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## Parenting Young Children (PARYC): Validation of a Self-Report Parenting Measure

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### Abstract

The measurement of parenting behaviors is important to the field of psychology and the goal of remediating problematic parenting as a means of reducing child problem behaviors. The Parenting Young Children (PARYC) is a self-report measure designed to address parenting behaviors relevant for the caregivers of young children, and was assessed in sample of 579 high risk families. The measure assesses the frequency of several parenting behaviors, the perception of the parenting behaviors as problematic, and the degree to which the caregiver would like to make changes in specific parenting skills. An examination of the validity of the parenting behavior items revealed three parenting scales: (1) Supporting Positive Behavior (2) Setting Limits, and (3) Proactive Parenting. Confirmatory factor analysis results corroborate the findings of the exploratory factor analysis, supporting the measurement structure of these parenting scales. Tests of convergent validity indicate the PARYC scale is a suitable measure of parenting behaviors. In addition, the self-perception of parenting behaviors as problematic predicted concurrent levels of service utilization while controlling for simultaneous child behavior problems.

### Keywords

Parenting behavior assessment; Factor structure; Validity; Parenting Young Children; Service utilization

### Introduction

The prevention and intervention of behavioral problems in children has taken a front seat for research due to the deleterious short and long-term outcomes associated with antisocial

behaviors. Research uncovering the high comorbidity rates of antisocial behaviors among other behavioral disorders (Hinshaw et al. 1993), co-occurring behavioral problems (Snyder et al. 2004; White et al. 1994), and the influence of peers (Dishion et al. 1999; Snyder et al. 2004, 2005) has increased knowledge about the formation and severity of problematic behaviors. Analyzing the developmental trajectories of antisocial behaviors has indicated that the earlier the problems begin, the more deleterious the potential outcome for the individual and society at large (Loeber and Stouthamer-Loeber 1998; Shaw et al. 2000). The collective knowledge gained by behavioral problems research suggests intervention and prevention efforts may be most successful when targeting children in early childhood before entering into the school environment (Dishion and Patterson 1992). Naturally, the family has become a primary agent for attempting to reduce the burden of antisocial behaviors, with a principal focus on improving parenting strategies.

In meeting with the arduous goal of remediation, The Family Check-Up (FCU; see Fig. 1) was developed as a family centered intervention originally delivered within the school system (Dishion and Kavanagh 2003) to reduce behavioral concerns relevant to adolescents (Connell et al. 2007). More recently, the Early Steps Multisite Study has moved the FCU into the home context at three sites across the United States as a means of preventing problematic behaviors in young children. Success in improving parent management skills, maternal depression, and reducing growth in child externalizing and internalizing problem behaviors has been reported across this multicultural and contextually diverse sample (Dishion et al. 2008; Shaw et al. 2009).

Within this project, the FCU models a health maintenance framework by relying on thorough assessments of the family context and utilizing motivational interviewing strategies to help families move toward change behaviors (Dishion and Kavanagh 2003; Gill et al. 2008). The FCU is modeled after the Drinker's Check-Up (Miller and Rollnick 2002), wherein multiple data sources relevant to the functioning and harmony of the family (e.g., maternal depression, child behaviors, family management skills) are collected using paper-and-pencil questionnaires, interviews, and videotaped observations. After the completion of the interview and assessment, the family is provided with feedback regarding the functioning of their family. The feedback session is structured based on the information obtained during the interview and assessment portion of the FCU, with careful attention paid to the strengths of the family and areas where the family could benefit from making changes.

The feedback portion of the FCU is designed to be motivational and present the family with empirical evidence surrounding the current performance of the family and potential future outcomes which will likely result if current behavioral patterns persist. Ideally, families for whom the interview and assessment procedures suggest change would likely enhance their future prognosis and success would be motivated to either seek professional support or make changes on their own based on the information presented during the feedback session. A menu of options for families experiencing difficulties is presented at the conclusion of the feedback session. Although the menu is tailored to the needs of the family, a typical menu may include referrals for specific problems (e.g., developmental delays, maternal depression), age-appropriate brochures addressing parenting issues (e.g., limit setting), and/or directly providing parent management services to the family by research project personnel.

If families so choose, research staff designated as parent consultants (therapists who also provide the families with detailed feedback) are trained and ready to provide the family with important parent management skills. In order to teach parenting skills that enhance family management, the Everyday Parenting Curriculum, an adapted version of Parent

Management Training-Oregon (Patterson 1982), is employed. Parent Management Training has repeatedly been shown to reduce problematic behaviors in children (Kazdin 1997) and has long been established as an empirically validated treatment for disruptive behaviors with children (Brestan and Eyberg 1998). Typically, Parent Management Training involves 1-h sessions of skill building and role-playing important parenting behaviors over approximately 10–17 meetings (Eyberg et al. 2008). In addition to serving as the primary source of information for the feedback session, the interview and assessment portion of the FCU also serve the function of providing the parent consultant with individualized information regarding the specific parenting skill areas where improvement could benefit family functioning. Such an assessment process assists the interventionist in tailoring the parent management strategy to the needs of the family. Thus, the feedback session reduces the intervention time and increases the participant's investment in the intervention by keeping the participant engaged in relevant and useful skill building behaviors.

As the assessment segment of the FCU plays such a vital role in not only the research aspect of the Early Steps Multisite Study, but also to the actual feedback and treatment provided to families in need, great care was taken to choose validated measures covering important aspects of child and parent behaviors (Gill et al. 2008). Because parent skills training is a primary focus of the intervention, accessing high-quality indices of how parents are managing in this role was of utmost concern. A gap in the assessment literature was discovered which seemed imperative to fill for the success of both the intervention and the families strengthened by this work.

### Assessing Parenting

An exhaustive list of the available parenting measures which assess an array of parenting behaviors, styles and perceptions is beyond the purpose of this report, but the following provides a sample of accessible parenting assessments. For example, self-report measures assessing the quality of the relationship between the parent and the child based on principles of attachment theory, such as the Adult Child Relationship Scale (ACRS; Pianta and Nimetz 1991) are available and easily administered. Other relationship measures are also accessible which tap into the parents' perceived efficacy and competence in their parenting role (Parenting Sense of Competence Scale, PSOC; Johnston and Mash 1989). In addition, self-report assessments of parenting styles specifically focused on mal-adaptive parenting strategies that have been related to disruptive behaviors in young children (The Parenting Scale; Arnold et al. 1993) are also available.

