and no other mention would be excluded, whereas a general conceptual article with a consistent focus on issues of race/ethnicity would be included).

To ensure consistency in article identification, each author independently reviewed all articles in the 2010 issues of a school psychology journal that was not used in the current study. We then discussed and compared our individual findings (i.e., articles we thought would be included versus those that would not, based upon the initial definition for inclusion). When inconsistencies were identified, the definition for inclusion described above was amended in an attempt to improve clarity. For example, we decided that consistent with Miranda and Gutter (2002) and Brown et al. (2007), articles that focused on international populations or topics were not included. In addition, due to our specific focus on race/ethnicity, articles focusing on linguistic diversity or other types of diversity (e.g., religious) were not included unless race or ethnicity was also a significant focus. We also decided that commentaries, book reviews, and introductions to special series would not be included. Inconsistencies were resolved through discussion until 100% consistency was achieved.

Once we achieved consistency, we began working independently to identify articles. The identification and coding of articles involved a three-step process: (1) identifying articles that might be included in the content analysis based only on their titles/abstracts, (2) reading the articles associated with those titles/abstracts that were identified in the first step to ensure that they were in fact appropriate to include in the content analysis, and (3) completing a content analysis on each article identified in the second step. More specifically, each author searched the online table of contents for each of our assigned journals for the years 2008, 2009, and 2010. We each read every title and abstract in each journal issue to determine if the definition components specified previously were met. All articles that appeared to meet the definition based on the abstract were manually reviewed by reading them in their entirety to determine whether they met all inclusion criteria. Inter-coder reliability was calculated based on the agreement in article identification for the selected year that each journal was double-coded. The level of inter-coder reliability across total number of articles identified was determined using Cohen's Kappa (κ) and was interpreted using the criteria established by Landis and Koch (1977) that describes agreement above .80 as "almost perfect." Results indicated that the strength of agreement between coders was strong based on these criteria (κ=.818, 95% CI .703-.933). Of the 215 articles that were subjected to double coding, the coders agreed on 206 articles and disagreed on nine articles. For the nine articles for which disagreements existed, a third coder reviewed the article and made the final decision whether to include the article in the study.

Content Analysis

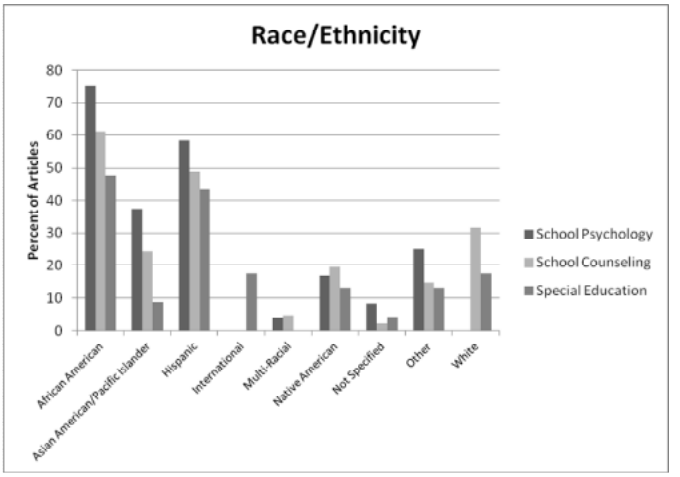
Once the articles were identified, a coding sheet was utilized to gather additional information about each article (see Appendix A). This sheet, developed by the first author, was a modified version of the one used by Brown et al. (2007). The initial draft was reviewed and edited by each author until consensus was reached on the appropriateness of the content and format. The coding sheet included space to designate the population studied (e.g., African American, Asian American/Pacific Islander, Hispanic/Latino, Multi-racial, Native American, White), methodology (e.g., mixed-methods, qualitative, quantitative, single-subject, conceptual article), content/topic of article (e.g., academic, behavior/social emotional, or other), whether race/ethnicity was a primary or secondary topic (i.e., if the foremost topic in the article was race/ethnicity related, it was classified as "primary;" in contrast, if race/ethnicity was discussed in the context of a different focus of study, it was classified as "secondary"), and the diversity of participants (e.g., was the diversity in students, parents, teachers, school psychologists). The level of inter-coder reliability across each of these domains identified was determined using Cohen's Kappa (κ). Based on the criteria proposed by Landis and Koch (1977), the strength of agreement between coders was almost perfect for the population studied (κ=.980), the methodology (κ=.920), and the diversity of participants (κ=.828). In addition, the agreement was substantial for the age (κ=.710) and whether race was a primary or secondary topic (κ=.632). Because the agreement was only moderate for the content/topic of article (κ=.421), we chose not to analyze these data for the study.

