

The Family APGAR and Psychosocial Problems in Children: A Report from ASPN and PROS

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BACKGROUND. Our study examined whether the lack of social support as measured by the Family APGAR was related to parents' and physicians' identification of child psychosocial problems and sociodemographic and symptom characteristics of the children screened.

METHODS. The parents of 9626 children, ages 4 to 15 years, seen for outpatient medical visits participated in this national study. Parents completed the Family APGAR and the Pediatric Symptom Checklist (PSC), a measure of psychosocial dysfunction. Physicians rated the presence of a new or recurrent psychosocial problem in the child.

RESULTS. Children from families with a lack of social support were 4.3 times as likely to receive scores indicating impairment on the PSC and 2.2 times as likely to be identified as having psychosocial problems by physician report. Families with low social support were significantly more likely to report low parental educational achievement, single parent status, and a history of mental health services for the child. Fifty percent of children from families with low social support were identified as having a psychosocial problem by either the PSC or physician rating, or both; however, only 21% of the children identified with psychosocial impairment by these two measures had scores indicating poor family functioning on the Family APGAR.

CONCLUSIONS. A lack of family social support is associated with child psychosocial dysfunction as assessed by two different measures. However, the Family APGAR was not a sensitive measure of child psychosocial problems, and thus it supplements, but does not replace, information concerning the child's overall psychosocial functioning.

KEY WORDS. Mental health; child psychology; primary health care; psychosocial support systems; social support. (*J Fam Pract* 1997; 45:54-64)

A large number of children with psychosocial problems are not recognized within primary care settings. Although epidemiological studies estimate the median prevalence of psychiatric disorders among US children at 12%,¹⁻⁴ only one half to one sixth of these children are identified by physicians, and of these, less than half receive treatment from mental health specialists.⁵⁻⁸ The Pediatric Symptom Checklist (PSC) is a brief stan-

dardized questionnaire designed to identify children with psychosocial problems in primary care settings.⁹⁻¹¹ In the search for additional factors that might assist in identification, an increasing amount of attention has been paid to the importance of low social support as a predictor of psychosocial problems in children.¹²⁻¹⁹

A family lacking social support is one whose members perceive it as incohesive and lacking the emotional and physical nurturing and resources necessary for personal growth and sustenance in the face of life's challenges.¹⁵ Because a lack of family social support has been shown to be predictive of psychosocial problems in parents and families^{20,25} as well as in children and because of the long-recognized interrelationship between parent, family, and child functioning,^{26,27} a number of authors recommend that primary care physicians routinely screen for lack of family social support.^{24,25,28} One of the instruments available for this purpose in primary care is the Family APGAR, a five-item measure

ASPN denotes Ambulatory Sentinel Practice Network; PROS, Pediatric Research in Office Setting.

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that has seen wide clinical use over the past two decades and has been shown to be valid and reliable.^{29,30} The Family APGAR was designed to assess adult satisfaction with social support in the domains of Adaptation, Partnership, Growth, Affection, and Resolve. The brevity of this instrument and the association between problems in family and child functioning has led to recommendations for using the Family APGAR in primary care settings not only as a screening instrument for low family social support, but even as a screening tool for *child* psychosocial problems.²⁸

In the only known investigation of this issue to date, Smucker and his colleagues²⁸ compared screening results of the Child Behavior Checklist (CBCL), a widely used child symptom questionnaire, with the Family APGAR in a pilot study of 152 middle-class families in a community-based, family practice training program. Although lack of family social support was significantly related to parent-identified child psychosocial problems, the degree of association was only moderate ($\kappa=.20$). However, the authors noted several limitations to their study, the most important being small sample size and low completion rate (54%). Their report suggests that social support screening does identify a unique cohort of children with psychosocial problems but leaves unanswered the question of the degree to which a lack of family social support overlaps with psychosocial problems in children.

While screening for psychosocial problems using standardized measures of child symptoms has been shown to accurately identify children who would benefit from intervention,^{9,31,32} the efficacy of screening families for a lack of social support as a method for increasing the identification of children with psychosocial problems has not been demonstrated. As part of another study on child behavior, we examined whether physicians or parents or both identified psychosocial problems among children of families with low social support as well as other correlates of low social support among families of children with and without psychosocial problems.³³

METHODS

SITE

The study was conducted in two large primary care research networks, the Pediatric Research in Office

Setting (PROS) network and the Ambulatory Sentinel Practice Network (ASPN). Established in 1986 by the American Academy of Pediatrics, PROS is the largest pediatric primary care research network, composed of 1364 practitioners from more than 355 pediatric practices in 47 states and Puerto Rico. PROS practitioners (1226 physicians, 126 nurse practitioners, and 12 physician assistants) provide care for approximately 1.5 million children in the United States. ASPN is made up of 104 practices in 36 states and 5 Canadian provinces, composed of approximately 450 clinicians who provide care for more than 500,000 adult and pediatric patients. Most ASPN clinicians are physicians (more than 90% are *family* physicians), but 15% of the network clinicians are nonphysicians (29 nurse practitioners and 33 physician assistants).

