Children’s Primary Health Care Services: Social-Cognitive Factors Related to Utilization

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Objective To test social-cognitive influences on parent decision-making processes related to children’s health care use. Methods Eighty-seven primary caretakers of children ages 4 to 9 years completed measures of child health and behavior, parent functioning, and social-cognitive factors related to parenting and health care use. Primary care use was obtained from the children’s primary care physician(s) for the 2 years prior to recruitment. Results Social-cognitive variables accounted for 13.2% of the variance in primary health care use, above and beyond the influence of child health status and psychosocial variables. The best predictive model, accounting for 29.8% of the variance in primary care use, included the interaction between parental stress and self-efficacy to cope with parenting demands, child behavior problems, self-efficacy for accessing physician assistance, medication use, and parent health care use. Conclusions Results documented the relationship between self-efficacy and parent stress in decision making about pediatric primary care use. Social-cognitive theory provides a new perspective for evaluating factors that influence health care use.

Key words utilization; health care; primary care; children.

Significant variability in the use of primary care services by children with similar health issues points to the need for a greater understanding of factors that influence pediatric health care use. Approximately one in eight children are classified as “consistently high” users of health care services (falling in the top third of a distribution of health care use), while a similar number of children are classified as “consistently low” users of health care services (Starfield, van den Berg, Steinwachs, Katz, & Horn, 1979). Atypical patterns of utilization are of concern for a number of reasons. Inappropriately low use may increase public health risks by limiting children’s receipt of immunization (Janicke, Finney, & Riley, 2001). Rare or infrequent use of health care services may fail to adequately protect individual and community child health (Riley et al., 1993). High use may increase the risk for iatrogenic harm to the child (Mechanic, 1995) and may place strain on the health care system.

Child health status is clearly a driving force behind a parent’s decision to seek pediatric health care services (Janicke et al., 2001; Kelleher & Starfield, 1990). However, a number of other factors have been linked to health care use. Child psychosocial concerns are frequently associated with increased use of pediatric health care services (Bernal et al., 2000; Lavigne et al., 1998; Riley et al., 1993). These concerns often include internalizing and externalizing behaviors, peer interaction difficulties, learning disabilities, and other school-related difficulties. Given the critical role of parents in the decision to seek medical care for their children, it is not surprising that a number of parent variables have also been included in analyses of pediatric utilization, including parental psychopathology (Kelleher & Starfield, 1990; Riley et al., 1993; Ward & Pratt, 1996) and parental social support (Riley et al., 1993; Ward & Pratt, 1996). The strongest parental predictor of pediatric utilization is maternal health care use, with greater maternal use of these services consistently linked to greater use of pediatric health care services (Janicke et al., 2001; Riley et al., 1993; Ward & Pratt, 1996).

Along with health status, child psychosocial factors,
and parental health care use patterns, rates of pediatric health care use have been linked to access factors (Andersen, 1995; Forrest & Starfield, 1998), child age (Ward & Pratt, 1996), family size (Duncan, Taylor, & Fordyce, 1987; Riley et al., 1993), and family conflict (Janicke et al., 2001; Riley et al., 1993). Despite these positive findings, multivariate studies incorporating many of these variables routinely account for little more than a third of the variance in pediatric health care use (Riley et al., 1993). Furthermore, the literature does not present a coherent picture of the processes that drive and maintain diverse patterns of pediatric primary care services. As primary care physicians take on a greater role as gatekeepers of the health care system, better understanding of the diverse factors that influence a parent’s decision to seek physician assistance are critical to ensure that families are connected with the services best suited to address their concerns.