All three of these self-report measurement tools are extremely important for assessing the quality of parenting behaviors and can be valuable tools for capturing the current functioning and potential areas of improvement for families. However, certain areas of parental functioning are not addressed with these self-report measures, and these parenting domains (e.g., positive parenting) are vital to properly assess and facilitate improvements through implementation of the FCU. For example, although the measure developed and validated by Arnold et al. (1993) is well suited to measure specific parenting practices deemed as dysfunctional discipline strategies by conventional scientific standards, this measure does not assess the awareness the parent may or may not have of these behaviors as problematic for the relationship between the parent and the child. Nor does this measure evaluate positive parenting strategies or goals the caregivers may have for improving their parenting behaviors. Whereas the assessment tool developed and validated by Johnston and Mash (1989) is excellent for measuring perceptions of competence and efficacy as a parent, little information is provided regarding the specific parenting behaviors the caregiver uses when responding to acceptable or problematic behaviors exhibited by the child. The same information is also lacking in the Pianta and Nimetz (1991) instrument, which is excellent for evaluating adult perceptions of the relationship between themselves and the child based

primarily on the behavioral responses engaged in by the child. In addition, none of the three measures described addresses the desire of the parent to make changes in their parenting behaviors, a cornerstone of the theory guiding the FCU and of particular relevance when working with parents to modify their current, well-practiced parenting behaviors.

Feedback provided to the parents during the FCU process is designed not only to present areas of concern and strength for specific parenting strategies, but also to assess one's motivation for change concerning their current parenting practices. As noted by Miller and Rollnick (2002), a primary method by which to enhance motivation to change is to discuss discrepancies between what one views as a problematic behavioral strategy and their actual behavior. Given the emphasis on motivational interviewing in the FCU, measuring the specific behaviors, the problematic perceptions of these behaviors, and the desire to change such behaviors were deemed as necessary areas for assessment. In fact, the caregiver's perception of their parenting behavior as problematic has not received much empirical attention, nor does knowledge exist about important characteristics of introspective parents.

As previously mentioned, the assessment portion of the FCU also serves as a guide for tailoring parenting services, after the feedback session, for those families in need and willing to learn more adaptive parenting strategies. Although proactive parenting strategies, wherein caregivers preemptively anticipate problem behaviors and work to structure up situations to avoid problematic behaviors, have been related to reductions in child conduct problems (Gardner et al. 2003), measurement of such strategies has primarily relied on observational data (Gardner et al. 1999). As an important strength for the parenting process and a primary focus of the Everyday Parenting Curriculum, it is helpful to measure proactive parenting strategies in a simple and cost effective manner, a goal not typically reached by relying on valuable yet costly and time-consuming observational techniques.

To summarize, a brief and cost-effective measure of parenting behaviors that simultaneously addresses problematic perceptions of parenting behaviors and the desire for change was deemed a needed and clinically relevant undertaking. In response to these gaps in the assessment of caregiving practices, the Parenting Young Children Scale (PARYC) was developed, which addresses three areas of parenting behaviors that have been theoretically linked to effective outcomes for young children: (1) Supporting Positive Behavior, (2) Setting Limits, and (3) Proactive Parenting. The purpose of the analyses that follow was to examine the psychometric properties and structure of the brief self-report questionnaire. It was hypothesized that an exploratory factor analysis and a confirmatory factor analysis would support the existence of these three parenting domains. The convergent validity of this tool was assessed by collecting other measures of parenting behaviors at the same point in time; it was hypothesized that these measures would correlate with the PARYC. The contribution of parenting behaviors, perceptions of parenting as problematic, and the desire to make changes to the recent history of service utilization was then tested in the context of child behavioral problems. Given that many barriers to treatment recognized by Spoth and Redmond (1995) are minimized in this research project (e.g., flexible hours, transportation, at home sessions), it was hypothesized that parenting behaviors, perceptions of parenting as problematic, the desire to make changes in parenting behaviors, and child behavior problems would all significantly predict the concurrent service utilization practices of the family.

## Method

### Participants

Participants for this study included 579 primary caregivers (mostly biological mothers), alternative caregivers when available (other adults designated by the primary caregiver as being someone whom also cares for the child, e.g., father figures, grandparents) and their

children initially recruited when the target child was 2 years old from WIC (Women Infants and Children) programs in Pittsburgh, PA, Eugene, OR, and rural inhabitants near Charlottesville, VA. Inclusion into the Early Steps Multisite Study ( $n = 731$ ) required that the family was considered high risk for future behavior problems on socioeconomic, family, or child risk factors (see Dishion et al. 2008 for complete details). The PARYC was implemented during the age 5 assessment procedure, hence the reduced sample size for the analyses that follow. The sample administered the PARYC did not differ from those who were not administered this measure in terms of treatment group membership, gender, service utilization, or the parenting variables used in these analyses. Of the sample who completed the PARYC, roughly half of the target children were girls ( $n = 285$ ; 49.2%) and half were boys ( $n = 291$ ; 50.3%). Primary caregivers reported on the race of the target child, revealing a diverse sample of children including 49.9% White, 28.2% Black, 13.3% Biracial, 1.6% Native American, .5% Unknown, .2% Native Hawaiian or Pacific Islander, and 6.4% selecting the race option of Other. The mean age for the children at the time of the assessment was 5 years and 5 months.

## Measures

Every year since recruitment to the study (beginning at age 2), home visits for each family were comprised of a variety of paper and pencil assessments, assessor impressions, interviews, and videotaped observations. All of the measures used in this study were collected at the annual home visits.

**Parenting Young Children (PARYC)**—At the age 5 assessment, the PARYC was administered, which is a brief self-report measure designed to assess the frequency in which parents engaged in three important types of parenting behaviors over the past month. This measure consists of 21 questions concerning the areas of Supporting Positive Behavior (e.g., “Notice and praise your child’s good behavior?”), Setting Limits (e.g., “Make sure your child followed the rules you set all or most of the time?”), and Proactive Parenting (e.g., “Prepare your child for a challenging situation.”). For each question the caregiver was asked to rate how often they were able to engage in each parenting strategy on a scale from 1 (not at all) to 7 (most of the time) during the last month. After each question, the caregiver also reported whether or not they felt performing each of these parenting duties was problematic (Yes/No). At the conclusion of each of the three parenting areas (Supporting Positive Behavior, Setting Limits, and Proactive Parenting) parents were then asked to rate whether or not they would like to do things differently in the distinct area of parenting on a 7-point Likert scale (1 = “really want to change,” to 7 = “fine as is”). The items assessing the caregiver’s desire to change were reverse-scored in the analyses that follow.