PROCEDURES

Recruiting Physicians. Clinicians who had previously completed PROS or ASPN research studies and were not participating in other major studies were recruited by network coordinators and staff. After agreeing to participate, all clinicians completed a questionnaire requesting information about their type of practice, their attitudes, and their training in relation to psychosocial problems. After completing the questionnaire, participants received training materials for the study, including a videotape and written instructions.

Data for this paper were collected from October 1994 through January 1996. All physicians participating in the first year of data collection for the ongoing study were included for this research (172 physicians, from 40 US states and 3 Canadian provinces). Prior research from both APSN and PROS confirms the comparability of patients, clinicians, and practices participating in primary care networks studies to those identified in national samples.³⁴⁻³⁷ When participating clinicians were compared with nonparticipating clinicians from one of the networks (PROS) and with a random sample of pediatricians from the American Academy of Pediatrics, no differences were found between demographic factors, practice characteristics, and attitudes on treatment of psychosocial problems.³⁸ While physicians located in the western United States seemed to include a higher percentage of eligible participants (85% vs 81%), no other potential selection bias (eg, practice popula-

tion size, percentage of managed care patients) was identified.

Study Criteria. Written consent to participate in the study was requested of parents or guardians of all children between the ages of 4 and 15 years of age who visited the clinician's office for health care during the study period. Excluded from the study were children who were seen only for procedures, whose parents were unable to complete the study materials, who had severe developmental delays or life-threatening needs requiring emergency medical attention, or who were presented for care in the presence of someone other than their parent or caregiver. Children of parents who could not read English or Spanish were also excluded. Parents completed a brief questionnaire that asked for demographic information and about how the child and family functioned. This form was placed in a sealed envelope for return to the network. Each clinician was asked to enroll 70 eligible children meeting inclusion criteria. Clinicians were blind to the results of the screening with the APGAR and other psychosocial measures.

Data Collection. The physician completed a questionnaire with information on reason for visit. If a psychosocial problem was identified, questions were asked about physician management of the emotional or behavioral problem. All study materials were mailed to the research networks for inspection, verification, and coding. Data entry was contracted out to an independent organization with double entry for reliability (Rode/PC Data Entry System, Release 2.23, DPX, Inc, 1986). All procedures and consent forms were approved by ASPN, PROS, and the universities of Pittsburgh and Arkansas institutional review boards.

ASSESSING BACKGROUND VARIABLES, PROBLEMS, AND SUPPORT

Socioeconomic and background variables were assessed using data from the parent-completed questionnaire and included such items as child's age, sex, and racial/ethnic background and parental marital status and education. Minority children included those from African American, Hispanic, Native American, or Asian American households.

Psychosocial problems were identified using a validated indicator of psychosocial dysfunction, the Pediatric Symptom Checklist (PSC), and a subjective rating of a psychosocial problem by

the physician after the index visit. The PSC is a brief, parent-completed questionnaire that has been validated for economically disadvantaged and minority as well as middle-class populations.⁴¹⁻⁴³ The PSC has been compared with the widely used CBCL. The CBCL consists of 113 items, plus an additional 20 social competence items, with norms 6 different age and gender groups. This test can be cumbersome to complete and score in busy primary care settings when large numbers of children may need to be screened routinely. In contrast, the PSC consists of 35 items that are rated as "never," "sometimes," or "often" present (scored 0, 1, and 2, respectively) and summed for a total score that indicates psychosocial dysfunction. For children aged 6 through 16, the cutoff score is 28 or higher; for younger children the cutoff score is 24.^{39, 40} High levels of agreement have been reported in direct comparison of the two measures.^{11, 39} Subjective physician ratings of a psychosocial problem were obtained from a single item on the physician-completed questionnaire that asked the physician, "Is there a new, ongoing or recurrent psychosocial problem present?" This item was similar to the one on the physician form used in the original Monroe County Study.⁴⁴