The present study tested elements of an adapted social-cognitive model that explains processes involved in the parent’s decision to seek pediatric primary care services (Janicke & Finney, 2001). This model is based on the interaction of parenting stress and parental self-efficacy for coping with general parenting and daily stressors. Previous results examining the relationship between stress and child health care have been mixed (Abidin, 1983; Abidin & Wilfong, 1989; Roghmann & Haggerty, 1973). However, an explanation for these discrepant findings may lie in the definition of stress. Stressors can be viewed as objectively observed stimuli, while stress is a response to certain stressors in the environment (Whipple & Webster-Stratton, 1991). As noted by Wiedenfeld and colleagues (1990), “threat is not a fixed property of situational events. Rather, it is a relationship property concerning the match between perceived coping capabilities and potentially harmful aspects of the environment” (p. 1083). Examining potential stressors along with factors that may moderate the influence of potential stressors may provide a better understanding of the influences of stress on pediatric utilization. For example, research looking at the relationship between self-efficacy and stress has found that not only is self-efficacy a moderator between demanding situations and stressful outcomes, but it can be critical in helping parents function adaptively when faced with various demands (Ozer, 1995; Silver, Bauman, & Ireys, 1995). Furthermore, an investigation of the relationship between stress, family competence, and pediatric help seeking found that while stress was not correlated with pediatric contacts, the interaction between family support and daily hassles was related to pediatric health care visits (Black & Jodorkovsky, 1994).

In the context of pediatric primary care visits, it is not the negative life events or daily hassles that directly lead parents to experience distress or the negative outcomes associated with what many label as stress. Rather, it is proposed that parents who are high users of pediatric primary care services often experience difficulty handling the diverse demands of parenting due to low self-efficacy to cope with the many daily life demands and parenting tasks. These stressors may include child illness complaints, child behavior and emotional problems, parent emotional problems, daily hassles, or negative life events. Many of these factors have been linked to higher levels of pediatric utilization, and it is proposed that these variables exert their influence by increasing stressors on parents and reducing parental self-efficacy for coping with these parenting and life tasks. It is when multiple problems and demands accumulate, and self-efficacy to cope with these various demands is low, that the need for assistance is often felt.

Not all parents who experience a perceived need for help will seek primary care services. Social-cognitive theory also emphasizes the importance of self-efficacy and outcome expectations as important determinants of behavior (Bandura, 1997). In the present context, both of these are necessary elements that must exist if a parent is to exhibit sustained high use of primary care services. First, parents must believe in their ability to obtain adequate physician assistance. This involves activities such as scheduling the appointment, arranging transportation and day care for other children, arranging one’s schedule to allow a physician visit, effectively communicating the problem to the physician, and enlisting his/her support. Second, a parent must believe that the physician visit will produce positive outcomes, such as improved child health, reduced parental stress or anxiety, reduced parental responsibility for the presenting child issue, reduced parental burden, and increased personal time for the parent. If adequate self-efficacy for accessing physician assistance and positive outcome expectations for physician services are present, parents are more likely to seek assistance from their child’s primary care physician. This visit likely will not reduce all parental stress, but it will provide relief in some of the relevant domains so that parents’ current burden is reduced to a more manageable level.

It is hypothesized that parental stress and parental self-efficacy for coping with general parenting issues will interact to predict pediatric primary care use, so that children of parents with greater exposure to stressful situations and low parenting self-efficacy will have more visits to their primary care physician. Higher rates of physician use will also be positively related to self-efficacy for accessing physician assistance and positive outcome expec-
tations for visits to the pediatric primary care physician. Moreover, because many of the variables in this model tend to be proximal to the parent’s decision to seek services, it is also predicted that the social-cognitive variables as a model will explain more variance in pediatric primary care use than the child psychosocial and parent variables traditionally associated with children’s health care use.

Methods
Participants
Participants included 87 primary caretakers of children ages 4 to 9 years and their child. This limited age range was chosen to reduce the potential variability due to developmental factors. For families with more than one child in this age range, the target child was the youngest, because research has shown that younger child age is related to greater health care use (Newacheck & Halfon, 1986; Ward & Pratt, 1996). Exclusion criteria included non-English-speaking families and children with developmental disabilities. In addition, all parents completing the survey assumed primary responsibility, or shared equal responsibility, within the family for initiating and coordinating health care visits for their child. Subjects were recruited from the local community via flyers distributed to families through the physician offices, elementary schools, and the university. Parents were encouraged to call investigators to indicate their willingness to participate in the study and to schedule a meeting with a member of the research team.

Procedures
Project personnel met with parents to complete informed consent and to administer the paper and pencil questionnaire packet either in the family home or at the university clinic. All subjects who completed the survey were entered into two drawings for U.S. Savings Bonds ($300 and $100). Each survey was scored separately by two undergraduate assistants. When a discrepancy was found between the scores, the first author scored the measure to determine which score was accurate. This study was approved by the institutional review board at Virginia Tech.