**The Parenting Scale**—The Parenting Scale (Arnold et al. 1993) consists of 30 questions asking caregivers to use a 7 point Likert scale to describe their parenting style in response to child and parenting behaviors and emotions. For example, with the item “When my child misbehaves,” the caregiver was asked to pick the best descriptor for their response on the 7 point scale where 1 means “I do something right away” and 7 indicates “I do something about it later.” The alpha reliability of the items included in the Laxness parenting style was .85, and .77 for the Overreactivity style of parenting.

**Adult Child Relationship Scale (ACRS)**—The Adult Child Relationship Scale (Pianta and Nimetz 1991) was collected during the assessment. This brief, 15 item scale asks the caregiver to rate on 5 point scale from “definitely not” to “definitely” how well a variety of statements describe the relationship they have with their child. An example item used in the positive relationship score asked the parents how well “This child likes telling me about him/

herself' describes the caregiver-child relationship. Alpha reliability for the items included in the Conflict Relationship Score was .87 and .73 for the Positive Relationship Score.

**Parenting Sense of Competence Scale (PSOC)**—The PSOC (Johnston and Mash 1989) is a 19 item self report measure which asks the parent to rate how strongly they agree or disagree with several statements concerning their attitude toward parenting on a 6 point Likert scale (1 = strongly agree to 6 = strongly disagree). This measure contains 3 parenting scales, Parent Self-efficacy (e.g., “Even though being a parent could be rewarding, I am frustrated while my child is at his/her present age.”), Parent Satisfaction (e.g., “I would make a good role model for new parents who needed to learn what it takes to be a good parent.”), and Parent Competence (an overall score using all of the items from the measure). Alpha reliability for the items included in the Parent Self-efficacy scale was .71, .82 for the Parent Satisfaction scale, and the overall alpha reliability for the entire measure (an indicator of Parent Competence) was .82.

**Child Problem Behaviors**—Both primary and designated alternate caregivers (when available) reported on the exhibition of behavior problems using the Eyberg Child Behavior Inventory (ECBI; Burns and Patterson 2001; Robinson et al. 1980) and the Child Behavior Checklist (CBCL; Achenbach and Edelbrock 1991) at age 5. The ECBI consists of eighteen statements regarding a child's behavior and asks the parent to rate how often these behaviors occur with the target child using a 7 point Likert scale (1 = “never” and 7 = “always”) to derive a Total Intensity Score. For each statement, parents were also asked to choose whether or not they perceive each behavior to be a problem. Similarly, the Child Behavior Checklist is a questionnaire completed by caregivers wherein they are asked to rate the validity of several statements about their child's engagement in specific behaviors on a 3 point Likert scale (0 = “not true,” 1 = “somewhat or sometimes true,” 2 = “very true or often true”). A construct for age 5 child behavior problems was developed by combining the Aggressive and Rule-Breaking Behavior scores from the CBCL with the Conduct Disorder and Oppositional Disorder scores from the ECBI. Alpha reliability for the latent construct of child behavior problems at age 5 was adequate at .73.

**Service Utilization**—During the age 5 assessment, primary caregivers also responded to several questions regarding the family's utilization of services (Service Provider Questionnaire; Child and Family Center 2003). During the interview, the primary caregiver was asked questions regarding the utilization of services among members of the home over the past year. A score of family service utilization was calculated as a sum score of the number of community services provided to immediate family members (target child, primary caregiver, alternative caregiver, or target child's sibling). Community services addressed in the questionnaire included mental health services, faith-based assistance, help from other parents or relatives, and/or from agencies serving children (examples provided include counseling, parent support groups, and developmental disabilities).

## Results

### Construct Validity

A primary goal of the analyses that follow was to establish the construct validity of the PARYC. As previously noted, the PARYC was designed with three major parenting behaviors in mind; Supporting Positive Behavior, Setting Limits, and Proactive Parenting. Table 1 provides the means and standard deviations of the items included in the PARYC as the items are theoretically separated. The correlations among the items for the full sample are included in Table 2. With few exceptions, all items were adequately correlated, and all

items included under the same theoretical heading were significantly correlated with each other.

In order to examine the structure of these three parenting domains within this self-report instrument, the full sample including all 579 children was randomly divided into approximately two halves using the random sample option of SPSS 15 (SPSS 2007). This strategy provided one dataset to conduct an Exploratory Factor Analysis ( $n = 269$ ) and a second dataset to complete a Confirmatory Factor Analysis ( $n = 310$ ) based on the EFA results.

A principal components factor analysis was conducted on the subsample randomly assigned to the Exploratory Factor Analysis dataset. All of the items from the PARYC scale were included in the analyses, and no constraints were imposed on the number of factors to be extracted. A varimax rotation was used to maximize the distinction between the factors, resulting in a four factor solution that accounted for 57.16% of the variance within the scale. The means, standard deviations, and factor loadings for each scale are presented in Table 3. A clear picture emerged from the results of the exploratory factor analysis which fit with the theoretical factors used to devise the measurement tool. The analysis suggested a four factor solution, with all loadings well above the suggested .32 cutoff for interpretation (the lowest being .53; Tabachnick and Fidell 2001). As can be seen in Table 3, all theoretically determined Supporting Positive Behavior and Proactive Parenting items significantly loaded onto the expected factors. With the exception of two items, “Set rules on your child’s problem behavior that you were willing/able to enforce?” and “Tell your child how you expected him or her to behave?” all of the items created to measure the parenting behavior of Setting Limits loaded onto a single construct. The two items that did not load onto the Setting Limits factor were the only two items included on the fourth factor, and thus will not be included in the analyses that follow.