Family social support was assessed using the Family APGAR, a five-item questionnaire designed to measure adult satisfaction with family support (Appendix).^{15,29,45, 46} Each question is scored 2, 1, or 0, corresponding to answers of "almost always," "some of the time," and "hardly ever," respectively. Total scores range from 0 to 10, and while no specific criterion score has been suggested by the author, other researchers²⁸ have selected a total score of ≤ 5 to indicate impairment. This cutoff score was used in the current study. The initial validation of the Family APGAR was demonstrated through correlations with previously validated instruments of family functioning, as well as with estimates of family functioning by psychotherapists.^{16,29} Strong relationships between the Family APGAR and several different measures of adult global stress and functioning have also been reported, as well as the measure's predictive accuracy in a family practice clinic.^{21,47}

DATA ANALYSIS

In our study, between-group comparisons on categorical variables were made with the chi-squared

test. Between-group comparisons on total score variables were made with the ANOVA. Statistical significance was defined as a two-tailed α of $P < .05$.

RESULTS

As of August 1996, 10,250 children met the initial criteria for inclusion and were enrolled in the study. No differences between age and sex were found between participating and nonparticipating children. Nonparticipating children most often had a parent or caregiver who did not have enough time to complete the parent questionnaire, felt that the child was too sick and needed full attention, or felt uncomfortable with the idea of enrolling the child in a study of child

behavior. Of participating children, 484 (5%) had inadequate or missing data sufficient to preclude further analyses, resulting in a sample of 9766 children with adequate data. One hundred forty questionnaires from these children were missing more than one APGAR item and were thus dropped from the analyses to leave a final sample of 9626 children.

The final population consisted of 51% (4858) girls. Eighty-six percent (8272) were white, 6% (592) were African American, 5% (504) were Hispanic, 1% (130) were Asian American, and 1% (66) were Native American. Fourteen percent (1096) of the children were classified as being from a minority background. Twenty-six percent (2521) of the sample were from single parent (separated, divorced, or deceased

TABLE 1

Relationship Between Family APGAR Scores, Indicators and Recognition of Child Impairment, and Socioeconomic Factors

Variables	Total (N=9626) No. (row %)	Family APGAR Functional Support (>5) (n=8672) No. (row %)	Family APGAR Low Support (\leq 5) (n=954) No. (row %)	Odds Ratio
	Indicators of Child Impairment			
PSC Dysfunction†				
PSC-	8460 (88)	7858 (93)	602 (7)	
PSC+	1166 (12)	814 (70)	352 (30)*	4.3
Physician Rating of Psychosocial Problem‡				
MD-	7932 (82)	7291 (92)	641 (8)	
MD+	1694 (18)	1381 (82)	313 (18)*	2.2
Socioeconomic Factors				
Parental Education				
College	2166 (22)	2028 (94)	138 (6)	
HS Diploma	5429 (57)	4940 (91)	489 (9)	1.5
No HS Diploma	2031 (21)	1704 (84)	327 (16)*	2.7
Marital Status				
Not Single	7105 (74)	6621 (93)	484 (7)	
Single	2521 (26)	2051 (81)	470 (19)*	2.7
Race				
Nonminority	8530 (86)	7758 (91)	772 (9)	
Minority	1096 (14)	914 (83)	182 (17)*	1.9
Mental Health				
No History	9113 (95)	8283 (91)	830 (9)	
History	513 (5)	389 (76)	124 (24)*	2.7

* $P < .001$.

† PSC- = No identified psychosocial problem on the Pediatric Symptom Checklist (PSC), PSC+ = Identified psychosocial problem on the PSC.

‡ MD- = No identified psychosocial problem by physician, MD+ = Identified psychosocial problem by physician.

spouse) households. Twenty-two percent (2166) of households had at least one parent with a college degree, 57% (5429) had at least one parent with a high school diploma but no college degree, and 21% (2031) had parents who had not finished high school.

Five percent (519) of the children had been or were currently being treated by a mental health professional. Twelve percent (1166) were identified with psychosocial dysfunction by the PSC. Eighteen percent (1694) were rated as having a psychosocial problem by their physicians. Ten percent (954) of the sample were identified with low family social support by a score of 5 or less on the Family APGAR, similar to the 14% found in Smucker's work using this cutoff score.²⁸ Cronbach's α for the Family APGAR was .85, in comparison with a Cronbach's α of .94 for the PSC in the current sample.

Family Social Support and Psychosocial Problems. Table 1 shows the relationship between Family APGAR scores and child psychosocial impairment. Children who had positive results on the PSC (PSC+) were 4.3 times as likely to be identified as having low social support on the Family APGAR (APGAR+) as children who had negative results on the PSC (PSC-) ($P < .0001$). Children who were identified with psychosocial problems by physician rating (MD+) were 2.2 times as likely to have parents reporting low social support as children without physician-identified psychosocial impairment (MD-) ($P < .0001$).