Measures of Predictor or Independent Variables
Demographic Questionnaire. A 16-item measure was used to obtain information about the child and family including child’s age and race and parent’s age and marital status.
Child Health Status. Parental-perception data of child health status over the past 2 years were gathered via a modified version of the Health Status Scale (Ware, 1976), which is a nine-item measure of health perceptions. On a 5-point scale ranging from “definitely true” to “definitely false,” parents indicated how true they felt each of the statements were concerning their child’s health (Appendix A). The reported internal consistency coefficient averaged .90, while test-retest reliabilities ranged from .76 to .86 (Ware, 1976). The scale mean in four field tests was 32 (Ware, 1976). Items for the current study were modified to focus on parent perceptions of child health status over the past 2 years. In the current sample, the measure demonstrated adequate internal consistency (Cronbach’s $\alpha = .82$).
Child Behavior Checklist (CBCL). Estimates of child behavior problems were gathered via the CBCL (Achenbach, 1991), which is a 118-item parent-completed checklist designed to assess a child’s behavioral, emotional, and social functioning. Using a 3-point scale (“not true,” “sometimes true,” “very true”), the parent rated the extent to which the item was representative of the child’s behavior. The $T$ score for the total behavior score was used in the present study. One-week test-retest reliability has been reported as .89, while the intraclass correlation coefficient was .95 (Achenbach, 1991).
Brief Symptom Inventory. The BSI (Derogatis, 1993) is a 52-item self-report instrument adapted from the Symptom Checklist-90-R. Items were rated on a 5-point scale, ranging from “not at all” to “extremely,” in terms of the level of distress experienced in the previous 7 days. The measure yielded nine primary symptom dimensions along with a global severity index. The $T$ score for the global severity index was utilized in this study to provide an estimate of parent global distress. Cronbach’s alpha for the global severity index of the BSI is .90 (Derogatis, 1993).
Social Environment Inventory. An estimate of parent stress was gathered via a modified version of the Social Environment Inventory (SEI; Orr, James, & Charney, 1989), which is a parent-completed self-report measure designed to facilitate the identification of parents exposed to high levels of stressors. Parents were instructed to endorse each item as either a “yes” or “no,” depending on whether they had been exposed to the stressor within the past 12 months. Test-retest reliability on a sample of 141 women was .74. Construct validity was demonstrated by associating the SEI with the Center for Epidemiologic Studies Depression Scale. A supplemental 15-item subscale was added to the SEI and consisted of items to assess for the presence of potential daily hassles.
Parenting Self-Agency Measures (PSAM). This is a five-item self-report assessing parental perceptions of effectiveness in the parental role (Dumka, Stoerzinger, Jackson,
Janicke and Finney

Adequate internal consistency (coefficient \( \alpha = .70 \)). In the current sample, the measure demonstrated adequate internal consistency (coefficient \( \alpha = .80 \)).

Self-Efficacy for Accessing Physician Assistance (SEAPA). This is a 14-item self-report questionnaire constructed specifically for use in the present study (Appendix B). It was designed to assess parents' perceptions of their ability to manage the tasks necessary to visit the physician (i.e., schedule an appointment, arrange their schedule, and arrange transportation), as well as their ability to enlist their physician's assistance (i.e., remember all concerns, communicate those concerns, and redirect the physician). Using a 7-point scale, parents indicated how often they “feel or think like the statement.” Dumka and colleagues (1996) report an alpha coefficient equal to .70. In the current sample, the measure demonstrated adequate internal consistency (coefficient \( \alpha = .80 \)).

The Parental Outcome Expectancy for Pediatric Physician Services (POPPS). This is an 11-item self-report questionnaire constructed specifically for use in the present study (Appendix C). It was designed to assess parental expectations of improved child health and reduced parental stress and anxiety. Using a 5-point scale, parents rated the extent to which they agreed or disagreed with each item. Items were summed to calculate a total efficacy score, with higher scores representing higher levels of perceived self-efficacy.