RESULTS

Across the eight journals included in this study, 708 articles were reviewed and 92 (12%) were included for content analysis because they addressed issues of race/ethnicity as a topic. However, there were differences found between the three disciplines in coverage of this topic. Whereas professional school counseling covered race/ethnicity in 18.5% of their articles, special education and school psychology covered these topics in only 10.4% and 9.2% of their articles, respectively. These findings reveal that professional school counseling published over twice as many articles on race/ethnicity as school psychology during the time period examined.

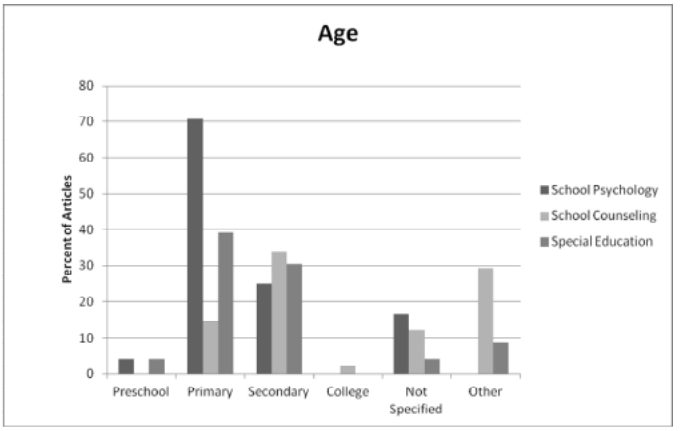
Interesting trends emerged when considering the breakdown of the participants discussed in those articles identified for study inclusion. In the school psychology literature, African American populations were the most frequently studied, with 75% of the studies using African American participants or discussing themes related to African American populations. Multi-racial populations were less often examined, representing 4.2% of the articles. These trends varied by discipline, although across all disciplines multi-racial populations were infrequently studied (see Figure 1).

FIGURE 1. *Percent of coded articles by discipline covering different racial/ethnic populations*



The age of the population(s) discussed in each article was also coded. When considering the field of school psychology specifically, the overwhelming majority of studies dealt with primary students (70.8% of articles), followed by secondary students (25% of articles), with a much smaller percentage of articles addressing preschool (4.2% of articles) or college (0% of articles) populations. Again, these trends differed somewhat by discipline (see Figure 2), although across all disciplines preschool and college age populations were infrequently addressed.

FIGURE 2. *Percent of coded articles by discipline covering different age populations*



Regarding the populations studied or discussed in the articles, the vast majority were students (91.7% of articles). However, articles also addressed teachers (12.5% of articles), parents (8.3% of articles), and school psychologists (4.2% of articles). Although students were by far the most studied population across fields, this focus was most pronounced in the field of school psychology (see Figure 3). There were very few studies on race/ethnicity as it relates to school psychologists.

Most articles in the school psychology literature were quantitative in nature (75% of articles); however, there were also some mixed methods (8.3% of articles), conceptual articles (4.2% of articles), and other research designs (12.5% of articles included reviews of research and case studies) utilized. Disciplines did vary substantially in the types of methodologies used. For example, school psychology had zero qualitative studies on race/ethnicity, whereas over 40% of the articles coded in professional school counseling were qualitative in nature (see Figure 4 for a complete breakdown of these results).

FIGURE 3. *Percent of coded articles by discipline focusing on different participant populations*