Despite the strong degree of association between the Family APGAR and the PSC and physician report, the Family APGAR had a low sensitivity for child psychosocial problems regardless of the measure (PSC or physician report). The strength of the agreement between the Family APGAR and the PSC was $\kappa = .24$ (sensitivity [SN] = 30%, specificity [SP] = 93%) and between the Family APGAR and the physician recognition was $\kappa = .14$ (SN = 18%, SP = 92%). Slightly less than one third of the children (353/1170, or 30%) who were identified by the PSC were from families with low social support by APGAR score, and slightly more than one third (353/958, or 37%) of the children from families with low social support had positive findings on the PSC. There was even less of an overlap between low family social support and physician rating of a psychosocial problem. Only 18% (314/1708) of the children with physician-rated problems were from families with low social support

and only 33% (312/958) of the children from families with low social support were identified as having psychosocial problems by their physicians.

Family Social Support and Sociodemographic Variables. As shown on Table 1, parents with no high school diploma were significantly more likely to report low levels of social support (16%) than parents with at least one high school diploma (9%) or college degree (6%) ($\chi^2 = 122.5$, $df = 2$, $P < .001$). Children from single-parent households were significantly more likely to have parents who reported low levels of social support than children from two-parent households (19% vs 7%; $\chi^2 = 293.9$, $df = 1$, $P < .001$), a 2.7-fold increase in risk. Children from minority groups were significantly more likely to have parents who reported low levels of social support than children from nonminority groups (17% vs 9%), an odds ratio of 1.9 to 1. Children with a history of mental health services were 2.7 times as likely to have parents who reported low levels of social support as children without a history of mental health services (24% vs 9%; $\chi^2 = 123.4$, $P < .001$). There were no significant differences between the variables of age or sex groups on levels of family social support.

The overlap among lack of family support and psychosocial problems identified by the PSC or by physician ratings for the children is illustrated in the Figure. As the Figure shows, fully 28% (2712/9626) of the children in the sample were identified as having low family social support or being psychosocially impaired by the PSC or by physician rating and there was considerable overlap among the three measures. Although 50% (478/954) of all children from families with low social support (APGAR+) were identified as having a psychosocial problem by their parents or physicians (the lightly shaded area vs the darkly shaded area in the Figure), only 21% (478/2236) of children identified either by the PSC or by physician rating (the lightly shaded area vs the hatched areas in the Figure) were from families with low social support.

The children from families with low family social support who were not recognized by the PSC or by their physicians as having psychosocial problems (5% of all the pediatric outpatients) may be a vulnerable population. For this reason, we examined the demographic and symptom characteristics of the children in this group. As shown in Table 2, children who were not identified by the PSC or by their

physicians as having psychosocial problems but whose parents reported low family social support were significantly more likely to come from families with less education. Twelve percent of families without a high school diploma compared with 6% of families with at least one high school diploma or 4% of families with at least one college degree reported low family social support ($\chi^2=97.5$, $df=2$, $P<.001$). Similarly, single-parent families were more likely to report low social support than non-single-parent families (13% vs 4%; $\chi^2=212.5$, $df=1$, $P<.001$). Children from minority groups were more likely to come from families with low social support than nonminority children (11% vs 6%; $\chi^2=113.6$, $df=1$, $P<.001$). Children who had a history of using mental health services were more likely to come from families with low social support than children who did not have a history of mental health services (10% vs 6%; $\chi^2=87.4$, $df=1$, $P<.001$).

Finally, among families with children who had neither PSC nor physician-recognized psychosocial problems, families with low family social support had significantly higher total symptom scores on the PSC (mean=15.7) than families with adequate family social support (mean=11.5; $F=223.9$, $df=2$, $P<.0001$).

DISCUSSION

This is the first large study involving diverse populations and clinicians to examine the use of a social support measure in primary care settings. Although the measure employed in the study, the Family APGAR, was well received by parents, demonstrated an acceptable

FIGURE

Relationship between lack of family social support and child psychosocial problems