Items for this measure were generated through consultation with physicians and researchers experienced in pediatric health care issues. In addition, some of the items in this scale were modified from the Family Empowerment Scale (Koren, DeChillo, & Friesen, 1992). Preliminary data for item analysis were collected from a sample of 29 parents with children ages 8 and 9 years. The measure was modified based on parental feedback and subsequent item analysis. In the current sample, the measure demonstrated good internal consistency (coefficient \( \alpha = .92 \)). All items were positively and significantly correlated with the total measure score. Exploratory factor analysis with factor extraction based on eigenvalues greater than 1 revealed a one-factor structure.

The number of visits made by each child to his/her primary care physician during the 2-year retrospective period constituted the main dependent measure of pediatric utilization. This time frame was chosen because a 2-year period is less subject to the transient changes in need for primary care than shorter periods of time (Riley et al., 1993), yet is long enough to provide a meaningful and manageable measure of utilization (Starfield et al., 1979). The number of visits was determined via direct chart review or review of copied medical records. All participants provided written authorization for researchers to receive copies of their medical records over the 2-year retrospective period. Physicians were contacted via phone and provided with copies of patient authorization and request for medical records.

Measure of Outcome or Dependent Variables

Child Primary Care Utilization. The number of visits made by each child to his/her primary care physician during the 2-year retrospective period constituted the main dependent measure of pediatric utilization. This time frame was chosen because a 2-year period is less subject to the transient changes in need for primary care than shorter periods of time (Riley et al., 1993), yet is long enough to provide a meaningful and manageable measure of utilization (Starfield et al., 1979). The number of visits was determined via direct chart review or review of copied medical records provided by the individual physician offices.

Results

The sample consisted of primarily white (89.7%), married (87.4%), and upper-middle socioeconomic status families. Respondents were mostly mothers (94.3%), and there were more males (59.8%) identified as the target child. Nearly all of the target children had health insurance (96.6%), with one child insured through Medicaid. Sociodemographic characteristics of the study sample, as well as the means and standard deviations for predictor and outcome variables are displayed in Table 1. The number of primary care visits by children in the sample ranged from 0 to 16 over the 2-year period, with a modal number of 3 visits. Tolerance and variance inflation factor estimates were within normal limits, suggesting that there were no problems with multicollinearity.

Initial multiple linear regression analyses of the rela-
tionship between the various independent variables and the dependent variable were performed to allow for scatter plot analysis of unstandardized predicted values versus unstandardized residuals, and for quantile-quantile (QQ) plots of observed versus expected normal values for the dependent variable. Assumptions for regression analysis assume a random distribution of unstandardized predicted values versus unstandardized residuals, as well as a linear relationship between observed versus expected normal values of the dependent variable (Pedhazur, 1997). Examination of the QQ plots showed a consistent non-linear pattern of observed versus expected normal values for all variables against the dependent variable. Post hoc examination of the data showed that the dependent variable was not normally distributed. Square root transformation of the dependent variable resulted in a normal distribution. Subsequent scatter plots and QQ plots of multiple linear regression analysis using the square root of pediatric primary care utilization showed a consistent random distribution of unstandardized predicted values versus unstandardized residuals and a consistent linear pattern in QQ plots. As a result, the square root of pediatric primary care utilization was used as the primary dependent variable in the data analyses.

Table II displays the bivariate relationships between the individual predictor variables and the dependent variable. Higher SEAPA scores were associated with higher use of pediatric primary care services. Scores on the POPPS were not significantly related to pediatric primary care use, although there was a trend toward significance, with

