



pathways to literacy: connections between family assets and preschool children's emergent literacy skills

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ABSTRACT

Using a developmental assets framework, we examined the influences of family resources, routines, and stress on preschool-aged children's emerging literacy development. Data were collected from 85 children as well as from their parents. Using path analysis, the results revealed that the more regular the routines in the household, the more likely parents were to engage their children in literacy enhancing activities, and in turn the higher the children's print knowledge and reading interest. This was the case both initially and a year later. Results also showed that family resources and stress contributed to aspects of literacy development, although not as strongly as family routines. The findings suggest that interventions should include efforts to promote supportive family contexts as an additional means to enhance children's literacy development.

KEYWORDS *family assets, family resources, family routines, literacy development, parenting stress, preschool children*

As educational systems and government agencies continue to push for ways to improve children's literacy scores, researchers and educators have become increasingly interested in understanding the role of the family in the development of preschool-aged children's literacy development. The family is a

journal of **early childhood research**

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Vol 8(1) 5–22 [ISSN 1476-718X DOI: 10.1177/1476718X09345518]

pivotal context in which literacy is first encountered (Purcell-Gates, 1996), and the family provides opportunities for young children to become familiar with literacy materials, engage in literacy activities with others, explore literacy and language behaviors, and observe the literacy activities of others (Bennett et al., 2002; Burgess et al., 2002; Bus et al., 1995; DeBaryshe et al., 2000). Studies have shown that children's literacy skills are enhanced when parents engage them in direct literacy and language enriching activities like joint book reading, playing rhyming games, singing songs, and drawing (e.g. Burgess et al., 2002; Foster et al., 2005; Raban and Nolan, 2005; Senechal et al., 1998; Weigel et al., 2005).

Beyond these more direct parent-child activities, some researchers have become interested in the contributions of the broader family context to children's literacy development. This family context can be seen as comprising assets that include how the family functions, how well it manages its resources, and how it copes with the internal and external stresses that all families face. These family assets may enable or inhibit children's early literacy development.

With the critical role the family plays in the lives of preschool-aged children, the purpose of this study was to more carefully examine the influences of family assets on preschool-aged children's literacy development. These influences were studied over a one-year time span, which allowed for the examination of concurrent and longitudinal associations between family assets and children's emerging literacy skills. Investigating the nature of the connection between family assets and preschool-aged children's literacy development may provide valuable information for educators and policy-makers wanting to improve the early literacy skills of young children. The results may help practitioners decide how to best direct services and resources to families with young children.

family influences on literacy and language development

The foundation for literacy is laid during the preschool years, and it is during this time that young children develop the literacy and language abilities that will help them be successful in school and in life (Morrow, 2001). This development, however, does not occur in isolation; rather it takes place in a rich environment of direct and indirect influences. Bronfenbrenner's (1979) ecological theory has been particularly useful in exploring contextual influences on children's development. Ecological theory purports that children develop within a variety of social contexts, and that a primary context is the family. The family context includes interactions between the child, his or her parents, and any siblings and other adults that are present in the home or family unit. Furthermore, the family context can provide a supportive climate and structure that fosters healthy child development (Bronfenbrenner, 1979).

In terms of literacy development, much research demonstrates that the home serves as an important influence in the development of emergent literacy skills

in young children. For example, parental efforts that directly engage children in activities designed to foster literacy or language development, such as joint book reading contribute to children's emerging literacy and language skills (e.g. Burgess et al., 2002; Bus et al., 1995; Lonigan and Whitehurst, 1998). The extent to which parents read books with children, provide books and other print material in the home, and engage children in learning opportunities contribute to children's literacy competence and set the stage for subsequent school success (Foster et al., 2005). Likewise, parents in Baker and colleagues' (1995) study reported that their children enjoyed singing songs, chanting nursery rhymes, and playing other rhyming games. Such parent-child activities added to children's literacy outcome scores. As Snow et al. (1998) argued, such interactive parent-child activities help children develop the precursors of literacy.

