The preschool home literacy environment provided by teenage mothers

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Teenage pregnancy is an issue receiving a growing amount of attention in the United States, with approximately one million children born to teenage mothers annually. Teen mothers tend to function less effectively in numerous realms than their peers who delay child-rearing, and the children of teen mothers are at greater risk of school failure. In the present study we surveyed 493 mothers (22% teen mothers) in order to compare the home literacy environments provided to preschoolers by teenage versus non-teenage mothers. In general, the teen mothers provided a home literacy environment that afforded their children fewer literacy experiences. The implications of these findings for the development of oral language and early reading-related skills are discussed.

Keywords: Literacy; Teen mothers; Child-rearing; Home literacy environment

Introduction

Teenage pregnancy is an issue receiving a growing amount of attention in the United States. Approximately one million children are born to teenage mothers annually (US Department of Health and Human Services, 2002). The consequences of teen parenthood have been the focus of extensive study. Teen mothers tend to function less effectively in numerous realms than their peers who delay child rearing. Teen mothers tend to obtain lower levels of education (for example, Moore & Waite, 1977), are more likely to divorce and spend more of their parenting years as single mothers (Bennett et al., 1995), have a higher incidence of stressful life events (Coley & Chase-Lansdale, 1998) and are more likely to have lower incomes as adults and
spend more time on welfare than those who delay childbirth (for example, Moore et al., 1993).

The children of teen mothers typically perform more poorly on a variety of measures. They typically score lower on measures of cognitive competence, especially language-based assessments, and by the elementary grades they tend to score lower on achievement tests (Moore et al., 1997; Luster et al., 2000). The functioning of the children of teen mothers also appears to worsen over time. Few differences are found in infancy, but delays in cognitive development begin to emerge relatively early and continue into the school years (Moore, 1986; Moore et al., 1997). In adolescence children of teen mothers experience higher rates of grade failure and delinquency (Grogger, 1977).

The differences in the cognitive, educational and behavioral outcomes of children of teen mothers versus non-teenage mothers have been primarily explained in broad terms using global factors such as the age of the mother, the educational level of the mother, socioeconomic status (SES) and income (Coley & Chase-Lansdale, 1998). Teen mothers have been shown to be just as warm, but less verbal, less sensitive and less responsive to their infants than older mothers (Culp et al., 1988), to provide a less stimulating home environment (Moore et al., 1997), to perceive their infants as being more difficult and to have unrealistic expectations (Brooks-Gunn & Chase-Lansdale, 1995).

The transition to parenting can be a stressful time for all parents, but for the teen mother this transition may be complicated by their typically deprived background and potentially poor support networks (Cowan & Cowan, 1992). Unfortunately, this early period of development is very important for the child. Children enter school differentially prepared to benefit from formal educational experiences, and these initial individual differences often translate into subsequent differences in reading and other areas of academic achievement (for example, Adams, 1990; Wagner et al., 1994, 1997). Most researchers and educators point to early educational experiences, especially early home literacy environment (HLE) experiences, as an important factor in these school entry differences. Numerous studies have documented the importance of early HLE educational experiences, including shared reading activities, for language and literacy development and subsequent success in school (for example, Share et al., 1984; Chaney, 1992; Meyer et al., 1994; Bus et al., 1995; Leseman & de Jong, 1998; Senechal et al., 1998; Burgess et al., 2002).

The present study compared the HLEs provided by mothers who had children as teenagers with the HLEs provided by those who delayed child birth. The HLE can be characterized by the variety of resources and opportunities provided to children as well as by the parental skills, abilities, dispositions and resources that determine the provision of these opportunities for children. We utilized a conceptualization of the HLE proposed by Burgess et al. (2002), which describes the HLE in terms of the level and type of interaction of the adult with the child. This model was selected as a basis for creating the questionnaire because it proposes theoretically derived categories that served as a guide for organizing the various aspects of the HLE. This model proposed that the HLE is not a unitary construct, but is composed of a variety of attitudes,
resources and activities that are inter-related, but that may influence different aspects of literacy development. The HLE consists of a number of activities that children observe as well as activities in which parents participate actively. Therefore, HLE assessment should include measures of global factors that serve as a limiting environment as well as more specific activities and opportunities that describe the literacy interface between parents and the child.