<table>
<thead>
<tr>
<th>Table I. Descriptive Statistics for Demographic Variables</th>
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<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Child age, y</td>
</tr>
<tr>
<td>Child gender, % male</td>
</tr>
<tr>
<td>Child race</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>African American</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>Biracial/other race</td>
</tr>
<tr>
<td>Number of children in household</td>
</tr>
<tr>
<td>Households with 1 child</td>
</tr>
<tr>
<td>Households with 2 children</td>
</tr>
<tr>
<td>Households with 3 children</td>
</tr>
<tr>
<td>Households with 4 or more children</td>
</tr>
<tr>
<td>Mother as respondent</td>
</tr>
<tr>
<td>Age of respondent, y</td>
</tr>
<tr>
<td>Respondent is married</td>
</tr>
<tr>
<td>Child has health insurance</td>
</tr>
<tr>
<td>Household income, K</td>
</tr>
<tr>
<td>Income below $20,000</td>
</tr>
<tr>
<td>Income $20,000 to $50,000</td>
</tr>
<tr>
<td>Income $51,000 to $80,000</td>
</tr>
<tr>
<td>Income $81,000 to $110,000</td>
</tr>
<tr>
<td>Income over $110,000</td>
</tr>
<tr>
<td>Child health status</td>
</tr>
<tr>
<td>Medication status (currently on medication) (Yes = 25.3%)</td>
</tr>
<tr>
<td>General parenting self-efficacy (PSAM)</td>
</tr>
<tr>
<td>Parental stress</td>
</tr>
<tr>
<td>SEAPA</td>
</tr>
<tr>
<td>POPPS</td>
</tr>
<tr>
<td>Parental distress</td>
</tr>
<tr>
<td>Standardized total behavior score</td>
</tr>
<tr>
<td>Parent health care visits (over 2 y)</td>
</tr>
<tr>
<td>Child primary care visits (over 2 y)</td>
</tr>
</tbody>
</table>

PSAM = Parenting Self-Agency Measures; SEAPA = Self-Efficacy for Accessing Physician Assistance; POPPS = Parent Outcome Expectancy for Pediatric Physician Services
higher outcome expectations related to more frequent primary care visits.

Neither general parenting self-efficacy nor parental stress was a significant predictor of pediatric primary care use. However, the interaction between these two variables was a significant predictor of pediatric primary care use. Post hoc examination showed that when the parent reported low exposure to potentially stressful events and daily hassles, the level of general parenting self-efficacy did not affect pediatric primary care use (4.59 visits vs. 4.42 visits). However, as can be seen in Table III, when the parent reported higher exposure to stressful events and daily hassles, parenting self-efficacy affected pediatric primary care use (5.59 visits for children of parents with below average parenting self-efficacy vs. 6.88 visits for children of parents with above average parenting self-efficacy).

A three-block hierarchical regression analysis was used to assess the utility of the social-cognitive model variables above and beyond child health status, as well as psychosocial and parental utilization variables that have been previously related to pediatric health care use (for ease of reference, these variables are hereafter referred to as psychosocial variables). Child health status variables were entered as Block 1, psychosocial variables as Block 2, and social-cognitive variables as Block 3. Table IV shows that child health status and psychosocial variables together accounted for 20.1% of the variance of pediatric primary care use, while the social-cognitive variables accounted for an additional 13.2% of the variance ($p < .05$).

Lastly, best-subsets regression analysis was conducted to determine the best predictive model across all variables. Independent variables from this analysis were retained in the final model if they were significant at the $p < .10$ level. The analysis resulted in a five-variable model that accounted for 29.8% of the variance in pediatric primary care utilization (Table IV). The best predictor of primary care use was the interaction between potential parent stressors and general parenting self-efficacy, with the interaction accounting for 11.5% of the variance in children's primary care use. The child's total behavior score accounted for an additional 7.4% of variance, with higher behavior scores predicting higher primary care use. Child medication use, higher self-efficacy for accessing physician assistance, and higher parental health care use all predicted greater pediatric primary care utilization in this predictive model.

**Discussion**

Previous studies have documented the influence of child health status and behavior, parental psychopathology, and parent health care use patterns on pediatric health care use (Lavigne et al., 1998; Riley et al., 1993; Ward & Pratt, 1996). The current study points to the potential utility of also considering parents’ perceptions of the contextual and situational factors related to the child's health. In the present analyses, the social-cognitive variables were significant predictors of pediatric primary care utilization. As a unit the social-cognitive variables accounted for 13.2% of variance in pediatric primary care use even after accounting for child health status and psychosocial variables. Furthermore, the best predictor of children's primary care use across all variables in the best predictive model was the interaction between parental stress and general parenting self-efficacy, while self-efficacy for ac-
cessing physician assistance was also a significant predictor in the best predictive model.