Beyond the direct engagement in parent-child activities, Snow et al. (1991) argued that the family context also can influence children's literacy development. They contended that the family context can function as an insulating device against external stressors and pressures while still providing the time and attention deemed necessary for fostering the acquisition of literacy. Results from their study of elementary school children showed that family context factors predicted children's writing skills and reading comprehension (Snow et al., 1991).

A developmental assets approach may help explain how supportive aspects of the general family context can facilitate positive literacy development in young children. Rather than the more common deficit-based approach, researchers and professionals who work with children and youth have turned their attention to strength-based models of child and youth development. The concept of strengths or assets lies at the heart of the developmental asset framework. Developmental assets are defined as a set of interrelated experiences, relationships, skills, and values that enhance child outcomes (Benson et al., 1998; Scales and Leffert, 1999). They are categorized as either internal, referring to attributes and qualities within the child, or external, encompassing the various ecologies interacting with the child (e.g. home). In terms of literacy development, such assets might include a supportive family context that enables a rich home literacy environment, adults valuing their roles in enhancing literacy development, and an abundance of early literacy activities in the child's environment. In this way, a supportive family context might be seen as providing developmental assets for young children's literacy development.

family assets

Research has identified several key family assets that are typically associated with various aspects of children's development: family resources, family routines, and parenting stress (e.g. Barbarin et al., 2006; Churchill and Stoneman, 2004; Farver et al., 2006; Snow et al., 1998).

family resources

Family resources can be seen as the financial, social, and emotional capital families have available to meet their needs (Dunst and Leet, 1994). An extensive literature on the impact of socioeconomic disadvantage on children's literacy and language development indicates that socioeconomic status is predictive of children's early literacy and language functioning (e.g. Entwisle and Alexander, 1996; Foster et al., 2005). McLoyd (1998), for example, surveyed the literature on the impact of socioeconomic disadvantage on children's development and concluded that poverty status and SES are predictive of children's early cognitive and language functioning, academic achievement, social competence, and emotional and behavioral adjustment. In their study of children enrolled in public pre-kindergarten education programs, Barbarin et al. (2006) found that the higher parents' education and family income, and the lower perceived family financial need, the better children's literacy and numeracy skills.

Dunst and Leet (1994), however, argued that family resources go beyond income and actually comprise a constellation of resources, including time, skills, health, finances, and social resources. Families may have financial resources but may still lack the time, skills or social support to effectively foster their children's literacy and language growth. In fact, Dunst et al. (1988) found that many middle income mothers were unable to invest the time and energy to engage their children in developmentally stimulating activities because they were more concerned about getting other family needs met, and were investing time and energy toward this end. Therefore, children's literacy development may be influenced by growing up in families in which parents lack the time, skills, or social resources to fully support their needs.

family routines

Family routines refer to 'the predictable, repetitive patternings that characterize day-to-day, week-to-week existence within a family unit' (Churchill and Stoneman, 2004). Furthermore, routines are 'observable, repetitive behaviors which involve several family members and which occur with predictable regularity in the ongoing life of families' (Boyce et al., 1983: 198). Family routines can be found in activities such as mealtime, bedtime, scheduling of activities, communication, and personal time (Jensen et al., 1983). The presence of routines can provide children with a sense of stability, continuity, and predictability. Such routines can buffer children from adverse circumstances and foster more positive child outcomes (Churchill and Stoneman, 2004).

In terms of children's literacy development, Serpell et al. (2002) found that regular routines surrounding dinnertime conversations, reading aloud, and doing homework were associated with children's basic reading and comprehension skills in kindergarten through third grade. Furthermore, they found that these

routines were more powerful in predicting children's literacy skills than were family income and ethnicity. Hence, children's literacy development may be aided by the presence of regular routines within the family.

parenting stress

In addition to worries over family resources, parents can face issues of challenging child behavior and the strain of fulfilling parenting tasks (Crnic and Greenberg, 1990). Such stressors can impact children's development. For instance, children tend to exhibit greater negativity when their parents are stressed (Crnic et al., 2005), as well as insecure attachment and behavior problems (Crnic and Low, 2002). Farver et al. (2006) found that preschool-aged children's language scores were negatively associated with mothers' perceived parenting stress.