The ‘limiting environment’ can be characterized as the resources at a parent’s disposal. Parental resources include gross status or SES measures (e.g. income, education, occupation) as well as parental characteristics that influence their ability and disposition to convey information to others (e.g. IQ, reading ability, attitudes towards education and reading). Thus the limiting environment is comprised of traditional social class measures as well the attitudes and abilities that decide how parents dispense their resources. Parental resources and attitudes towards education and literacy influence the availability of leisure time, leisure-time activity choices (e.g. reading books, watching television) and their ability to carry out these activities successfully. The limiting environment includes family demographics (e.g. number of siblings) and other factors influencing family dynamics (e.g. stress-inducing events). The limiting environment should primarily exert an indirect influence on the development of language and literacy skills through its influence on the educational environment parents provide. For example, a parent who values reading may read more to their child. Even though its influence should be primarily indirect, the study of limiting variables is needed to understand and eventually manipulate the factors influencing the environment parents create for their children.

In contrast to the indirect effects of the limiting environment, parents participate in a number of activities, ‘literacy interface’, which convey, either directly or indirectly, their views of the importance of literacy and other educational outcomes (e.g. mathematics is too hard for girls) as well as their knowledge and ability. Literacy interface includes both parental motivation and parental interest. For example, the parent who reads for pleasure instead of watching television conveys that reading is a desirable activity. Parents also engage children in activities explicitly designed to teach and encourage an interest in literacy, language and mathematics (e.g. such as shared reading, playing with magnetic letters). ‘Parental interest’ includes those parental activities that encourage or discourage an observational learning of the intrinsic value of literacy and learning behaviors. However, many of the behaviors that characterize parental interest may not occur often in the presence of young children. For example, a child will not typically see parents reading after they have gone to bed. Parental interest could also reflect some activities that are not conducive to literacy and language development. The parent who reads the newspaper in front of their child instead of talking to the child may not be promoting the development of a variety of skills. These aspects of the HLE are more parent centered. ‘Parental motivation’ includes those parental activities that directly encourage the learning of literacy or other skills (e.g. shared reading, pointing out print in the environment). These aspects of the HLE are more child centered. Thus the literacy interface is the point of contact between the abilities and beliefs of the
child and the abilities and beliefs of the parent, and comprises the most readily seen aspects of the HLE.

In summary, the HLE provided to preschool children is thought to play an important role in the development of oral language and reading-related skills. Children of teenage mothers are at greater risk of doing poorly in school. We predicted that teen mothers, on average, would provide a more disadvantaged HLE in terms of direct exposure to literacy materials and activities as well as more passive elements of the HLE such as exposure to parental modeling of reading. We also predicted that the differences in HLE provision would be associated with the educational and social class differences typically seen between teen mothers and non-teen mothers.

Methods

Participants

A sample of 493 mothers of children younger than 7 years old from the mid-western United States completed a survey designed to assess a variety of areas related to the HLE (e.g. demographics, parental leisure reading habits). Twenty-two percent of the mothers reported having a child while a teenager. This percentage is consistent with national and regional averages. Also consistent with the region, surveyed participants were primarily Caucasian. The sample represented a diverse social class range (e.g. incomes from $2000 to $120,000).