There were limitations to the current study that emphasize the preliminary nature of these results. First, the retrospective nature of this study leads to the possibility that parent self-reports may have been biased by recent experiences in the health care system. This is especially a concern for the concept of self-efficacy. Although the construct of self-efficacy is intended to focus on one’s belief in his/her ability to perform a future behavior, the current study design used self-efficacy as a predictor of past behavior. Future studies examining this model will need to incorporate a prospective design to truly assess the predictive utility of these social-cognitive variables. Second, all participants had to initiate contact with the experimenter to volunteer to participate in the study. Those who took the time to volunteer may have been less pressured by their child’s health status or existing time commitments than the population of parents in general. Unfortunately, those most likely to be higher users of health care may have been least likely to volunteer to participate in the study. In fact, the distribution of parent-reported child health status and self-efficacy for accessing physician assistance were both weighted toward the high end, which suggests the presence of a high functioning sample. Undoubtedly, the lack of variability in child health status in the current sample also limited the ability to detect a significant relationship between child health status and primary care use and was not the best test of the current model. However, an additional explanation for the strength of the social-cognitive variables in the current model is that these variables are proximal to the parent decision-making process. These variables focus on parental perceptions, to which all decisions to seek help are related.

Although preliminary, these results suggest that social-cognitive variables play a role in a parents’ decision to seek primary care services for their child. Self-efficacy for accessing physician assistance was not only correlated with primary care use, but was a significant predictor in the best predictive model. The more confident that parents were in their ability to orchestrate effective interventions, the more likely they were to take their child to the primary care physician. Moreover, parental stress interacted with general parenting self-efficacy so that parents with exposure to more potential stressors and high general parenting self-efficacy were more likely to take their children to the primary care physician. Contrary to our expectations, it was not the parents who had little confidence in their parenting ability who sought help from the primary care physician when stressed, but rather the self-perceived able parents, confident in their parenting ability. When there are significant stressors impacting a family, some of which may involve the child’s health or behavior, taking the child to the pediatric primary care physician may be one thing that a parent can control to reduce her/his sense of burden. Thus, confident, action-oriented parents take steps to find a remedy when they feel the need, are stressed, or are overwhelmed.

Parental outcome expectations for physician assistance were not related to pediatric primary care use, although there was a trend toward significance. There are a couple of possible reasons for this less than robust relationship. The POPPS placed only limited emphasis on expectations for improved child health, which is an impor-

<table>
<thead>
<tr>
<th>Table III. Average Primary Care Use (Parental Stressors \times General Parenting Self-efficacy)</th>
<th>Below Average Parenting Self-Efficacy</th>
<th>Above Average Parenting Self-Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below average exposure to parental stressors</td>
<td>n = 17 X = 4.59 SD = 3.02</td>
<td>n = 31 X = 4.42 SD = 3.40</td>
</tr>
<tr>
<td>Above average exposure to parental stressors</td>
<td>n = 22 X = 5.59 SD = 4.38</td>
<td>n = 17 X = 6.88 SD = 3.28</td>
</tr>
<tr>
<td>n = 39 X = 5.15 SD = 3.84</td>
<td>n = 48 X = 6.15 SD = 3.94</td>
<td></td>
</tr>
</tbody>
</table>

Each subject was classified into one of the four quadrants in this table based on his/her parenting stress and general parenting self-efficacy scores. First, the mean for each of these two variables was calculated. Then the variables were dichotomized based on whether the subject score was below or above the mean value for each variable.

X = the average number of primary care visits for children in the cell over the 2-year retrospective period. For example, there were 31 parents who reported below average stress and above average general parenting self-efficacy (quadrant 2). The children of these parents averaged 4.42 health care visits over the study period.
tant part of parental burden. Greater emphasis on the assessment of improved child health may provide a richer assessment of outcome expectations. Moreover, given the voluntary nature of the study, parents who were stressed and burdened by the demands of parenting and daily life were probably less likely to take the time to initiate contact and volunteer to participate in this study. Within this sample, reduction in parental burden due to physician assistance may not have played as big a role as it might in other populations in which parents may experience greater perceived stress due to few coping resources and more environmental stressors.