In discussing the relationships between parenting stress and children's acquisition of literacy, Sonnenschein et al. (1996) wrote:

. . . the development of literacy occurs within a larger social context. When parental psychological resources are depleted or when there is interpersonal rancor within the family, literacy development may be compromised. Although we can encourage parents to read to their children and take them to the library, they will probably be less likely to do so in the presence of financial or interpersonal stresses. (p. 16)

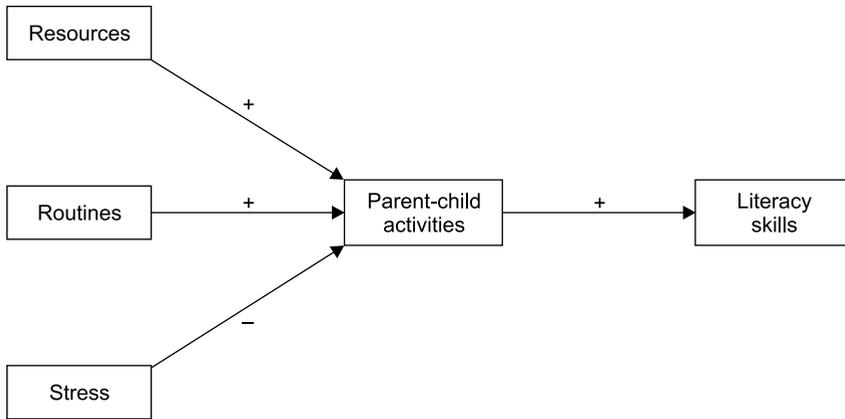
When parents have too much stress they are likely unable to engage in the types of behaviors and activities that strengthen children's literacy and language skills. Therefore, we might expect that the greater the parenting stress, the more impeded children's literacy development will be.

overview of the present study

The literature reviewed to this point, albeit limited, indicates that family assets (i.e. family routines, family resources, and parenting stress) can have an impact on various aspects of young children's development. The nature of that impact on children's literacy development, however, is still in question. Specifically, in what ways are family routines, family resources, and parental stress connected with preschool children's literacy development? The present study extends the literature in two important ways. First, it explores the separate and joint influences of the family assets of more family routines, greater family resources, and lower parental stress all within the same study. This will allow us to investigate the separate and joint contributions of these family assets to young children's literacy development.

Second, and more importantly, the study proposes and tests one possible mechanism through which the family assets might affect children's literacy development. Specifically, this study tested a model, illustrated in Figure 1, which proposed how family assets might be connected with preschool-aged children's

figure 1 conceptual model of the contributions of family assets to children’s literacy development



literacy development. In the model, we argue that supportive family assets, characterized by greater resources, regular routines, and lower parenting stress allows parents to more regularly engage in interactive enriching activities with their children, which in turn, increases children’s literacy abilities. Therefore, family resources and family routines should have a positive, direct effect on the frequency of parent–child literacy activities, while parenting stress should have a negative effect on those activities. The frequency of parent–child literacy activities, in turn, should have a positive effect on preschool-aged children’s literacy outcomes. The findings may hold implications for those community agencies and educators striving to offer programs and interventions aimed at improving young children’s early literacy development.

method

participants

Participants consisted of 85 parents (80 mothers and five fathers) and children (40 girls and 45 boys). The children were at least three years of age but not yet in kindergarten. The average age of parents was 34.3 years (SD = 4.5 years) and for children was 49.7 months (SD = 6.8 months). The majority of families was Caucasian (92.8%), whereas 2.4 percent were of Hispanic decent, 2.4 percent reported their ethnic background as ‘other’, 1.2 percent were Asian American or Pacific Islander, and 1.2 percent were multi-ethnic or multi-racial. In terms of educational achievement of parents, 7.1 percent had completed high school or earned a GED; 35.7 percent had completed high school and some college;