A confirmatory factor analyses was then run on the CFA dataset based on the results obtained from the EFA. The fit indices for each construct are available in Table 4, noting first the fit without allowing for correlations among the error variances, and then the improved fit when error variances for items that were highly correlated at the bivariate level were allowed to covary in the CFA models. Cronbach’s alpha reliability for the Supporting Positive Behavior items was good at .78. The model fit the data well when the error variances between the items directly indicating rewarding behaviors were correlated (items 4 and 7). The model resulted in a good fit to the data, where  $X^2(13) = 30.472$ ,  $p = .004$ , CFI = .966, TLI = .944, RMSEA = .066, and SRMR = .035. Significant loadings were obtained with all indicators for the construct (all loadings .39). Similarly, Cronbach’s alpha reliability for the five Setting Limits items was good at .79. The model fit the data well, where  $X^2(5) = 16.573$ ,  $p = .005$ , CFI = .972, TLI = .945, RMSEA = .087, and SRMR = .029. Significant loadings were obtained with all indicators for the construct (all loadings .62). For the Proactive Parenting construct, the Cronbach’s alpha reliability for the items was excellent at .85. The best model was obtained when the error variances of the two indicators with the highest bivariate correlations (items 6 and 7, wherein the parent provides direct guidance to the child) were allowed to covary. The model fit the data well, where  $X^2(13) = 28.748$ ,  $p = .007$ , CFI = .979, TLI = .966, RMSEA = .063, and SRMR = .036. Significant loadings were obtained with all indicators for the construct (all loadings .54). All three constructs were significantly and positively correlated with one another, as can be seen in Fig. 2.

### Convergent Validity

Based on the similar results provided by the EFA and CFA analyses of the PARYC, the two separate datasets were then merged into one complete sample ( $n = 579$ ). Composite intensity

scores for Supporting Positive Behavior, Setting Limits, and Proactive Parenting were computed by calculating the mean of the items for each construct (the two items originally developed for the Setting Limits construct that did not significantly load onto this construct were not used). Table 5 contains the correlations of the intensity scores from the PARYC scales and established scales from The Parenting Scale (Arnold et al. 1993), the ACRS (Pianta and Nimetz 1991), the PSOC (Johnston and Mash 1989), the ECBI (Burns and Patterson 2001), and the CBCL (Achenbach and Edelbrock 1991).

As expected, the intensity scores of the PARYC measure were significantly correlated with other parenting measures in the expected direction. Specifically, the PARYC was positively correlated with the PSOC Competency, Self-efficacy, and Parent Satisfaction scales, as well as the Positive Relationship score from the ACRS. This suggests that higher ratings of parenting competency, self-efficacy, satisfaction ratings, and positivity in the parent-child relationship were associated with higher ratings of self-reported skillful parenting practices of Supporting Positive Behavior, Setting Limits, and Proactive Parenting. The three PARYC scales were negatively correlated with the Conflict Relationship Score from the ACRS, the Laxness and Overreactivity Scores from the Parenting Scale, the Total Intensity and Total Problem Scores from the Eyberg, and the Total Problems Score from the CBCL. These data suggest that higher ratings of the frequency of engaging in skillful parenting practices related to Supporting Positive Behavior, Setting Limits, and Proactive Parenting were related to lower levels of maladaptive parenting strategies and child problem behaviors. Interestingly, primary caregiver reports of their own engagement in positive parenting strategies were negatively correlated with some, but not all of the alternative caregiver reports of the child's problem behaviors. Significant negative correlations were found between alternative caregiver reports of the child engaging in problem behaviors via the Eyberg and CBCL scores and primary caregiver reports of engagement in Supporting Positive Behavior, Setting Limits, and Proactive Parenting. In addition, alternative caregivers' perceptions of the child's behavior as problematic and the primary caregiver's engagement in Setting Limits were significantly and negatively correlated. However, primary caregiver reports of engaging in Proactive Parenting behaviors was not significantly correlated with any report of child behavior provided by the alternative caregiver, or the primary caregivers' reports of engagement in Supporting Positive Behaviors or the alternative caregiver's perception of the child's behavior as problematic.

### **Predicting Utilization of Services**

The next step was to examine the usefulness of the PARYC in predicting the utilization of services as a means of assessing engagement in treatment services available to the general population. Families in both the treatment and control group were asked to complete the service utilization questionnaire as an indicator of the family's tendency to elicit assistance from common community service agencies. Three separate latent constructs were devised consisting of the three separate principles measured by the PARYC, including parenting behavior problems, the perception of parenting as problematic, and the desire to make changes in parenting. Mean scores were calculated for items loading onto the three parenting behavior scales of Supporting Positive Behavior, Setting Limits, and Proactive Parenting and were used as indicators of a latent construct of parenting behavior problems. In addition to requesting information about the frequency with which certain parenting behaviors occur, the PARYC also assessed if the caregiver finds each item to be problematic. Sum scores were computed within each subscale to capture the caregivers' perception of their parenting behavior as problematic. Lastly, at the conclusion of each subscale the caregiver was asked to rate on a 7 point Likert scale how much they would like to do things differently in each area of parenting. Each of these three items was included on the latent construct measuring the desire to change parenting behaviors.



The means, standard deviations, and correlations of the indicators for the child behavior problems, parenting behavior problems, perception of parenting as problematic, the desire to change parenting behaviors, and the measured indicator for familial service utilization are included in Table 6. The items included in the child behavior problems construct were significantly and positively correlated with the items used to measure the perception of parenting as problematic, the desire to change, and negatively correlated with parenting behavior problems, with one exception. The only two items used in the analysis that were not significantly correlated with one another were the Proactive Parenting as a parenting problem behavior and the family's utilization of services. All other variables used in these analyses were significantly correlated in the expected direction.

The model including the latent constructs for child behavior problems, the perception of parenting as problematic, the desire to change parenting behaviors and the parenting behavior problems as predictors of the concurrent use of available community services is displayed in Fig. 3. The model fit the data well, where  $\chi^2(57) = 167.859$ ,  $p = .000$ , CFI = .969, TLI = .943, and RMSEA = .058. Significant loadings were obtained with all indicators for the constructs included in the analyses. Two constructs significantly predicted the family's concurrent use of community services: behavior problems exhibited by the child and the parent's perception of their parenting skills as problematic. Community service utilization was not predicted by the parent's desire to change their parenting behaviors, nor their problematic parenting behaviors.

## Discussion

The factor structure of the PARYC is consistent with recent research and theory (Dishion and Kavanagh 2003), and suggests this measure adequately assesses Supporting Positive Behavior, Setting Limits, and Proactive Parenting as three primary parenting constructs. The existence of these three theoretically derived parenting constructs was supported in both the EFA and CFA analyses. In addition, these three factors accounted for an impressive 57% of the variance in the scale. It is likely some of the remainder of the variance in this scale can be accounted for by the method variance and measurement error, in addition to the two Setting Limits items that did not significantly load onto the theorized construct.