Materials

The survey consisted of a series of self-report questionnaires and checklists measures designed to assess demographics, provision of literacy resources in the home (e.g. shared reading, child books), and parental leisure reading and TV viewing habits. The questionnaires were based on one utilized by Whitehurst and colleagues (for example, Payne et al., 1994) and has been shown to yield measurements of the HLE that are significantly related to oral language, print knowledge and phonological sensitivity (for example, Payne et al., 1994; Burgess, 2002; Burgess et al., 2002). The checklist procedure is based on that used by Stanovich and colleagues, and has been suggested to circumvent the limitations associated with self-reports of frequency of reading behaviors (for example Cunningham & Stanovich, 1993). Several checklists were used as measures of relative print exposure to adult books (Stanovich & West, 1989) as well as children’s books (for example, Senechal et al., 1998). Parental general aptitude was assessed using the vocabulary checklist (Stanovich & West, 1989).

Results

Initial examination of the data indicated that some of the variables deviated from normality (e.g. age first read to was positively skewed). Transformation of the
variables Tabachnick & Fidell, 1996) improved the distributions but did not alter the pattern of correlations between the variables or the results for the analyses reported below. Therefore, all analyses were carried out using the untransformed variables.

There was considerable variability in the HLE measures. For example, the number of children’s books in the home ranged from none to about 1500 (mean = 71.02, standard deviation [SD] = 117.5), the age of onset of shared reading ranged from at birth to about 6 years old (mean = 6.16 months, SD = 7.51), and ranged from no television to 12 hours per day (mean = 1.20 hours, SD = 1.62). These numbers are consistent with the variability seen in previous studies (for example, Burgess, 2002) and highlight the extreme range of HLE experiences that are afforded to children.

The hypotheses were initially addressed using a series of analyses of variance (ANOVA) (see Table 1). The hypothesis that the HLE provided by teenage mothers would be more disadvantaged than that provided by non-teenage mothers was mainly supported. For the child-centered, parental motivation aspects of the HLE, teen mothers scored significantly lower on the two measures of children’s print exposure (child author and title recognition tests), had fewer children’s books in the home, had children who visited the library less often and watched television more often, and were less likely to play with magnetic letters with their children than non-teen mothers. There were no significant differences in the age of first shared reading experience or the presence of magnetic letters in the home.

For the parent-centered, parental interest aspects of the HLE, teen mothers scored significantly lower on the measure of adult print exposure as well as the self-report of reading for fun frequently. This indicated that the children of teen mothers had mothers who read less often for pleasure. Therefore, the children of teen mothers, in addition to being exposed to less child-centered literacy interaction, also were exposed to fewer instances of literacy used by adults for pleasure. This result is consistent with the observed higher rate of television viewing by teen mothers. The lower level of print exposure is also consistent with the lower vocabulary scores of the teenage mothers.

The teen mothers also differed from the non-teen mothers on the limiting environment aspects of the HLE. The teen mothers were in situations with lower incomes and demonstrated lower personal and father of the child levels of education. In order to control for the possibility that the differences in the HLEs provided by the teen mothers were primarily associated with differences in background and family factors (e.g. age of child, mother’s age, presence of a spouse, income), we next conducted a series of analyses of covariance (ANCOVA) (see Table 1). The pattern of results did not change for the analyses controlling for child’s age. However, in analyses where mother’s age was accounted for, the only aspects of the HLE remaining significantly different were the number of television hours viewed daily by the child, income levels, education of the mother and education of the father. These analyses suggest that the differences in the HLEs provided by the two groups may be more complicated than merely status as a teen mother. These findings are consistent with recent research indicating that the detrimental effects of teen parenthood may be at least partially a result of family and background factors (for example, Coley & Chase-Lansdale,
Therefore, they point to the importance of exploring resource factors when seeking to understand why the HLE’s provided by teen mothers and non-teen mothers are different. A final set of analyses was conducted to determine how much of the variance in the HLE could be explained using the current variables. A number of factors have been