25 percent had completed a four-year college degree; and 32.1 percent had completed a graduate degree. The median annual income reported by families in the study was \$60,000, which matched the median family income for all families in the western United States in the year 2000. Thus, the sample was primarily white, middle income and fairly well-educated.

procedures

Families were recruited through licensed child care centers in an urban city in the western United States. Child care centers were randomly selected from a list of all licensed facilities in the county in which the study was conducted. In order to recruit parents from classrooms, teachers distributed flyers inviting families to participate in the study. Unfortunately, this methodology did not allow us to identify the number of parents volunteering for the study compared to the total number of parents who received the flyer. Once direct contact was made with parents who wished to participate in the study, initial data collection interviews were scheduled. Before completing the self-administered questionnaire, researchers explained the goals (i.e. to investigate those factors at home that influence children's literacy and language development) and procedures of the study to parents and had parents sign informed consent forms. At the same time, researchers assessed children's print knowledge and emergent writing skills. Parents could observe the child assessments but were instructed not to influence their children's responses.

Most interviews were completed within one hour. Families were assured their participation was completely voluntary and that all responses would be kept strictly confidential. Families were paid \$20 for their participation. Approximately one year following the initial interview, researchers re-contacted parents and assessments of children's literacy skills were gathered again. Families were paid an additional \$20 for their participation in the second assessment.

A total of 123 families participated at the initial assessment but only 85 completed the follow-up assessment one year later. This study focused only on the 85 families completing both the initial and follow-up assessments. Families who were not included in the follow-up assessment either could not be located or had initially agreed to participate in the follow-up but had since decided against it. A series of group comparisons were conducted to determine if the families who participated in both the initial and follow-up assessments differed statistically from families who did not (i.e. families who only participated in the initial assessment). The *t*-test and chi-square comparisons revealed no statistically significant differences on family characteristics or on child outcomes for those families that participated in both data collection periods versus those families who participated only in the initial assessment.

measures

Self-administered questionnaires were completed by parents and standardized assessments were used to measure children's literacy skills. Family asset and parent-child literacy activity variables were collected at Time 1 only, while child literacy measures were collected at Time 1 and Time 2. Means and standard deviations are presented in Table 1.

family asset variables

Perceptions of *family resources* were assessed using the Dunst and Leet (1987) Family Resource Scale (FRS). The FRS is a 30-item scale designed to assess the adequacy of a number of family resources. Parents were asked to report the adequacy of such basic necessities as 'Food for two meals a day' and 'Heat for your house or apartment' as well as the adequacy of social resources (e.g. 'Time to be with spouse or close friend' and 'Someone to talk to') and the family's ability to engage in entertainment activities (e.g. 'Toys for children' and 'Travel/vacation'). Responses were made along a five-point scale (1 = *not at all adequate* to 5 = *almost always adequate*). Possible scores on the FRS range from 30 to 150, with higher scores indicating higher levels of perceived family resources. In the present study, the FRS had a reliability coefficient of .94.

Family routines were measured using the Family Routines Questionnaire (FRQ; Boyce et al., 1983; Jensen et al., 1983). The FRQ is a 17-item scale that measures engagement in a number of family practices, such as 'Family checks in or out with each other when someone leaves or comes home' and 'Family eats at the same time at night'. Responses are made along a four-point continuum (1 = *almost never* to 4 = *everyday*). Scores on this scale can range from 17 to 68, with higher values reflecting a higher number of reported routines within the family. A reliability of .77 was obtained for the FRQ in the present study.