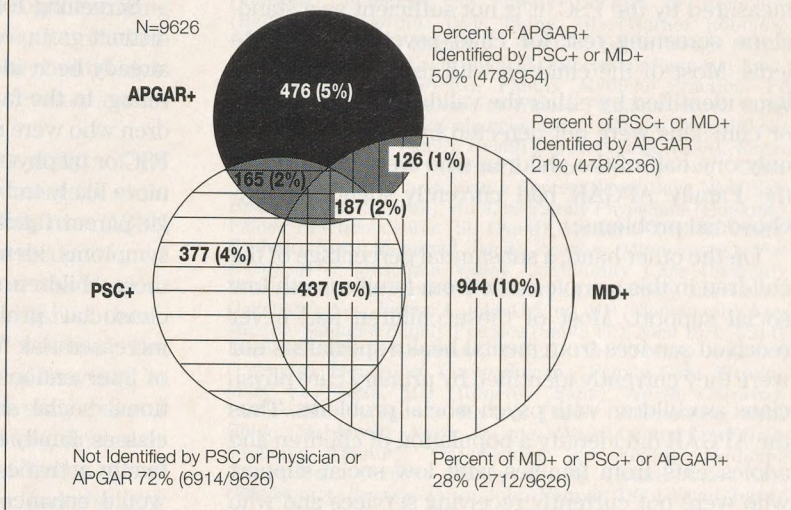


TABLE 2

Relationship Between Family APGAR Scores and Socioeconomic Factors for Children Not Recognized with Psychosocial Problems

Factors	Total (N=7388) No. (row %)	Family APGAR Functional Support (>5)	Family APGAR Low Support (≤5)
		(n=6912) No. (row %)	(n=476) No. (row %)
Parental education			
College	1769 (24)	1698 (96)	71 (4)
HS Diploma	4199 (57)	3960 (94)	239 (6)
No HS Diploma	1420 (19)	1254 (88)	166 (12)*
Marital status			
Not Single	5756 (78)	5497 (96)	259 (4)
Single	1632 (22)	1415 (87)	217 (13)*
Race			
Nonminority	6382 (86)	6020 (94)	362 (6)
Minority	1006 (14)	892 (89)	114 (11)*
Mental health			
No History	6766 (92)	6355 (94)	411 (6)
History	622 (8)	557 (90)	65 (10)*
Psychosocial problems, no. (SD)			
Total PSC score	12.1 (6.2)	11.5 (6.6)	15.7 (6.4)*

* $P < .001$.

PSC denotes Pediatric Symptom Checklist; SD, standard deviation.

degree of internal reliability, was highly associated with both clinician-identified psychosocial problems and parent-reported psychosocial dysfunction as measured by the PSC, it is not sufficient as a stand-alone screening test for child psychosocial problems. Most of the children with psychosocial problems identified by either the validated questionnaire or clinicians were not detected by the APGAR, and only one half of the children who were detected by the Family APGAR had currently identified psychosocial problems.

On the other hand, a substantial percentage of the children in this sample came from families with low social support. Most of these children had never received services from mental health specialists nor were they currently identified by primary care physicians as children with psychosocial problems. Thus the APGAR did identify a population of children and adolescents from families with low social support who were not currently receiving services and who had not been recognized by physicians or psychosocial screening tests. These children appeared to be more vulnerable in a number of ways. First, among the children who had neither PSC- nor physician-recognized psychosocial problems, the finding that children from families with low social support had significantly higher total symptom scores on the PSC than families with adequate social support documents a greater degree of psychosocial symptomatology in children with low family social support who are not currently identified with psychosocial dysfunction. Second, when combined with the observation of higher rates of risk factors in these children such as low income status, single parenthood, or minority background, it seems possible that currently unrecognized children from families with low social support may be at elevated risk for more serious psychosocial problems in the future even though they are not currently impaired or identified.

Our study confirms the work of Smucker et al, which documented a moderate degree of association between measures of low family social support and child psychosocial impairment. The association between the Family APGAR and PSC ($\kappa=.24$) was quite similar to the relationship between the Family APGAR and CBCL ($\kappa=.20$) reported in their study. Our study was able to extend these earlier findings by describing specific characteristics of children from families with low social support, examining a national sample with diverse demographics, and

exploring the extent to which they are currently unrecognized by primary care physicians and specialty mental health providers.

Screening for low family social support adds a distinct group of at-risk children to those who have already been identified by the PSC or by physician rating. In the families with low social support, children who were not identified as dysfunctional by the PSC or by physician ratings were two to three times more likely to be from low-income, minority, or single-parent families, and to have significantly more symptoms identified by the PSC, suggesting that these children are at elevated risk for future psychosocial problems. If these children are at increased risk for psychosocial problems, the types of interventions that could be considered are additional social support services, such as parenting classes, family therapy interventions, or referrals to family activities in the schools or community that would enhance physical and emotional growth or maturation.