<table>
<thead>
<tr>
<th>HLE variable</th>
<th>ANOVA</th>
<th>ANCOVA&lt;sup&gt;a&lt;/sup&gt;</th>
<th>ANCOVA&lt;sup&gt;b&lt;/sup&gt;</th>
<th>ANCOVA&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading variables: child-centered</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child author recognition test</td>
<td>8.11**</td>
<td>7.86**</td>
<td>0.40</td>
<td>0.10</td>
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<td>Child title recognition test</td>
<td>7.36**</td>
<td>6.90**</td>
<td>0.34</td>
<td>0.20</td>
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<td>Number of child books</td>
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<td>8.37**</td>
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<td>0.04</td>
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<tr>
<td>Age first read to</td>
<td>1.64</td>
<td>0.75</td>
<td>0.16</td>
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</tr>
<tr>
<td>Library frequency child</td>
<td>6.29*</td>
<td>3.78*</td>
<td>2.94</td>
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</tr>
<tr>
<td>Does child have magnetic letters?</td>
<td>2.30</td>
<td>1.79</td>
<td>2.50</td>
<td>2.91</td>
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<tr>
<td>Frequency use magnetic letters</td>
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<td>4.66*</td>
<td>2.99</td>
<td>3.72</td>
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<tr>
<td>Reading variables: parent-centered</td>
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<tr>
<td>Adult author recognition test</td>
<td>27.35***</td>
<td>27.23***</td>
<td>3.28</td>
<td>2.76</td>
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<td>0.15</td>
<td>0.36</td>
<td>0.76</td>
<td>0.42</td>
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<td>Learning to read hard for mother</td>
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<td>1.02</td>
<td>0.00</td>
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<tr>
<td>Mother reads for fun frequency</td>
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<td>4.25*</td>
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<td>0.06</td>
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<td>Vocabulary checklist</td>
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<td>8.68**</td>
<td>0.19</td>
<td>0.07</td>
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<td>Magazines</td>
<td>13.98**</td>
<td>14.78***</td>
<td>1.05</td>
<td>1.16</td>
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<td>Television variables</td>
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<td>Television per day, child (hours)</td>
<td>5.67*</td>
<td>8.23**</td>
<td>5.04*</td>
<td>5.38*</td>
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<tr>
<td>Television per day, mother (hours)</td>
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<td>5.89*</td>
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<td>1.15</td>
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<td>Current hours in daycare per week</td>
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<td>0.24</td>
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<td>Child ever been in daycare? (yes/no)</td>
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<tr>
<td>Income</td>
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<td>11.38***</td>
<td>9.40**</td>
<td>9.51**</td>
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<td>Education mother</td>
<td>24.8***</td>
<td>22.43***</td>
<td>7.65**</td>
<td>7.35**</td>
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<td>Education father</td>
<td>15.13***</td>
<td>14.16***</td>
<td>5.56**</td>
<td>6.31*</td>
</tr>
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<td>Parent status (spouse present)</td>
<td>18.56***</td>
<td>17.57***</td>
<td>5.84**</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Controlling for child’s age.
<sup>b</sup> Controlling for child’s age, mother’s age.
<sup>c</sup> Controlling for child’s age, mother’s age, spouse presence.

* p < .05, ** p < .01, *** p < .001
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shown to be related to HLE provision (e.g. income, parental reading habits) (for example, Evans et al., 2000; Burgess, 2004). We conducted a multiple regression analysis to determine the variance explained in parental knowledge of children’s literacy materials (i.e. child author recognition tests) by child’s age, mother’s age, teen parent status, presence of a spouse, mother’s education level, income and a measure of the mother’s print exposure (author recognition test). The overall model was significant ($F = 12.5, p < 0.000$) and explained 25.2% of the variance. The only significant unique predictors were the mother’s education level and the measure of relative print exposure. These findings suggest that the differences in the HLEs provided by teen mothers relative to non-teenage mothers are just as much a function of their education level and literacy experiences and attitudes as more general demographic factors such as income.