Parenting stress was measured with the Parenting Daily Hassles scale (PDH; Crnic and Booth, 1991; Crnic and Greenberg, 1990). The PDH is a 20-item scale that measures how often a number of minor hassles occur within the family, such as 'Continually cleaning up messes of toys or food' and 'The kids are hard to manage in public (grocery store, shopping center, restaurant)' along a five-point scale (1 = *never* to 5 = *constantly*). Scores could range from 20 to 100, with higher scores reflecting higher levels of perceived stress. The reliability of the PDH in the present study was .84.

parent-child literacy activities

To assess the frequency of interactive parent-child literacy activities, parents were asked how often they read aloud to children, the number of minutes children were read to the previous day, the number of picture books in the home for

children's use, and how often parents visited the library with their children. In addition, four items were added to gauge how often parents engaged in other, non-book reading activities with children, including how often parents engaged in reciting rhymes, telling stories, drawing pictures, and playing games with children. Finally, parents were asked how old their children were when they began reading together and how often children viewed educational television programs such as *Sesame Street*. A composite variable was created by averaging the standard scores of the items and all variables were scaled so that higher z-scores represented more positive outcomes. The alpha for the composite variable was .78.

child literacy outcomes

Three child literacy outcomes were assessed. Children's *print knowledge* was measured using the Child's Emergent Literacy Task (CELT; Abt Associates, Inc., 1991), a 17-item measure. The CELT asks children to point to the front of a book, indicate in which direction we read, point to a letter, point to a word, and identify a period and its function within a sentence. Children were given 1 point if they provided a correct answer and 0 points if they provided an incorrect answer. Possible scores on this scale range from 0 to 17. Children's *emergent writing* also was measured using the CELT. Two questions comprised this measure; children were asked to write their names (1 = *no attempt to write their names* to 5 = *writing their names correctly*) and their ages (1 = *no attempt to write their ages* to 5 = *writing their ages correctly*). Possible scores ranged from 2 to 10. Children's *reading interest* was measured by three parent-response questions: how often children looked at books by themselves (1 = *hardly ever* to 5 = *two or more times a day*), how often children asked to be read to or looked at books (1 = *hardly ever* to 5 = *two or more times a day*), and how long will children looked at books by themselves (1 = *less than 5 minutes* to 5 = *15 minutes or more*). Possible scores on the child interest scale could range from 3 to 15, with higher scores indicating greater child interest in books and reading. The reliability for the scale was .68.

results

preliminary correlations

Initially, we computed correlations to explore the associations among the study variables. Table 1 shows that the three family asset variables of family resources, routines, and stress were interrelated. Specifically, the higher the perceived resources, the more regular the reported family routines, meaning that those parents reporting greater family resources also reported more regular routines in the family. Higher parenting stress, however, was associated with lower resources and routines. Apparently, stressed parents also had fewer resources

table 1 correlations, means, and standard deviations of variables in the path models

	1	2	3	4	5	6	7	8	9	10
1. Family resources										
2. Family routines	.33**									
3. Parenting stress	-.30**	-.37**								
4. Parent-child activities	.32**	.52***	-.25*							
5. Print knowledge 1	.15	.29**	.08	.26*						
6. Reading interest 1	.24*	.44***	-.24*	.68***	.27*					
7. Emergent writing 1	.13	.12	-.07	.20	.44***	.12				
8. Print knowledge 2	.11	.23*	-.06	.31**	.68***	.29**	.49***			
9. Reading interest 2	.15	.40***	-.31**	.58***	.27*	.55***	.12	.29**		
10. Emergent writing 2	.05	.08	.07	.02	.26*	.05	.38***	.44***	.13	
Mean	113.6	51.1	55.3	33.5	5.2	10.7	5.9	9.0	11.0	8.6
SD	12.3	6.4	8.5	4.1	2.8	1.9	2.7	3.2	1.9	2.1

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

and fewer routines in the household. Finally, the greater the reported resources and routines, the more frequent the parent-child activities. In other words, parents were more likely to engage their children in literacy enriching activities when they had greater resources in the family and more regular routines in the household.