The availability of an appropriate and feasible instrument is a necessary but not sufficient criterion for recommending the use of social support screening of children and adolescents in routine primary care practice. Also essential are information on appropriate and efficacious interventions for low social support identified by primary care physicians, evidence that prognosis changes as a result of early screening and intervention, and an adequate level of morbidity related to the condition to justify such efforts. To date, we are aware of no such studies of children in primary care settings.

Our study has at least one limitation that may affect its conclusions. The high degree of association between the Family APGAR and child psychosocial dysfunction as measured by the PSC may be somewhat artificial since both measures were completed by the same respondent. That the Family APGAR scores were highly, although somewhat less strongly, associated with the physicians' rating of the presence of a psychosocial problem suggests, however, that child and family dysfunction are related, independent of respondent. Another limitation of the results is that the Family APGAR evaluates the level of social support only within the family. It is possible that many children with low APGAR scores may be getting adequate social support from extended family, neighbors, or close friends. Or, that children with psychosocial problems from families with adequate

family social support may not be receiving adequate support from school- or community-based resources. While screening for low family social support is not a successful method for identifying children with psychosocial problems, the relationship between poor social support and child dysfunction may be higher with an evaluation of extended support networks.

While the focus of our study is the utility of the Family APGAR as a screening instrument for child psychosocial problems, in another study from ASPN and PROS, the marked growth in the recognition of psychosocial problems by physicians was demonstrated (Kelleher et al, 1997. Unpublished data). Using a subjective, clinical standard based on the question "Regardless of the purpose of this visit, in your opinion, does this patient currently have a behavioral, emotional, or school problem, treated or untreated?" primary care physicians found a prevalence rate of 18% (somewhat higher than the 12% positive rate for psychosocial dysfunction identified by the PSC, which is based on parental report) in comparison with a rate of 7% found in the Monroe County Study in 1979.³⁰ This dramatic change in physician-identified problems suggests that psychosocial problems are increasingly dominating primary care practice. The source of the increase in these problems can be attributed to demographic shifts within the population.

The Family APGAR did not perform well as a screening test for child psychosocial problems, and is probably not be the best instrument for routine use in clinical practice to assess a child's problems stemming from family dysfunction. Other measures like the PSC and CBCL are better suited for screening children. Nonetheless, family physicians and pediatricians will find the Family APGAR an easy-to-use instrument that can assess and facilitate discussion of social support issues with high-risk families. Longitudinal studies following families with low family social support and monitoring interventions that link child and family systems may facilitate understanding of the effects of social support within the family on child functioning.

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ASPN Participating Practices

Arkansas: Batesville Family Practice Center (Batesville);
California: Foothills Family Medical Group (Auburn), Loma

Linda Family Medical Group (Loma Linda); *Colorado:* Renate Justin: MD (Fort Collins), Harrington, Knaus, & Spence, P.C. (Carbondale), La Mariposa Clinic (Denver), Colorado Springs Health Partners (Monument), Penrose Family Health Center (Penrose); *Florida:* The Family Doctors of Belleview (Belleview); *Georgia:* Titus Taube, MD (Warner Robbins); *Louisiana:* Family Medicine Center of Baton Rouge (Baton Rouge); *Minnesota:* Eagle Medical (Excelsior), Ramsey Clinic - Maplewood (Maplewood), Family Medical Practice, PA (Willman), Family Medicine of Winona (Winona), River Valley Clinic (Hastings), Family Medicine Clinic of Lake Crystal (Lake Crystal), Gateway Family Health Clinic (Moose Lake), Eagan Medical Associates (Eagan), Fairview Uptown Clinic (Minneapolis), Bay Area Health Center (Silver Bay), West Side Health Center (St. Paul), Hopkins Family Physicians (Hopkins), Family Practice Center (St. Cloud), Mt. Royal Medical Center (Duluth), North Memorial Family Practice (Minneapolis); *New Hampshire:* Mascota Valley Community Care (Enfield), Hillsboro Medical Services (Hillsboro), Community Care Center (Lebanon); *New Jersey:* A. John Orzano, MD (Flemington); *New Mexico:* Santa Fe Family Practice (Santa Fe); *New York:* Raj B. Kachoria, MD (Macedon), Canal Park Family Practice (Palmyra), Montefiore Comprehensive Family Care (Bronx), Mary Kay Ness, MD (Honeoye Falls); *North Carolina:* Bakersville Community Medical Clinic (Bakersville), Nalle Clinic (Matthews); *North Dakota:* Minot Center for Family Medicine (Minot); *Ohio:* Center for Family Medicine (Cleveland); *Oregon:* Dunes Family Health Care, Inc. (Reedsport); *Pennsylvania:* John Farmer, DO (Waynesboro), Good Samaritan Family Practice (Lebanon); *Tennessee:* Michael H. Hartsell, MD (Greeneville), Mountain City Extended Hours Clinic (Mountain City); *Texas:* Van Horn Rural Health Clinic (Van Horn); *Virginia:* June Tunstall, MD (Surry), Tappahannock Family Practice (Tappahannock); *West Virginia:* North Fayette Family Health Center (Hico); *Wisconsin:* Kronenwetter Clinic (Mosinee), Poynette Family Practice Center (Poynette), Medical Associates (Baraboo), Plymouth Family Physicians (Plymouth), Monroe Clinic (Monroe), UCC/Mona Grove (Madison), Family Doctors-Black Creek (Black Creek), Southwestern Family Practice (South Milwaukee), Family Health Plan (Elm Grove), LaSalle Clinic (Appleton), Marshfield Clinic—Merrill Center (Merrill), Tigerton Clinic (Tigerton), Dean Medical (Oregon), Physicians Plus/Fitchburg (Fitchburg), Family Health Plan (Glendale), Franciscan Skemp Clinic (Tomah), Galesville Medical Center (Galesville), Medical Associates (Beaver Dam), LaSalle Clinic (Waupaca); *Alberta:* Foothills Family Medicine Centre (Black Diamond); *New Brunswick:* David Ross, MD (Moncton); *Newfoundland:* Newhook Community Health Center (Whitbourne), Ross Thomas, MD (Sackville); *Ontario:* Steve Nantes, MD (Kitchener), Metcalfe & Dowdell (Kitchener), Bryan Alton: MD (Hamilton).