Discussion

In the present study we examined the HLE provided to preschoolers by teenage mothers versus those who delayed child childbearing. There were significant differences with the teenage mothers typically providing a more disadvantaged HLE. There was also a clear indication that the differences in the HLE were not merely due to differences in whether the mother was a teen parent or not. The only unique significant predictors of the mother’s relative knowledge of children’s literature were the mother’s education level and relative print exposure. The present results are consistent with the hypothesis that a significant factor in the poorer HLEs provided by teen mothers is because they lack the resources in terms of income, know-how or motivation to provide better a HLE.

Taken together these results add to the growing body of knowledge detailing the potential developmental and educational consequences for the children of teenage mothers. Numerous studies have found that the children of teen mothers are at greater risk for school failure (for example, Jewell, et al., 2000). The performance decrements of the children of teenage mothers also tend to increase as they mature and progress though the formal school system (Moore, 1986). Previous studies have demonstrated differences in a variety of parenting behaviors (for example, Culp et al., 1988) as well as in the provision of resources and activities in the home environment (for example, Luster & Dubow, 1990). The results of the present study help to detail the differences in a very specific area of the home environment. The HLE provided to preschoolers has been shown to predict reading development and school performance (for example, Evans et al., 2000; Burgess, 2002; Burgess et al., 2002). The finding that the children of teenage mothers typically are exposed to a disadvantaged HLE in terms of greater exposure to television and reduced exposure to literacy activities and models is therefore one likely contributor to their poorer school achievement.

The finding that teen mothers score lower in vocabulary coupled with the demonstrated decreased exposure to literacy may also put the children at risk for oral language environments that are less complex. Children acquire many of their more
sophisticated words from exposure to stories where language tends to be more formal and complex than spoken language. However, the teenage mother may also expose the child to poorer vocabulary in general oral experiences in addition to a poorer literacy environment. Children’s oral language skills and emergent literacy development are associated with the complexity of their oral language environments. This is an area that requires further study.

Teen mothers are at greater risk for lower educational achievement, being a single parent and lower income levels. However, it is difficult to determine whether these factors are a result of teen pregnancy itself as opposed to other pre-existing group differences. A number of the factors associated with teen pregnancy, such as education and income levels, are also related to the provision of HLE resources (for example, Leseman & de Jong, 1998; Burgess, 2004). However, it is also interesting to note that the best predictors of the HLE did not include more general demographic factors such as teen parent status. Instead the significant predictors were more educationally and literacy related. Therefore, although it is discouraging that teen mothers provide poorer HLEs, the finding of the present study do provide some suggestions for potential intervention areas.

It appears that adolescent mothers may differ not only in their views towards learning and literacy (Neuman et al., 1995), but in their ability and disposition to provide a stimulating HLE. The teenage mothers in the present study scored lower on the measures of print exposure and the measure of general cognitive performance, as well as attaining lower levels of overall education. Therefore, interventions that merely focus on the limiting environment, such as the SES of the teen mother, may ignore important contributing factors. Instead interventions may need to focus on training mothers in how to use literacy with their children and on why it is important to do so. Although many teen mothers recognize the importance of early exposure to literacy and acquisition of literacy skills, they may feel less capable of providing these opportunities to their children or underestimate the child’s developmental ability to benefit from early exposure to literacy (Neuman et al., 1995; Burgess, 2004). Literacy can be used to improve a variety of early literacy related skills (Senchal et al., 1996, 1998). For example, reading alphabet books is associated with improvements in phonological sensitivity and reading books with an emphasis on asking open-ended questions and encouraging the child to talk about the pictures and story is associated with vocabulary growth (Whitehurst et al., 1994, 1998).

The authors of this study are not implying that early exposure to literacy is the only way to achieve success in school or that the different literacy styles of various cultures are not conducive to literacy development. This study was an attempt to examine one potential reason for why the children of teenage parents tend to have more difficulty in school than the children of mothers who delay childbearing. We documented differences in preschool exposure to literacy between the two groups examined. We hope that future research will more closely examine potential ways to aid teenage mothers in the difficult task they face of adjusting to parenthood and raising children.
References