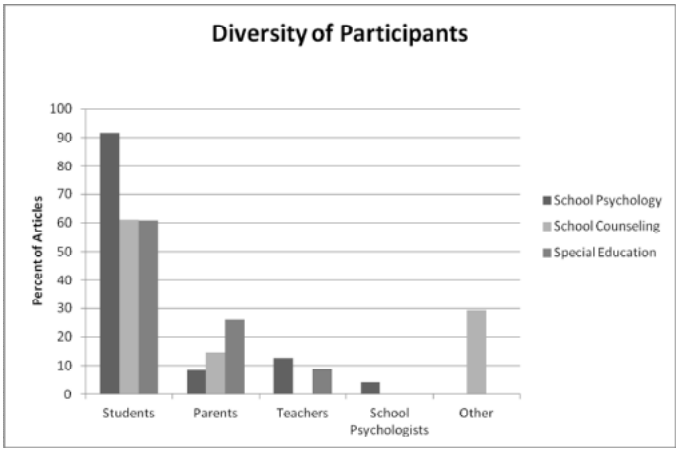
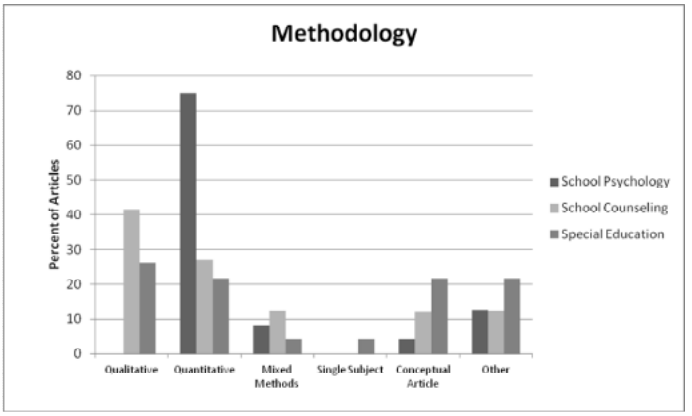


FIGURE 4. *Percent of coded articles by discipline utilizing different research designs*



Finally, we noted the extent to which the articles identified for coding were published in special issues on topics of diversity, race, culture, or ethnicity. Across all fields, 11.1% of the articles came from special issues. However, all of these articles came from two special issues in two different special education journals; no special issues on these topics were identified in the school psychology or professional school counseling disciplines.

DISCUSSION

This study examined the quantity and types of race/ethnicity-related research covered in school psychology journals and two comparable disciplines, professional school counseling and special education. We found that 9.2% of the school psychology articles published during the years 2008, 2009, and 2010 addressed race/ethnicity as a topic, compared to 10.4% of the special education articles and 18.5% of the professional school counseling articles. We also discovered gaps (e.g., little research on preschool and multi-racial populations, as well as limited use of qualitative methodology) in coverage on racial/ethnic issues within the field of school psychology. The study makes a unique contribution to the school psychology literature given that no other diversity-related content analysis focuses exclusively on race/ethnicity while also providing comparison data from closely related professions. Comparison of data across disciplines serves an important function. Although school-based professionals are frequently called upon to engage in collaborative efforts in practice, cross-discipline collaborative research efforts are rare in the literature. Findings and implications may provide useful guidance to the profession as we

aim to build a literature that supports the delivery of services that facilitate school psychologists' ability to influence positive outcomes for all students and as we strive to enact fair and socially just professional practices (Rogers & O'Bryon, 2008; Shriberg et al., 2008; Speight & Vera, 2009).

Race/Ethnicity Literature in School Psychology: Call for Continued Advancement

Given the findings of previous diversity research (e.g., Brown et al., 2007; Miranda & Gutter, 2002; Rogers Wiese, 1992), we found that the overall levels of coverage in school psychology journals were higher than expected when specifically considering race/ethnicity, given that Brown et al. (2007) found that 17% of articles addressed the broader concept of diversity, which includes many more dimensions of human diversity than race/ethnicity in isolation. However, considering that over 45% of the U.S. school-age population are members of a racial and/or ethnic minority group, the percentage of school psychology articles we identified that focus on race/ethnicity is relatively low. In addition, school psychology evidenced a less pronounced focus on issues of race/ethnicity than did professional school counseling and to a lesser extent, special education. In fact, school psychology had less than half the percentage of articles that addressed issues of race/ethnicity than did professional school counseling. Consequently, although we did not assess the rigor of the articles on these topics, it appears that school psychology addresses topics of race/ethnicity less frequently in the journals we examined than does a related field.