Only two items from the original scale did not significantly load onto the three theorized subscales, both of which were designed to measure limit setting behaviors among parents. The two items included: (1) "Set rules on your child's problem behavior that you were willing/able to enforce?" and (2) "Tell your child how you expected him or her to behave?" Although both of these questions refer directly to setting rules and stating expectations, neither loaded onto the setting limits factor and instead the two items clustered together onto their own factor. It could be that these two items require more abstract thinking in that both refer to the advanced planning of potential future situations as opposed to more immediate and defined contexts, as was the case with the other questions developed to measure this construct.

Aside from sound preliminary measures of construct validity, evidence for convergent validity is noted in the significant relationships between the PARYC scales and other measures of both adaptive and dysfunctional parenting strategies. As evidenced by the positive correlations, primary caregivers had a tendency to rate themselves as high on parenting practices such as Supporting Positive Behavior, Setting Limits, and Proactive Parenting when they also self-assessed as high in the areas of parenting competency, self-efficacy and satisfaction, as well as having a positive relationship with their child. Similarly, negative correlations were obtained between parenting skills and parental perceptions of child problem behavior, which suggests that high levels of adaptive parenting skills were

related to simultaneous low levels of child behavior problems and maladaptive parenting practices. These findings are strengthened by the corroborating cross-informant results obtained by correlations among the primary caregivers parenting skills and reports of the child's behavior problems from alternative caregivers for most of the parenting skill items. No significant relationships were found between the primary caregiver's report of their ability to support positive behavior and the alternative caregiver's perception of the child's behavior as problematic. The primary caregiver's self-assessed report of their proactive parenting practices was not associated with any ratings made by the alternative caregiver regarding the behavior problems of the child. However, it is also important to note that the primary caregiver and the alternative caregiver were also not in high agreement regarding the behavioral problems of the child.

In addition to measurement properties, these scales provide a simple and cost-effective tool for interventions focused on improving parenting skills. The results suggest important parenting behaviors implicated in the long-term development of children and adolescents (Pettit and Laird 2002) and can be easily measured by a brief self-report measure. The brief and simple assessment of parenting practices, parental perceptions of parenting strategies, and the desire to make changes in current parenting practices have the advantage of enriching therapist-client conversations surrounding parenting strategies and motivation to change. Discrepancies between current levels of functioning, the parents' perception of their parenting behaviors and their desire to make changes can also be explored within a motivational interviewing context so as to most effectively elicit changes in the parenting practices for the benefit of the family as a whole (Dishion and Stormshak 2007).

In line with previous findings (Spoth and Redmond 1995), the current analyses suggest that parents' perception of their parenting and/or their child's behavior as being problematic were related to concurrent service utilization practices. Surprisingly, neither the desire to change aspects of parenting nor problematic parenting practices was related to concurrent levels of service utilization. From a logical standpoint, it is not surprising that the existence of a problem is not predictive of seeking help from familial or community resources. However, the motivation to change has been related to seeking treatment in other studies assessing treatment engagement patterns (Jones et al. 2006). It is important to note that the service utilization questionnaire used in this analysis did not restrict the participants to reporting formal or empirically validated parenting interventions, so it is conceivable that the desire to change parenting practices may be more useful when gauging the treatment motivation for specific interventions related solely to their parenting practices. It should also be noted that neither prior service utilization nor satisfaction with these services were considered in this model. These factors may be very important in predicting the likelihood that someone will seek services for problematic behaviors (Spoth and Redmond 1995).

Even though these initial data support the PARYC as a valuable clinical and research tool, there are several limitations which should be addressed in future research. First and foremost, the samples used to evaluate the PARYC were homogeneous in some aspects. Specifically, all families included in the study were recruited because they met high risk criterion based primarily on indices of risk status. In addition, the PARYC was only administered to the parents of children between the ages of 5 and 6 years of age. These limitations restrict the ability to establish normative values, and the utility of this tool with parents of children in different developmental periods. This brings up another limitation; not providing data in the current report on the PARYC's sensitivity to change. In addition, other important aspects of parenting were not included in the current version of the PARYC measure that may be important for the well-being and future outcomes of children, particularly older (e.g., monitoring, problem solving) or much younger (e.g., responsiveness)

children. The researchers also recognize the social desirability present in measures assessing parenting behaviors.

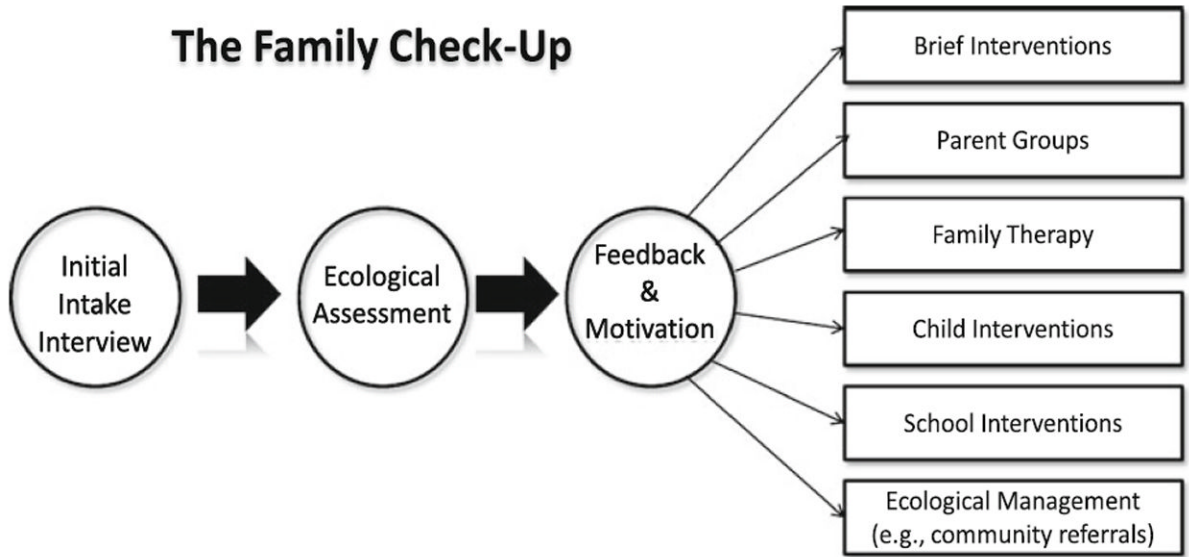
In sum, the PARYC shows great promise as a simple and effective means of measuring many clinically useful aspects of parenting behaviors. The three major parenting constructs this instrument was designed to evaluate were positive behavior support, limit setting, and proactive parenting, all of which have strong empirical support suggesting important predictive ability of later childhood outcomes (Dishion and Patterson 1992; Gardner et al. 2007). In addition to effectively measuring these three important parenting skills, the PARYC also provides clinicians and researchers with relevant data regarding the informants' perception of these skills as problematic and their desire to change parenting behaviors. Although the desire for change and ineffective parenting practices were not predictive of concurrent service utilization, motivational interviewing research (Miller and Rollnick 2002) suggests these data are very useful for promoting change behaviors and encouraging people to make positive behavioral changes.