Examination of the correlations between the family assets and children's literacy scores indicated that print knowledge at Time 2 was positively correlated with family routines. Child's reading interest was positively correlated with family resources at Time 1 and family routines at Times 1 and 2. Child's reading interest was negatively correlated with parenting stress at Times 1 and 2. Finally, emergent writing was positively associated with family routines at Time 1.

tests of path models

The proposed relationships depicted in Figure 1 were examined using path analysis, with separate path models computed for children's print knowledge, reading interest, and emergent writing at both Time 1 and Time 2. We used the structural modeling computer program 'AMOS' (version 4.0, Arbuckle and Wothke, 1999) to conduct the path analyses. Structural equation modeling has

the advantage of being able to estimate all of the predicted paths in each model simultaneously, rather than running a series of separate regression equations, as is required in traditional multiple regression techniques (Maruyama, 1998). All of the path coefficients shown in the results are standardized.

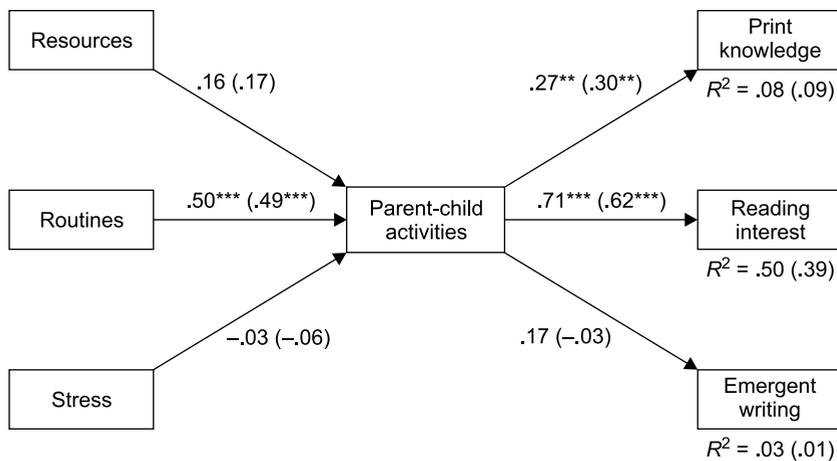
We first computed the path models for Time 1. Figure 2 presents a composite of the standardized path coefficients across all three models. The results indicate that the greater the reported routines in the household, the more likely parents were to engage their children in literacy enhancing activities. As a whole, the three family asset variables accounted for 35 percent of the variance in parent-child activities. In other words, family routines, and to a lesser extent, family resources and parental stress, appear to have some degree of impact on how often parents and children engage in literacy enriching activities together.

Figure 2 also shows that the more often parents and children engaged in literacy enhancing activities, the higher the children's print knowledge and reading interest. Together, the three family asset variables and parent-child activities accounted for 8 percent of the variance in children's print knowledge, 50 percent in reading interest, and 3 percent in emergent writing. Stated differently, family assets and parent-child engagement in literacy activities seem to have the strongest connection with children's reading interest, and to a lesser extent, children's print knowledge and emergent writing.

associations one year later

Next, we examined the path models for the Time 2 relationships specified in Figure 1. Once again, separate models were tested for each child literacy

figure 2 composite results for test of the models predicting the contributions of family assets to children's literacy development



Note: Time 2 results are in parentheses. * $p < .05$; ** $p < .01$; *** $p < .001$.

and language skill and Figure 2 presents a composite of the standardized path estimates (in parentheses) for the three Time 2 models. As can be seen in the figure, only family routines were directly associated with parent–child activities, and parent–child activities were directly related to children’s reading interest at Time 2. In other words, the greater the reported routines in the household, the more likely parents were to engage their children in literacy enhancing activities, and in turn the higher the children’s interest in reading one year later. All told, 39 percent of the variance in Time 2 reading interest was explained by the family asset and parent–child activities variables, while accounting for 9 percent of the variance in print knowledge and 1 percent for emergent writing. Thus, it appears that the presence of routines in the family, in particular, is conducive of parents and children engaging in literacy activities that enhance children’s interest in reading even one year later.