Albers et al. (2009) also noted that the school psychology literature was trailing behind related professions in its coverage of issues related to ELL populations. This also extends to literature on race/ethnicity issues. Specifically, it is important that school psychology expand its scholarly focus to issues of race and ethnicity, as educational outcomes often vary across demographic groups, and issues of equity and fairness are central to school psychologists' professional ethics and model practice (NASP, 2010a; NASP, 2010b). Knowledge of why, where, and for whom educational inequities exist is a precursor to school psychologists' ability to drive action that supports all students in a fair way; continued advancement of research on diverse populations is essential if we are to embrace a professional role as advocates for the nation's increasingly diverse student population. This is particularly important because research informs best practices in school psychology service delivery. For instance, research focused on specific racial/ethnic groups in the school psychology literature might contribute to the development of culturally relevant and evidence-based interventions to reduce the achievement gap and/or inequitable discipline practices (see Skiba et al., 2011). However, this will require that scholars who conduct quantitative evaluations of academic and/or behavioral interventions disaggregate findings by participants' race/ethnicity to determine intervention effects for specific groups of students (Skiba et al., 2011). Adequate numbers of diverse participants will be needed to obtain sufficient power to examine intervention efficacy by race/ethnicity (Proctor, Graves, & Esch, 2012). Such a scholarly focus on race/ethnicity decreases the likelihood of generating information that is relevant for only a limited population (Brown et al., 2011).

Missing Populations in the School Psychology Race/Ethnicity Research

Preschool. Our findings revealed that, overall, across school psychology, special education, and professional school counseling, there were few studies on race/ethnicity in preschool populations. Within school psychology specifically, fewer articles focused on preschool populations than elementary and middle school populations – a finding similar to Brown et al. (2007) who studied diversity in school psychology journals using broader criteria. It is possible that diversity research focusing on preschool populations is being published, but is represented in early childhood outlets rather than school psychology outlets. However, given that school psychology practitioners may be more likely to have access to school psychology publications due to their membership in professional organizations like NASP and APA, articles focused on preschool populations within school psychology journals offer the opportunity to maximize dissemination of knowledge to a broader school psychologist audience. This is particularly relevant, considering the importance of early intervention for preventing many types of academic and behavioral problems. For instance, Campbell and Raimey (1995) found that educational intervention

provided during the preschool years yielded stronger longitudinal effects on academic achievement in African American children categorized as at risk than similar intervention provided during early elementary school. Furthermore, Perez-Johnson and Maynard (2007) concluded that intensive, early academic interventions for children at risk offer the best chance to reduce gaps in school readiness. These findings undergird the need for research to identify effective supports during the preschool years, particularly as it relates to students from diverse racial/ethnic backgrounds. Research within the school psychology literature focused on the preschool population coupled with a strategic focus on including preschool aged children from diverse racial/ethnic backgrounds may contribute to building a literature that facilitates early intervention practices that help minimize differential educational outcomes that are evidenced along racial/ethnic lines.

Multi-racial students. In addition, there were few studies within the school psychology literature that addressed multi-racial populations. This may be in part due to the fact that disaggregated data for multi-racial students were not available until recently due to the limited ways in which data related to students' race/ethnicity were reported and collected (Williams, 2009). With the increasing number of multi-racial children in America, however, it is important to conduct educational research that focuses on this expanding population. For example, issues related to racial identity development and racial categorization (in relation to how individuals categorize themselves and how society categorizes individuals) are critical, but may not be well understood in relation to multi-racial children and adolescents (Crawford & Alaggia, 2008; Williams, 2009). A deliberate research focus on this population may facilitate educators' understanding and appreciation of the complexity of multi-racial students' heritage (Williams, 2009), as well as help us understand how school psychology services might be enhanced to meet the needs of this growing population.

School Psychologists. We also found that less than 5% of the school psychology articles analyzed included school psychologists as participants. This finding suggests that as a profession, school psychology is not monitoring its position in relation to issues of race/ethnicity, a noteworthy finding, given our aim to help other educators understand how to effectively service diverse student populations (NASP, 2010a). Speight and Vera (2009) discussed the unique position school psychologists are in to encourage equity in education by examining and challenging institutional structures, policies, and practices that contribute to such inequity. They also noted that the school psychology literature lacks critical self-examination in the ways in which school psychology practice has contributed to educational inequities for disenfranchised populations (Speight & Vera, 2009). Our findings support the need for more race/ethnicity focused school psychology research that includes school psychologists as participants. For instance, research focused on school psychologists' views on the reasons why students of color are overrepresented in more subjective special education categories (Skiba et al., 2008) might initiate a reflective dialogue related to the impact of our service delivery on diverse populations. Although such self-examination is not easy, it is necessary to ensure that school psychologists do not unconsciously engage in practices that have historically maintained unequal outcomes for racial/ethnic minority students (Rogers & O'Bryon, 2008; Speight & Vera, 2009).