PROS Participating Practices

The pediatric practices or individual practitioners who completed this study are listed here by AAP Chapter: *Alabama:* Drs. Heilpern & Reynolds, PC (Birmingham); *Alaska:* Anchorage Neighborhood Health Center (Anchorage); *Arizona:* Mesa Pediatrics Professional Association (Mesa), Pediatric Ambulatory Care Clinic (Phoenix), Orange Grove Pediatrics (Tucson); *California:* Anita Tolentino-Macaraeg, MD (Hollister), Palo Alto Medical Foundation (Los Altos); *Colorado:* Arvada Pediatric Associates (Arvada), Family Health Center (Denver), Gino Figlio, MD (Lamar); *Connecticut:* Gerald Jensen, MD (Bristol), Barry Keller, MD (Danbury), Community Health Services (Hartford), St. Francis Pediatric Primary Care Center (Hartford); *Florida:* Atlantic Coast Pediatrics (Merritt Island), Children's Clinic (Tallahassee); *Georgia:* The Pediatric Center (Stone Mountain); *Hawaii:* Melinda Ashton, MD (Honolulu), Straub Clinic - Pediatrics (Aiea); *Iowa:* Newborn & Pediatric Specialist, PC (Des Moines), David Kelly, MD (Marshalltown); *Illinois:* SIU Physicians & Surgeons (Auburn), Emalee Flaherty, MD (Chicago), Southwest Pediatrics (Palos Park); *Indiana:* Bloomington Pediatric Association (Bloomington), Community Health Access Program