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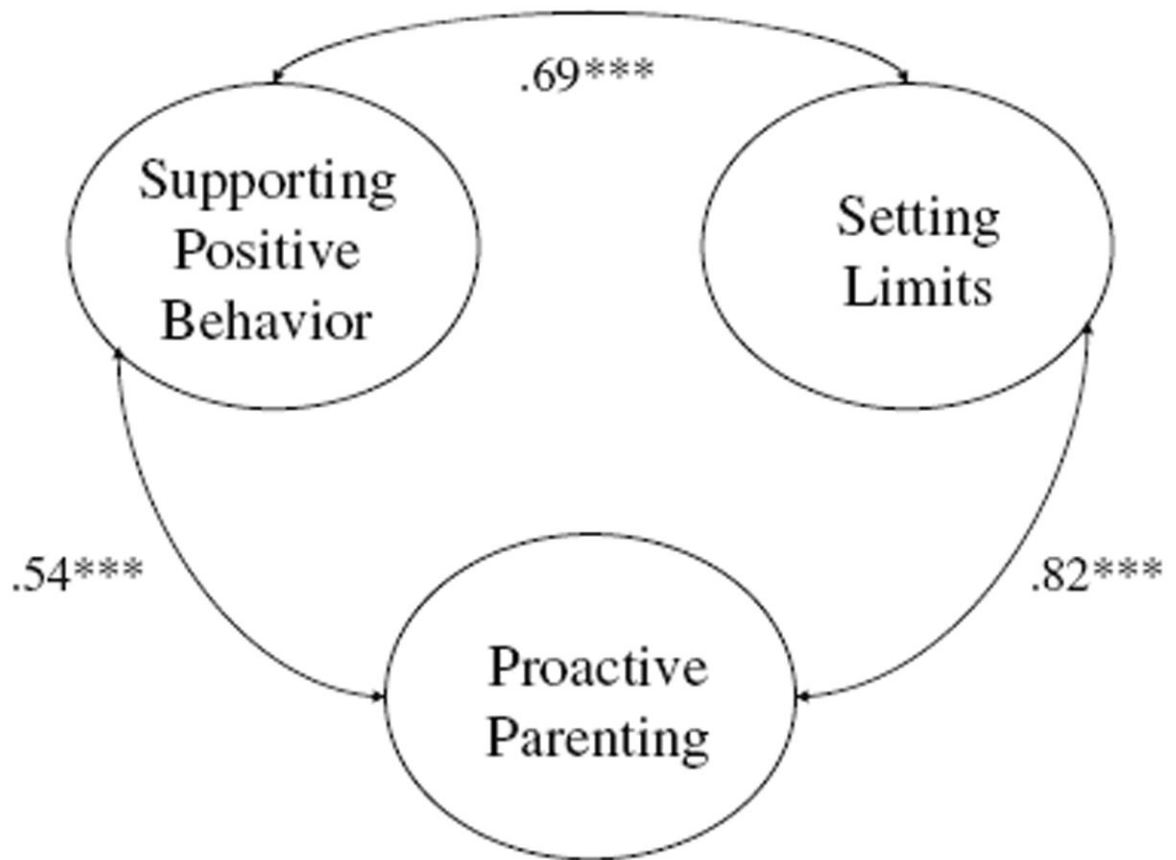
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## The Family Check-Up



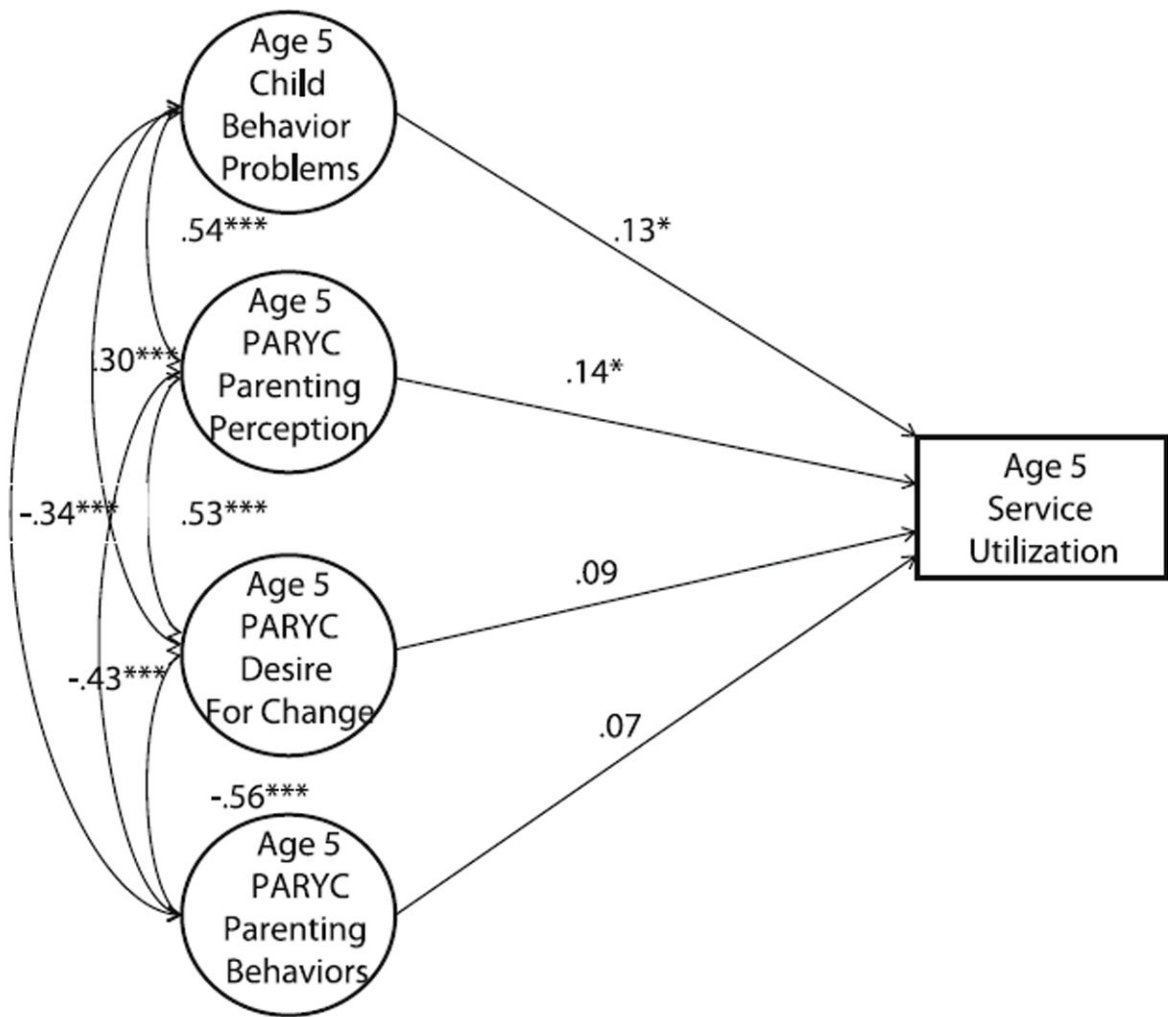
**Fig. 1.** Conceptual model of the family check-up