Limited Research Methodologies

Noteworthy findings within the school psychology literature also emerged when we more closely examined the types and content of the articles on race/ethnicity. Specifically, our findings indicate that limited methodologies are used in school psychology to investigate issues related to race/ethnicity. The school psychology research we examined was predominately quantitative in nature, in stark contrast to the professional school counseling literature, wherein over 40% of the articles analyzed used qualitative methodology. Other research on publication patterns in school psychology suggests this preference for quantitative research may not be unique to issues of race/ethnicity, but is rather pervasive across varied publication types (see Floyd et al., 2011).

The tendency for school psychology journals to publish more quantitative studies may be a difference in approaches between disciplines rather than a limitation of the field. However, we would

contend that some research on racial/ethnic issues, particularly in relation to individuals' perceptions of race/ethnicity, may lend itself better to exploratory studies or those that are qualitative in nature. For instance, studies utilizing qualitative methods might be particularly useful for understanding issues, such as disproportionate school-based disciplinary practices for African American and Latino students, that can potentially be influenced by perceptions and/or biases held by educators or cultural mismatches between students of color and educators (Gregory et al., 2010; Losen & Orfield, 2002). In specific relation to students' of color disproportionate school-based disciplinary sanctions, Skiba et al. (2011) recommended that a specific type of qualitative methodology- ethnography- be utilized to isolate student-teacher interactions that might contribute to racial and ethnic disparities in school discipline. Thus, while there is certainly value in quantitative methods, recent calls for researchers' use of qualitative methods along with the higher proportion of qualitative articles we found in related professional fields' journals suggest that school psychology may be failing to capitalize on the potential for gathering rich qualitative data that may facilitate an understanding of issues related to race/ethnicity. This points not only to a need for more qualitative research that explores issues of race/ethnicity within school psychology, but also a need for school psychology journal editors and reviewers to understand the characteristics of strong qualitative research (see Creswell & Miller, 2000). Such an understanding of varied research approaches will help ensure that school psychology's research base related to race/ethnicity issues is not restricted by limited methodologies employed.

Inclusion of Race/Ethnicity Research in School Psychology

Finally, although 11.1% of the articles we coded appeared in special journal issues on topics of diversity, race, culture, or ethnicity, all of these articles were published in special education journals. In contrast to Miranda and Gutter (2002) who found that 22% of the 140 articles they identified as addressing diversity related issues were in special topical diversity-related issues of school psychology journals, our analysis did not include any articles from special issues focused on diversity within school psychology journals. Because we did not code all of the journals that Miranda and Gutter coded, it is difficult to know if our finding is indicative of a decrease in special topical issues related to diversity in the major school psychology journals or if there is a trend toward greater acceptance of diversity-related, specifically race/ethnicity, conceptual and empirical manuscripts in the mainstream content of school psychology literature. It is clear, though, based on our findings that 9.2% of the articles that were published from 2008 to 2010 within the three school psychology journals with the highest impact factors were general articles with content that addressed race/ethnicity as a topic. While special journal editions dedicated to issues focused on multiculturalism and diversity in school psychology should not be discouraged, more general articles focused on race/ethnicity, as well as other dimensions of human diversity, are one indication of the field's movement toward understanding diversity factors for children, families, and schools in an effort to enhance our service delivery to diverse populations (an ethical imperative discussed in NASP, 2010a).

LIMITATIONS

There are several limitations of this study that should be considered when interpreting the results. First, we only examined those journal articles that were actually published. This limitation was also discussed by Miranda and Gutter (2002) and Brown et al. (2007), but remains relevant. Consequently, we do not know with certainty whether the lower level of coverage within the field of school psychology reflects less research being conducted in those areas, resistance of editors or editorial boards in publishing such research in our field, a lack of expertise about culturally related research among editorial boards, or some combination of these factors. A second limitation of the current study is the low inter-coder reliability regarding topics of articles. Although previous articles have reported the percentage of articles focused on different content areas within the school psychology profession (e.g., assessment, prevention, intervention, consultation), the low agreement in our study yielded little value from this type of analysis. Consequently, the findings were not reported.

Another limitation of the study is that we do not know whether the gaps identified (e.g., preschool, multi-racial, qualitative) are unique to the race/ethnicity literature or whether they reflect more universal gaps across our field. For example, even though the focus on preschool populations seems low when considering race/ethnicity-related topics, perhaps it is actually higher than the percentage of articles overall within our field devoted to preschool populations. Whether this is true, however, it still reveals an area of need within school psychology publications. It also is possible that the differences found between school psychology and school counseling journals are confounded by differences in preferred methodology. For example, the quantitative approach published more frequently in school psychology journals may not lend itself as well to considering ethnic or racial issues as the qualitative approaches used more frequently within the school counseling literature. Finally, the experimental rigor of articles in different disciplines was not accounted for and could potentially influence interpretation of the findings (e.g., perhaps the school psychology articles that do exist on these topics are much more rigorous and influential than those in related fields, even if they are fewer in quantity).