tests of alternate models

Rather than seeing the influences of the family assets as mediated through parent–child activities, we tested an alternate model in which family resources, family routines, and parenting stress would have a direct effect on children’s literacy skills. Results indicated that regularity of family routines was associated with children’s Time 1 and Time 2 print knowledge and reading interest. Specifically, the more regular the routines in the household, the greater the children’s performance on the print knowledge task and their interest in reading. No direct effects were found for family resources and parenting stress.

We also tested an alternate model in which we examined the models using reported level of family income rather than perceived family resources.¹ Results were largely similar for family income and family resources and did not substantially affect the overall fit of the model as well as the associations found among the other independent and dependent variables.

discussion

The purpose of this study was to more carefully examine the influences of family assets on preschool-aged children’s emerging literacy development. We tested a model in which the family assets of resources, routines, and stress directly related to the occurrence of parent–child literacy activities in the home, which in turn was associated with children’s print knowledge, interest in reading, and emergent writing. The results confirmed that the more frequent the reported routines in the household, the more likely parents were to engage their children in literacy enhancing activities, and in turn the higher the children’s print knowledge and reading interest. This was the case both initially and a year later.

Further, the test of the model showed that family resources and stress were not as strongly associated with the frequency of parent–child literacy activities or with child outcomes.

Overall, the results suggest that the presence of family routines is the family asset variable that was most strongly associated, both directly and indirectly, with a number of children's literacy outcomes. The value of routines in a family is that they can provide a sense of consistency, stability, and predictability (Churchill and Stoneman, 2004). Family routines likely provide a structure in which parents and children can regularly engage in literacy enhancing activities. In fact, engaging in parent–child literacy activities might be a specific routine in many families, such as building regular times to read with children. Serpell et al. (2002) found that regular routines surrounding reading aloud, doing homework, and dinnertime conversations were associated with children's basic reading and comprehension skills in the early elementary school years. Likewise, the presence of regular, consistent routines in families appears to be important to the literacy development of preschool-aged children.

In addition, the results indicate that parent's efforts to directly engage children in literacy activities were associated with children's increased print knowledge and interest in reading. This finding is consistent with previous research that shows that increases in parent–child activities designed to foster literacy development, such as joint book reading, contribute to children's emerging literacy and language skills (e.g. Burgess et al., 2002). The extent to which parents read books with children, provide books and other print materials in the home, and engage children in learning opportunities contribute to children's literacy competence (Foster et al., 2005). Thus, the finding in the present study of the positive association between parent–child activities and children's literacy development corresponds to the existing literature.

The findings for perceived family resources and parenting stress were more mixed. On the one hand, perceived family resources were positively correlated with parent–child activities and children's Time 1 reading interest, while parenting stress was negatively correlated with parent–child activities and children's reading interest at Time 1 and Time 2. These correlations are in accordance with the expected associations seen in Figure 1. The perceived level of family resources and parenting stress, however, were not significantly associated with parent–child activities or children's print knowledge, reading interest, or emergent writing in the full models. When included with family routines, the strength of the associations for family resources and stress are attenuated. It might be that family resources and stress are important to children's literacy development but not as strongly as family routines. On the other hand, family resources and parental stress may contribute to children's early literacy development but the measures used in this study may not have been adequate to detect those contributions.