CMIN = 318.258 df = 147  $p = .000$

CFI = .919 RMSEA = .061 TLI = .906

**Fig. 2.**  
Correlations among the parent behavior constructs measured by the PARYC



Chi=167.859 df=57 p=.000

CFI=.969 RMSEA=.058 TLI=.943

**Fig. 3.**  
The contribution of PARYC constructs and child behavior problems to service utilization

**Table 1**

## Means and standard deviations of PARYC items

	Mean	SD
Supporting good behavior		
1. Play with your child in a way that was fun for <i>both of you</i> ?	5.91	1.24
2. Stand back and let your child work through problems s/he might be able to solve?	5.37	1.36
3. Invite your child to play a game with you or share an enjoyable activity?	5.55	1.33
4. Notice and praise your child's good behavior?	6.42	.92
5. Teach your child new skills?	5.57	1.47
6. Involve your child in household chores?	5.67	1.35
7. Reward your child when s/he did something well or showed a new skill?	6.25	.96
Setting limits		
1. Stick to your rules and not change your mind?	5.22	1.39
2. Speak calmly with your child when you were upset with him or her?	4.88	1.43
3. Explain what you wanted your child to do in clear and simple ways?	5.71	1.20
4. Tell your child what you wanted him or her to do rather than tell him/her to stop doing something?	5.13	1.25
5. Tell your child how you expected him or her to behave?	5.85	1.28
6. Set rules on your child's problem behavior that you were willing/able to enforce?	5.45	1.36
7. Make sure your child followed the rules you set all or most of the time?	5.55	1.27
Proactive parenting		
1. Avoid struggles with your child by giving clear choices?	5.45	1.52
2. Warn your child <i>before</i> a change of activity was required?	5.38	1.61
3. Plan ways to prevent problem behavior?	5.21	1.50
4. Give reasons for your requests?	5.60	1.35
5. Make a game out of everyday tasks so your child followed through?	4.61	1.68
6. Break a task into small steps?	5.36	1.53
7. Prepare your child for a challenging situation?	5.48	1.52

Questions are numbered in the order in which they appear in the PARYC measure. Item examples provided in the measure are not included in interest of space



Table 2

Correlations among PARYC items

	SPB 1	SPB 2	SPB 3	SPB 4	SPB 5	SPB 6	SPB 7	SL 1	SL 2	SL 3	SL 4	SL 5	SL 6	SL 7	PP 1	PP 2	PP 3	PP 4	PP 5	PP 6	
SPB 1	–																				
SPB 2	.32**	–																			
SPB 3	.50**	.38**	–																		
SPB 4	.36**	.29**	.38**	–																	
SPB 5	.35**	.25**	.51**	.38**	–																
SPB 6	.23**	.30**	.37**	.31**	.39**	–															
SPB 7	.32**	.29**	.44**	.59**	.43**	.43**	–														
SL 1	.12	.25**	.17*	.21**	.12	.18*	.12	–													
SL 2	.34**	.20**	.37**	.26**	.30**	.22**	.31**	.41**	–												
SL 3	.28**	.29**	.37**	.34**	.24**	.30**	.36**	.39**	.48**	–											
SL 4	.27**	.24**	.38**	.31**	.34**	.28**	.31**	.27**	.48**	.52**	–										
SL 5	.23**	.22**	.19*	.30**	.24**	.29**	.30**	.15*	.22**	.36**	.38**	–									
SL 6	.22**	.30**	.31**	.35**	.28**	.31**	.30**	.40**	.39**	.49**	.46**	.50**	–								
SL 7	.29**	.28**	.35**	.34**	.35**	.33**	.37**	.45**	.44**	.49**	.43**	.38**	.56**	–							
PP 1	.18*	.17*	.19*	.25**	.15*	.14*	.22**	.32**	.34**	.45**	.35**	.26**	.40**	.40**	–						
PP 2	.11	.23**	.19*	.24**	.23**	.15*	.22**	.30**	.29**	.33**	.30**	.25**	.39**	.31**	.46**	–					
PP 3	.19*	.24**	.24**	.21**	.21**	.16*	.21**	.36**	.30**	.36**	.31**	.29**	.43**	.37**	.45**	.52**	–				
PP 4	.22**	.28**	.23**	.24**	.19*	.21**	.28**	.34**	.31**	.45**	.39**	.34**	.41**	.37**	.48**	.56**	.58**	–			
PP 5	.21**	.17*	.33**	.23**	.30**	.23**	.32**	.18*	.44**	.39**	.37**	.20**	.29**	.34**	.32**	.31**	.40**	.39**	–		
PP 6	.18*	.19*	.24**	.25**	.30**	.24**	.28**	.22**	.31**	.38**	.33**	.29**	.40**	.35**	.36**	.39**	.40**	.46**	.40**	–	
PP 7	.21**	.25**	.37**	.30**	.38**	.29**	.36**	.30**	.35**	.45**	.35**	.27**	.38**	.46**	.39**	.36**	.48**	.48**	.44**	.62**	–