In their discussion of findings, Brown et al. (2007) discussed several limitations of their study that are equally applicable to ours. For example, we only examined peer-reviewed journals, but not professional conference publications or practitioner-oriented publications. Journal articles are merely one indicator of the importance of diversity in our field. We also excluded articles with an international focus and did not take into account the sample size of the studies we examined. A final additional limitation of our study is the use of the impact factor to select journals for inclusion. This technique may have been overly restrictive, resulting in high-quality race-related research in each field being excluded from investigation.

FUTURE DIRECTIONS

First, we join Miranda and Gutter (2002) and Brown et al. (2007) in calling for research that examines not only published diversity research, but also research that was submitted but not accepted for publication. Although it may be difficult to receive permission to obtain access to journal editors' records about manuscripts that have been accepted and rejected, it may be possible to retroactively survey researchers about the articles they submitted for publication during a given year and the outcome of those submissions, or to survey editors about general practices. These approaches would have the limitation of not clearly knowing what the quality of these articles was; however, it could serve as a starting point for research in this area by revealing interesting findings. For example, we might find that researchers perceive school psychology to be less accepting of race/ethnicity related articles and consequently tend to submit their articles out-of-discipline.

Second, this study focused specifically on issues surrounding race/ethnicity. As stated in the introduction, we recognize that this is only one of many dimensions of diversity. Additional research could more specifically look at other dimensions such as socioeconomic, gender, language, religious, and sexual orientation diversity. The latter seems like a particularly relevant topic for future research given findings that there has been abysmally low coverage of these issues in the school psychology literature (e.g., Brown et al., 2007; Miranda & Gutter, 2002). When investigating these issues, future research could not only consider the quantity and types of research available in a more diverse array of journals, but so too could it examine the rigor and quality of the existing diversity literature. It is not enough simply to publish diversity-related research; regardless of the dimension of diversity being investigated, we urge for the publication of high quality, rigorous, and methodologically sound work that can effectively contribute to our knowledge about serving diverse populations.

Finally, we urge practitioners to consider submitting research manuscripts reflecting culturally responsive practices in their schools. As mentioned by Miranda and Gutter (2002), "…those most likely interested in the issue of diversity may be practitioners who deal with diverse populations on a daily basis" (p. 603). Unfortunately, practitioners tend not to submit as many manuscripts for publication (Shapiro, 1995, as cited in Miranda and Gutter, 2002). It is likely that practitioners who work with diverse populations have worthy insights to contribute to discussions on this topic. It is possible that

practitioners could engage in action research that could be submitted for publication to peer-reviewed journals. In addition, future research could also examine the content of practitioner-oriented publications (e.g., Communiqué, School Psychology Forum) to determine whether these have more contributions of diversity-related research than the peer-reviewed publications examined in this study.

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TOC

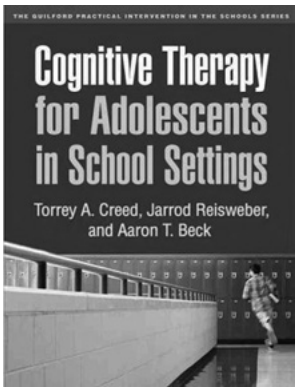
~ BOOK REVIEW ~

TOC

BOOK REVIEW

Cognitive Therapy for Adolescents in School Settings

By Torrey A. Creed, Jarrod Reisweber, & Aaron T. Beck
New York: Guilford Press (2011).
173 pp. $29.75. ISBN: 978-1609181338
Reviewed by Ryan J. McGill



AUTHOR NOTE

In many local educational agencies school psychologists are in the midst of transitioning from a service delivery that is primarily assessment driven to one that focuses more on direct and indirect interventions with students. This process has been expedited in several states (e.g., California) due to the loss of categorical mental health funds, forcing school psychologists to become primary providers for such services among school-aged youth. Practitioners who are tasked with providing educationally related mental health services may require additional training and support in order to deliver evidence-based therapeutic interventions to at-risk youth in the schools (Suldo, Friedrich, & Michalowski, 2010). Creed, Reisweber, and Beck's *Cognitive Therapy for Adolescents in School Settings* (2011) is a valuable addition to the library of clinicians and clinical supervisors who are responsible for delivering and overseeing such services. It serves as an introductory technical manual for treatment planning and cognitive case formulation as well as a step-by-step guide to delivering mental health interventions from a cognitive perspective. It differs from other cognitive therapy (CT) texts (e.g., Mennuti, Christner, & Freeman, 2012) in that chapters are written as clinical guides rather than traditional literature reviews of discrete applications of cognitive techniques.