It is important to emphasize that sustained high use is not necessarily inappropriate use. In many situations, high use is largely the result of poor child health status that requires frequent physician contact to monitor and treat symptoms. However, it can also be an indication that a family has an unmet need, which is not being effectively addressed by their primary care physician (i.e., child behavior or emotional problem, parental distress, family conflict, or child health concerns). For these families, the primary care physician may not be the professional best suited to address the issues underlying repeated help seeking (Janicke & Finney, 2001). Given this position, one strategy to offset sustained high use would be to raise parents’ self-efficacy to access other professional and nonprofessional sources that can help the family more efficiently address their current needs. If one can raise parents’ awareness of other potential sources of assistance, they may be more likely to consider seeking help from these alternative sources (Dewey & Hawkins, 1998). To this end it may be necessary for professionals to initially guide parents through the process of setting up appointments with other professionals. It may also be beneficial for primary care physicians to have established contacts in various helping agencies who are prepared to make a family’s first encounter with a new agency as easy and successful as possible.

Continued integration of pediatric psychologists into primary care settings is one strategy that could both improve self-efficacy to access psychological services and raise outcome expectations for these services. Psychologists can aid in assessment, provide brief targeted therapy, or facilitate appropriate referrals. Such firsthand experience with, and easy access to, psychologists may serve to increase parents’ self-efficacy for accessing and communicating with alternative sources. Moreover, inclusion in these settings will give pediatric psychologists the chance to demonstrate their effectiveness to both families and physicians, which can serve to raise outcome expectations for future consultation and reduce reliance on primary care physicians.

### Table IV. Regression Analysis of Predictive Models of Pediatric Primary Care Use

<table>
<thead>
<tr>
<th>Model/Variable</th>
<th>R</th>
<th>R²</th>
<th>SE of the Estimate</th>
<th>Cumulative Variance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Three-block analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 1</td>
<td>.285</td>
<td>.081</td>
<td>.7835</td>
<td>8.1*</td>
</tr>
<tr>
<td>Psychosocial variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 2</td>
<td>.449</td>
<td>.120</td>
<td>.7438</td>
<td>20.2*</td>
</tr>
<tr>
<td>Social-cognitive variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 3</td>
<td>.378</td>
<td>.132</td>
<td>.7016</td>
<td>33.4*</td>
</tr>
<tr>
<td><strong>Best predictive model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter between parental stress and general parenting self-efficacy</td>
<td>.278</td>
<td>.115</td>
<td>.274</td>
<td>11.5*</td>
</tr>
<tr>
<td>Total behavior score (CBCL)</td>
<td>.247</td>
<td>.074</td>
<td>.213</td>
<td>18.9**</td>
</tr>
<tr>
<td>SEAPA</td>
<td>.200</td>
<td>.054</td>
<td>.188</td>
<td>24.3**</td>
</tr>
<tr>
<td>Medication status</td>
<td>-.162</td>
<td>.031</td>
<td>-.157</td>
<td>27.4**</td>
</tr>
<tr>
<td>Parent health care visits</td>
<td>.168</td>
<td>.024</td>
<td>.154</td>
<td>29.8***</td>
</tr>
</tbody>
</table>

CBCL = Child Behavior Checklist; SEAPA = Self-Efficacy for Accessing Physician Assistance.

* Regression coefficients are standardized so that they represent the amount of change in the dependent variable that is attributable to a one-unit change in the standard score of the predictor variables, independent of all other variables examined.

* p < .01
** p < .05
*** p < .10
Efforts to help parents cope with life and parenting stressors could help encourage more effective patterns of health care utilization. For example, group well-child care interventions that expand support networks and increase parents’ knowledge of child rearing may help parents more efficiently and effectively manage child-related issues (Taylor, Davis, & Kemper, 1997). Training in stress- and time-management strategies as well as problem-solving skills may help families cope with multiple stressors. Alternatively, it may be beneficial to refer families to social workers and other social service providers who are well suited to help families obtain appropriate assistance from the many community agencies designed to help families.

Clearly additional research is needed to draw more definitive conclusions about the utility of social-cognitive variables in predicting pediatric primary care utilization. If the relationships suggested here are replicated in future studies, additional efforts to determine important contributors to self-efficacy for accessing assistance from physicians and other helping professionals may prove beneficial. Additionally, as stress varies across time, assessing stress at multiple points or at each primary care visit may provide more insight into the role of stress and perceived burden on pediatric primary care use.