SPB Supporting Positive Behavior, SL Setting Limits, PP Proactive Parenting. Each abbreviation is followed by the corresponding item number

\*  $p < .05$ ;

\*\*  $p < .01$

**Table 3**

Means, standard deviations, and factor loadings for PARYC items from the exploratory factor analysis sample

Factor	Item	Mean	SD	Factor loading
Supporting positive behavior				
1	Invite your child to play a game with you or share an enjoyable activity?	5.65	1.34	.75
	Reward your child when s/he did something well or showed a new skill?	6.29	.91	.73
	Teach your child new skills (such as tying their shoes)?	5.55	1.51	.70
	Play with your child in a way that was fun for <i>both of you</i> ?	5.89	1.24	.61
	Notice and praise your child's good behavior (such as, "Good job putting away your toys.")	6.34	1.01	.60
	Involve your child in household chores?	5.70	1.37	.60
	Stand back and let your child work through problems s/he might be able to solve (such as putting a puzzle together)?	5.48	1.35	.56
Proactive parenting				
2	Avoid struggles with your child by giving clear choices (such as offering toast or cereal for breakfast)?	5.39	1.57	.74
	Warn your child <i>before</i> a change of activity was required (such as a 5 min warning before leaving the house in the morning)?	5.30	1.70	.71
	Plan ways to prevent problem behavior (such as feeding your child before going to the store)?	5.22	1.50	.71
	Give reasons for your requests (such as picking up toys) so your child followed through?	5.65	1.37	.71
	Make a game out of everyday tasks (such as picking up toys) so your child followed through?	4.60	1.65	.67
	Break a task into small steps (such as "Put your shoes on first and then get your coat." instead of "Get ready to go.")	5.32	1.65	.58
	Prepare your child for a challenging situation (such as going to a toy store or starting a new school)?	5.53	1.54	.54
Setting limits				
3	Speak calmly with your child when you were upset with him or her?	4.88	1.46	.76
	Stick to your rules and not change your mind?	5.33	1.32	.67
	Explain what you wanted your child to do in clear and simple ways?	5.76	1.16	.62
	Make sure your child followed the rules you set all or most of the time?	5.59	1.21	.62
	Tell your child what you wanted him/her to do rather than tell him/her to stop doing something?	5.18	1.25	.53
4	Set rules on your child's problem behavior that you were willing/able to enforce?	5.41	1.42	.66
	Tell your child how you expected him or her to behave (such as in the grocery store)?	5.78	1.31	.66

**Table 4**

Model fit indices for the three parenting behavior constructs from the confirmatory factor analysis sample

Construct	$\chi^2$	df	p	CFI	TLI	RMSEA	SRMR
1. Supporting positive behavior	48.539	14	.000	.932	.898	.089	.042
1a. Supporting positive behavior (allowing correlations)	30.472	13	.004	.966	.944	.066	.035
2. Setting limits	16.573	5	.005	.972	.945	.087	.029
3. Proactive parenting	78.354	14	.000	.915	.873	.122	.051
3a. Proactive parenting (allowing correlations)	28.748	13	.007	.979	.966	.063	.036

**Table 5**

Correlations of PARYC intensity scales with other validated measures

	Supporting positive behavior	Setting Limits	Proactive parenting
ACRS: positive relationship score	.29**	.21**	.20**
ACRS: conflict relationship score	-.26**	-.35**	-.21**
PSOC: competency score	.44**	.49**	.37**
PSOC: self-efficacy score	.31**	.40**	.31**
PSOC: satisfaction score	.43**	.41**	.31**
Parenting scale: laxness score	-.25**	-.50**	-.38**
Parenting scale: overreactivity score	-.36**	-.51**	-.36**
Eyberg: PC report: total intensity score	-.27**	-.32**	-.21**
Eyberg: PC report: total problems score	-.23**	-.33**	-.23**
CBCL: PC report: total problems score	-.22**	-.27**	-.14**
Eyberg: AC report: total intensity score	-.23**	-.18**	-.09
Eyberg: AC report: total problems score	-.09	-.14*	-.06
CBCL: AC report: total problems score	-.14*	-.17**	-.09

PC Primary caregiver, AC Alternative caregiver, ACRS Adult child relationship scale, PSOC Parenting sense of competence scale, CBCL Child behavior checklist

\*  $p < .05$ ;

\*\*  $p < .01$

Table 6

Descriptive statistics and correlations of the latent constructs predicting service utilization

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
<i>Child behavior problems</i>														
1. Eyberg conduct problems score	–													
2. Eyberg oppositional score	.64**	–												
3. CBCL conduct problems score	.67**	.62**	–											
4. CBCL oppositional score	.55**	.73**	.71**	–										
<i>Perception of parenting as problematic</i>														
5. Supporting positive behavior	.18**	.16**	.18**	.20**	–									
6. Setting limits	.27**	.40**	.32**	.34**	.37**	–								
7. Proactive parenting	.32**	.41**	.32**	.33**	.36**	.62**	–							
<i>Parenting behavior problems</i>														
8. Supporting positive behavior	-.22**	-.26**	-.23**	-.23**	-.32**	-.25**	-.24**	–						
9. Setting limits	-.25**	-.34**	-.27**	-.27**	-.20**	-.47**	-.30**	.55**	–					
10. Proactive parenting	-.19**	-.22**	-.17**	-.15**	-.13**	-.30**	-.32**	.46**	.64**	–				
<i>Desire to change</i>														
11. Supporting positive behavior	.15**	.17**	.15**	.15**	.37**	.34**	.32**	-.52**	-.44**	-.32**	–			
12. Setting limits	.21**	.31**	.23**	.26**	.29**	.50**	.38**	-.41**	-.51**	-.31**	.74**	–		
13. Proactive parenting	.21**	.23**	.16**	.20**	.23**	.30**	.44**	-.34**	-.38**	-.36**	.68**	.77**	–	
<i>Dependent variable</i>														
14. Service utilization	.13**	.15**	.23**	.19**	.20**	.16**	.21**	-.17**	-.09*	-.01	.21**	.19**	.11*	–
Mean	23.09	36.58	3.85	3.41	.37	.95	.74	41.03	26.82	37.47	2.05	2.37	2.07	2.26
SD	8.65	12.74	3.62	2.30	.93	1.35	1.41	5.76	4.88	7.75	1.51	1.64	1.46	2.01

\*  $p < .05$ ;

\*\*  $p < .01$