Content and Structure

Cognitive Therapy is composed of 5 chapters written in sequential order with each chapter serving as a building block to the previous one. The fact that the text is limited to the application of CT techniques within school-based clinics and other mental health facilities (e.g., the school psychologist's office) results in a systematic and explicit appraisal of the challenges and rewards of providing mental health services in such settings. The authors refer to professionals who work in such settings as *clinicians* in recognition of the fact that school-based mental health services are provided by a number of allied professionals, such as school psychologists, school counselors, school social workers, nurses, and other licensed clinical providers.

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Chapter 1 begins with an overview of cognitive therapy. The reader is introduced to the foundational concepts of the cognitive model such as automatic thoughts, underlying beliefs, and compensatory strategies. The authors invite clinicians to conceptualize student problems as issues related to how stimuli or events in the environment are perceived. It is posited that these perceptions (which can be characterized as correct or incorrect and adaptive or maladaptive) are the result of automatic thoughts formed from previous experience that are idiosyncratic to the individual. Understanding, identifying, and ultimately changing maladaptive or incorrect automatic thoughts are the *sine qua non* of cognitive therapy (Beck, 2011). The authors also introduce several cases that "illustrate some of the issues that we often see in adolescents and that represent some of the common, complicated cases we see in the schools" (p. 3). The cases are utilized throughout the text to provide clinical examples of how to methodically address presenting problems utilizing CT.

Subsequent chapters cover topics such as case conceptualization, cognitive techniques, behavioral techniques, and conducting therapy in the schools. Cognitive and behavioral interventions that are covered include: the three c's, coping cards, road map to success, thought records, guided discovery, the downward arrow, behavioral experiments, behavioral activation, the hope kit, replacement behaviors, exposure therapy, and relaxation techniques. A summary is presented for each technique and accompanied with an example of its application using one of the case vignettes. The final chapter concludes with an overview of how to structure individual sessions as well as the overall course of therapy.

One of the unique features of the book is the way in which chapters are put together. Each chapter includes several reflection points where readers are encouraged to think about and provide written responses to questions posed by the authors about the vignettes and clinical examples. These reflection points act as a self-assessment tool that readers can utilize to check their own understanding as they engage the text. Although the book is written with a conceptual focus in mind, each chapter concludes with a section reviewing the empirical support for the content that is covered. For instance, a list of peer reviewed studies and literature reviews are included in each of the technique chapters. These reference lists provide the reader with access to resources which can advance their theoretical and technical understanding of the material.

Critique

Unlike other well-regarded texts on CT applications, *Cognitive Therapy* aims to provide practitioners with information needed to facilitate the use of CT in school-based settings. As such, the text is focused on practical clinical applications as more complex theoretical discussions are found elsewhere. The content reads smoothly and the quality of the writing is such that the concepts are easily understandable and interesting. The authors utilize charts and diagrams extensively which helps to make foundational ideas clear and coherent.

The authors present a cognitive-behavioral model that serves as a useful heuristic for a variety of student concerns and issues. A unique aspect of CT is the use of transparency within the therapeutic relationship: "as cognitive clinicians we want our students to understand the cognitive model and how it works, and we spend time really explaining and discussing this model with students" (p. 10). This process can become extremely directive when working with students with lower insight. Such an approach may be challenging for those working with students who are oppositional or who demonstrate extreme levels of resistance.

Another unique aspect of the CT model is the standardization of session content and the course of therapy. CT is a structured approach to counseling with each 30-minute session broken down into the same discrete tasks which include check-in, agenda, discussion, feedback, and homework/closing. Those having difficulty structuring their sessions or planning treatment protocols over the course of several weeks will find these elements of the text beneficial. The goal of the authors is to encourage clinicians to move beyond the use of the brief informal talking sessions that dominate the landscape of school-based counseling.