Overall, family context, especially the presence of regular routines in the family, can be seen as an asset in children's environment which can aid in the development of literacy skills. As an asset, the family context appears to enable the engagement in literacy enhancing opportunities for young children, such as becoming familiar with literacy materials, engaging in literacy activities with others, exploring literacy and language behaviors, and observing the literacy activities of others. Furthermore, Snow et al. (1991) contended that the family can function as an insulating device against external stressors and pressures while still providing the time and attention deemed necessary for fostering the acquisition of literacy.

implications and limitations

The findings suggest a need for those who design and implement programs aimed at strengthening young children's literacy development to more carefully consider the contributions of the overall family context. For example, our results indicate that efforts to foster more regular routines in the family may lead to enhanced children's print knowledge and reading interest. Those educators or policy-makers wanting to improve children's literacy skills will not only want to increase the frequency and quality of parent-child literacy activities, but strengthen the general family context, as well. Interventions designed to improve children's literacy development may be more likely to have lasting impacts if they include a focus on assets in the family context, such as fostering regular routines, effective resource use, and positive stress management.

We cannot expect to drastically alter children's literacy development, however, simply by helping families establish routines, use resources, or manage stress. As the results in the present study seem to indicate, family assets seem to operate most effectively by enabling parents and children to regularly engage in literacy enriching activities together. Therefore, a comprehensive approach including parent-child activities, modeling of literacy behaviors by parents, and positive parental beliefs (Burgess et al., 2002; Foster et al., 2005; Weigel et al., 2005), along with supportive family assets, is needed to build strong literacy skills in preschool children. Consistent with Bronfenbrenner's (1979) ecological model, children's abilities are influenced by the many contexts of which they are a part, and many other factors – individual, family, community, and society at large – contribute to the development of literacy skills in preschool-aged children (e.g. Dickinson and Tabors, 1991; Weigel et al., 2005). This study suggests that assets in the family (e.g. regular routines, adequate resources, and reduced stress) are positive for children's literacy development, but those influences must be understood within the context of the overall quality of children's literacy environment.

The findings of the present study must be interpreted with caution in light of several limitations. A first limitation is that the results are based on a relatively

small sample of white, middle-income families and should be interpreted cautiously. We do not know how well the findings generalize to a broader range of ethnically diverse families and a wider range of incomes. Also, with a possible range of 30 to 150, most families in the present study had a fairly high level of perceived resources with a mean of 114. Participants also had relatively stable routines, reporting mean scores of 51 within a possible range of 17 to 68. Similarly, mean parenting stress scores were just over 55 with a possible range of 20 to 100. How well these findings apply to other families that may have differing levels of resources, routines, and stress, such as working-class, immigrant, or multigenerational families, is a question for future research. These family assets may vary more broadly in a more diverse sample.

In addition, only a restricted number of children's literacy skills were examined. To create a broader picture of ecological influences, future research should include a wider range of measures, such as phonemic awareness, letter knowledge, word decoding, concept of story, and so forth. Also, the study relied on self-report data from parents. Their responses to the questionnaires may have been affected by difficulties in recalling frequencies of behaviors and times of occurrences, social desirability, and misunderstanding of researchers' questions.

conclusion

The foundation for literacy skills is set during the preschool years, and it is during this time that young children develop abilities that will help them be successful (Morrow, 2001). The family plays an important role in the development of early literacy skills. Although reading aloud with children is an important activity for building early literacy skills and understanding in preschool age children (Bus et al., 1995; Whitehurst et al., 1994), findings from this study suggest that interventions also should include efforts to promote a supportive overall family context as an additional means to enhance children's literacy development. Knowing how to best focus efforts targeting the enhancement of home literacy environments may eventually help to create better interventions that will produce lasting changes in children's development.

acknowledgements

The study was supported by a grant from the Nevada Agricultural Experiment Station. A version of this article was presented at the National Reading Conference, Austin, TX, USA, November 2007.

note

1. Our original intent was to include both family income and perceived family resources simultaneously in the model. But concern was raised over the strength of correlation between family income and reported family resources ($r = .60$).

Furthermore, we tested preliminary models that included family income and perceived family resources and the sign for resources was reversed from positive in the correlations to negative, indicating a problem with multicollinearity.

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