Ideally, future research will build on these results by enhancing the methodology used in this study. For example, future studies should focus on capturing a wider range of health care services (e.g., specialty care, emergency department) from a larger cohort of families. Use of these alternative health care services can be a substitute for primary care use and is important to consider when examining factors that influence rates of health care use. A larger cohort of families could also improve the generalizability of results by including more diverse populations and allowing for a greater subject-to-variable ratio, which at 10:1 was toward the low end of acceptability for regression analysis in the current sample (Maxwell, 2000). The use of a more current measure of health status, along with a more diverse sample, would also provide a more thorough test of the predictive utility of this model. Furthermore, although both the SEAPA and POPPS exhibited adequate internal consistency in the present study, further validation studies are warranted before conclusions can be made about the validity of these measures.

Primary care utilization is a complex phenomenon with numerous factors affecting the parent’s decision to seek health care. Social-cognitive theory provides a new perspective for evaluating factors that influence health care use. Results of this study suggest that social-cognitive factors may play a role in influencing a parent’s decision to seek pediatric primary care services. However, the relationships identified in this model require further exploration. Studies based on this model may help expand our understanding of the parental decision processes and factors that influence primary care utilization. In turn, such efforts may ultimately inform intervention strategies to help health care providers best address the underlying, unmet needs of families.

Appendix A
Child Health Status
Please indicate how true you feel the following statements are according to the scale:
1—Definitely true 2—Mostly true 3—Don’t know 4—Mostly false 5—Definitely false

1. According to my child’s physician, my child’s health has been excellent.
2. Over the past two years, my child has felt better than he/she ever has before.
3. My child was somewhat ill.
4. My child was not as healthy as other children his/her age.
5. My child has been as healthy as any child I know.
6. My child’s health has been excellent.
7. Over the past 2 years, my child has been feeling badly.
8. Physicians have said that my child is in poor health.
9. Relative to other children, my child has frequently suffered from the flu, colds, or minor aches and pains.

Appendix B
Self-Efficacy for Accessing Physician Assistance (SEAPA)
Please indicate the degree to which you agree or disagree with the following statements according to the scale:
1—Strongly disagree 2—Disagree 3—Not sure 4—Agree 5—Strongly agree

1. I feel confident that I can communicate my concerns about my child to his/her doctor.
2. I feel confident that I can arrange my schedule in order to get my child to his/her doctor.
3. I feel confident that I can get the doctor to help me with my child’s problem.
4. I am comfortable scheduling an appointment with my child’s physician.
5. I feel confident that I can arrange transportation to get my child to the physician’s office.
6. I feel confident that I can take the steps necessary to obtain medical care for my child.
7. I feel confident that I am able to make good decisions about what services my child needs.
8. During the doctor’s appointment, I am able to remember all the questions and/or concerns that I have.
9. I feel confident that I can accurately describe my child’s symptoms to the physician.
10. I feel confident that I can get the physician to address my main concerns.
11. If my child’s doctor is not addressing my concerns, I feel confident that I can redirect him/her to address my main concern.
12. I feel confident that I can be assertive when my child’s needs are urgent.
13. I feel confident that I can arrange our finances to make sure my child obtains medical care when I have a concern with his/her health or behavior.
14. I am confident that I can arrange an appointment with my child’s doctor that is convenient for my family and me.

Appendix C

Parental Outcome Expectancy for Pediatric Physician Services (POPPS)

Please indicate the degree to which you agree or disagree with the following statements according to the scale:
1—Strongly disagree 2—Disagree 3—Not sure 4—Agree 5—Strongly agree

1. I feel more relaxed after I take my child to see his/her doctor.
2. My child’s problems improve after visiting his/her doctor.
3. My child’s physician helps with my concerns about my child.
4. After taking my child to the doctor, I feel less anxious about his/her health.
5. I often feel that the entire process of scheduling an appointment, arranging transportation, and getting in to see my child’s physician is such a hassle that it is just not worth it.
6. When I take my child to his/her doctor, the doctor provides information or assistance that makes my job as a parent easier.
7. I sometimes feel that it takes so long to see my child’s physician that it is just not worth the wait.
8. Taking my child to his/her doctor usually allows me more time for myself later.
9. Visiting my child’s physician reduces the demands placed on me as a parent.
10. When I take my child to his/her doctor, the doctor usually takes primary responsibility for the problem.
11. I feel less worried when I follow the advice of my child’s doctor, even if my child does not feel better right away.

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References