The shortcomings in the text have more to do with detail rather than substance. As stated above, the authors extol clinicians to take on a more directive approach with students who present with limited insight but never articulate when and/or if the use of CT may be inappropriate for certain individuals (i.e., those with limited cognitive ability). The authors even stipulate that the therapeutic dialogue contained in several of the case examples portray a level of insight more advanced than what a clinician is likely to encounter in most school settings. Such discrepancies lead one to question how useful some of the more advanced CT techniques (e.g., thought journaling) are for clinicians working in pluralistic settings. Another discrepancy noted was the extensive use of and reliance on homework in between sessions despite the acknowledgement that resistance is likely to be encountered from students within the school setting. It is recommended that clinicians select homework activities that require the least amount of effort from students in order to enhance treatment fidelity and follow through.

In conclusion, the authors achieve their intended purpose in creating a text that serves as a brief introduction to CT for school-based practitioners. However, those who wish to adopt CT as their primary theoretical orientation are advised to supplement with additional foundational texts (e.g., Beck, 2011; Mennuti et al., 2012). Nevertheless, *Cognitive Therapy* will serve as a useful addition to any school-based clinician's home library. Instructors in graduate programs are also encouraged to consider adding it as a supplemental text in counseling foundations or methods courses for pre-service trainees.

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Design, Layout and Formatting of Contemporary School Psychology, Volume 17
Completed by Heidi Holmblad and Dean L. Fregoso

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GUIDELINES FOR AUTHORS

We invite your submissions to ***Contemporary School Psychology*** (CSP). CSP, is a refereed journal published biannually by the **California Association of School Psychologists** (CASP). *Contemporary School Psychology* is devoted to contemporary issues in school psychology with the goal of publishing high-quality articles that link the world of ideas and theory to the world of practice. CSP seeks to serve as a venue for articles that: (1) review research on topics of general interest to school psychologists nationwide, (2) report original research relevant to practicing school psychologists, (3) present promising practices or programs that address the needs of P-12 students, and (4) critically reflect on the profession of school psychology and the opportunities and challenges faced by the profession. Special themes will be highlighted each year to focus publications to these topics; moreover, CSP also accepts manuscripts under sections titled; *Tools for Practice* and a long form *Book Review*. *Tools for Practice* will focus on tools translated from theory that school psychologists can use in their daily practice. The *Book Reviews* will bring to our readers' attention published works outside the typical school psychology literature that will both enlighten and inform practice.

CSP is seeking submissions for upcoming issues of the journal, which publishes every May and November. The deadline for the fall 2013 issue is September 1, 2013. The May, 2014 publication will be a special issue focusing on School Psychologists Supporting Bilingual and Bicultural Youth. We are seeking high quality articles that highlight the skills, knowledge, and strategies needed to provide effective services to youth from various cultures and social backgrounds. The deadline for submissions will be March 1, 2014.

The contents of *Contemporary School Psychology* are available on international electronic literature databases, including ERIC, developed by the US Department of Education, and PsycINFO, developed by the American Psychological Association. Thus, it is essential to include up to five keywords following the abstract of each manuscript.

Manuscripts should be submitted electronically to cspsubmissions@chapman.edu. General communication to the editors should be sent to csp@chapman.edu. Manuscripts should be between 15-25 pages in length (including references and tables). The entire manuscript must be double-spaced with at least 1-inch margins.

Authors must include a cover letter stating the title of the manuscript submitted, authors' names, and a mailing address, phone number, and e-mail address for further correspondence. The cover letter should also specify that the manuscript has not been previously published or being considered for publication elsewhere.

In preparing manuscripts, authors should attend carefully to the guidelines of 6th Edition of American Psychological Association Publication Manual, including the abstract, headings, citations, tables, and references.

Selection of all articles to be published is determined on the basis of blind peer review. Reviewers examine the importance of the topics addressed, accuracy, and validity of the contents, contribution to the profession, implications for the practice of school psychology, originality, and the quality of writing.

Advertising may be included on a case-by-case basis. Please contact Stephanie Domzalski at csp@chapman.edu for more information.

ISSN 2159-2020 (print)
ISSN 2161-1505 (online)

CASP
CALIFORNIA ASSOCIATION OF SCHOOL PSYCHOLOGISTS

Contemporary School Psychology

2013, Volume 17, Issue 1

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Special Topic Section:

School Psychologists Meeting The Mental Health Needs Of Children & Youth - Part II

Published by:

California Association of School Psychologists (CASP)