(Bloomington), Georgetown Medical Care (Indianapolis), Jeffersonville Pediatrics (Jeffersonville), Pediatric Advocates (Peru); *Kansas*: Bethel Pediatrics (Newton); *Kentucky*: Tri-State Pediatrics, PSC (Ashland); *Louisiana*: Children's Clinic of Southwest LA (Lake Charles); *Maine*: John Salvato, MD (Waterville), Intermed Pediatrics (Yarmouth); *Maryland*: O'Donovan & Ahluwalia, MD, PA (Baltimore), Children's Medical Group (Cumberland), Shore Pediatrics (Easton), Clinical Associates Pediatrics (Towson/Pikesville); *Massachusetts*: Holyoke Pediatric Associates (Holyoke), Medical Associates (Leominster), The Fallon Clinic (Worcester); *Michigan*: University Pediatricians, PC (Detroit), Pediatric Associates of Farmington (Farmington), Mott Children's Health Center (Flint), H.M. Hildebrandt, MD (Ypsilanti); *Montana*: Stevensville Pediatrics (Stevensville); *Nebraska*: Southwest Pediatrics (Omaha); *Nevada*: Capital Medical Associates (Carson City), Physician's Center West (Fallon); *New Hampshire*: Exeter Pediatric Associates (Exeter); *New Jersey*: Delaware Valley Pediatric Association (Lawrenceville); *New Mexico*: Albuquerque Pediatric Association (Albuquerque); *New York 1*: Pediatric Associates (Camillus), Elmwood Pediatric Group (Rochester), Park Medical Group (Rochester), Edward D. Lewis, MD (Rochester), Panorama Pediatric Group (Rochester), Amherst Pediatric Associates (Williamsville); *New York 2*: Centro Medico (Jackson Heights); *New York 3*: Pediatric Office at Roosevelt Island (New York); *North Carolina*: Triangle Pediatric Center (Cary), Goldsboro Pediatrics (Goldsboro), Medical Association of Surry (Mount Airy), Peace Haven Family Health Center (Winston-Salem); *North Dakota*: MeritCare Medical Group-Pediatrics (Fargo), Grand Forks Clinic (Grand Forks), Dakota Clinic (Jamestown), Medical Arts Clinic (Minot); *Ohio*: Oxford Pediatrics & Adolescents (Oxford), Pediatrics (Portsmouth), St. Elizabeth Health Center (Youngstown); *Oklahoma*: Eastern Oklahoma Medical Plaza (Poteau), Shawnee Medical Center Clinic (Shawnee), Pediatric & Adolescent Care (Tulsa); *Pennsylvania*: Pediatric Practice of Northeastern (Honesdale), Schuylkill Pediatrics (Pottsville), Cevallos and Moise Pediatric Associates, PC (Quakertown), Pennridge Pediatric Associates (Sellersville); Puerto Rico: Ethel Lamela, MD (Isabela), Primary Care Pediatric Clinic Catano (Rio Piedras); *Rhode Island*: Marvin Wasser, MD (Cranston); *South Carolina*: Carolina Primary Care (Columbia); *Tennessee*: Johnson City Pediatrics (Johnson City); *Texas*: The Pediatric Clinic (Greenville), Department of Pediatrics (Lackland Air Force Base), MD Pediatric Associates (Lewisville), Winnsboro Pediatrics (Winnsboro); *Utah*: Gordon Glade, MD (American Fork), Mountain View Pediatrics (Sandy), Salt Lake Clinic (Sandy), Granger Medical Center (West Valley City); *Vermont*: CHP Brattleboro Pediatrics (Brattleboro), University Pediatrics (Burlington), Rebecca Collman, MD (Colchester), CHP Essex Pediatrics (Essex Junction), Mousetrapp Pediatrics (Milton), CHP Timber Lane Pediatrics (South Burlington), Joseph Hagan, Jr., MD (South Burlington), Practitioners of Pediatric Medicine (South Burlington), University Pediatrics (Williston); *Virginia*: Drs Casey, Goldman, Lischwe, Garrett & Kim (Arlington), James River Pediatrics (Midlothian), Pediatric Faculty Practice Office (Richmond); *Washington*: Jemima Tso, MD (Auburn), Redmond Pediatrics (Redmond), Rockwood Clinic (Spokane); *West Virginia*: Tess Alejo (Martinsburg), Medical & Pediatric Associates (Parkersburg), Grant Memorial Pediatrics (Petersburg); *Wisconsin*: Beloit Clinic SC (Beloit), Middleton Pediatric Clinic (Middleton), Waukesha Pediatric Associates (Waukesha), Gundersen Clinic-Whitehall (Whitehall); *Wyoming*: Cheyenne Children's Clinic (Cheyenne), Jackson Pediatrics (Jackson).

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APPENDIX

The Family APGAR Questionnaire for Measuring Adult Satisfaction with Family Support

- Adaptation How resources are shared; or the member's satisfaction with the assistance received when family resources are needed.
- I am satisfied that I can turn to my family for help when something is troubling me.
- Almost always () Some of the time () Hardly ever ()
- Partnership How decisions are shared; or the member's satisfaction with mutuality in family communication and problem-solving.
- I am satisfied with the way my family talks over things with me and shares problems with me.
- Almost always () Some of the time () Hardly ever ()
- Growth How nurturing is shared; or the member's satisfaction with the freedom available within the family to change roles and attain physical and emotional growth or maturation.
- I am satisfied that my family accepts and supports my wishes to take on new activities or directions.
- Almost always () Some of the time () Hardly ever ()
- Affection How emotional experiences are shared; or the member's satisfaction with the intimacy and emotional interaction within the family.
- I am satisfied with the way my family expresses affection and responds to my emotions, such as anger, sorrow, or love.
- Almost always () Some of the time () Hardly ever ()
- Resolve How time is shared; or the member's satisfaction with the time commitment that has been made to the family by its members.
- I am satisfied with the way my family and I share time together.
- Almost always () Some of the time () Hardly ever ()