

Adolescents' Perceptions of Parenting Behavior: Validation of the Alabama Parenting Questionnaire Adolescent Self Report

Kimberly Zlomke · Sarah Bauman ·
Dustin Lamport

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Abstract The Alabama Parenting Questionnaire (APQ) is a well-validated instrument designed to assess parenting behaviors that may be associated with child conduct problems. The APQ's original five factors were theoretically derived, encompassing positive parenting, corporal punishment, inconsistent discipline, parental involvement, and poor monitoring/supervision. To date several studies have used data-driven approaches in order to ascertain the factor structure of the child and parent report versions of the APQ, with three-, four-, and five-factor models proposed. The current study investigated the psychometric properties of the child report version of the APQ in a sample of 358 adolescents aged 11–18. Results of two separate factor analyses suggest four-factor solutions for mothers and fathers, though the factor titles and item content of these four factors differed between mothers and fathers. Follow-up individual item analyses reveal several strong correlations with child age, indicating that some APQ items may be inappropriate for an older adolescent sample. Implications of the differences in factor structures for mothers and fathers as well as strong age correlations are discussed.

Keywords Alabama Parenting Questionnaire · Adolescents · Youth self report · Factor analysis

Introduction

Research suggests that a variety of factors contribute to the development and maintenance of conduct problems in youth. However, the most well-documented risk factor for youth behavior problems is ineffective parenting (Essau et al. 2006; Frick et al. 1999; Scott et al. 2011). As such, a great deal of psychological research has been devoted to assessing parenting behaviors. Historically, direct observation has been the most common method used to examine parenting, despite concerns regarding the method's associated expense, reactivity, and likelihood of missing low-frequency behaviors (Essau et al. 2006; Scott et al. 2011). Alternatively, self report questionnaires offer a method of assessing parenting behavior that avoids some of the drawbacks associated with direct observation.

The Alabama Parenting Questionnaire (APQ) is one such measure that was developed to assess key aspects of parenting that research has demonstrated to be associated with childhood conduct problems (Shelton et al. 1996). While the APQ is useful in identifying specific parenting behaviors, it is perhaps better utilized in describing groups or patterns of parenting behaviors that may influence youth's development and functioning. The APQ gives clinicians a viable alternative to direct behavioral observation of aspects of parenting that can be difficult to engineer in laboratory settings (e.g., being without supervision and usage of corporal punishment; Essau et al. 2006; Zlomke et al. 2013). The APQ is a 42-item multi-informant (parent and child report) and multi-method (global report and telephone interview) assessment made up of five scales: positive parenting, corporal punishment, inconsistent discipline, parental involvement, and poor monitoring/supervision. Additionally, the APQ includes seven "other

K. Zlomke · D. Lamport
Clinical and Counseling Psychology Program, University of
South Alabama, Mobile, AL, USA

S. Bauman (✉)
Department of Psychology, University of South Alabama,
UCOMM 1000, Mobile, AL 36688, USA
e-mail: sarahebauman@gmail.com

discipline practices” items in order to eliminate bias toward corporal punishment (Shelton et al. 1996). The APQ was originally standardized in a sample of elementary school-aged children. However, the APQ has also been used extensively with adolescent populations because there are few other measures that can assess a variety of parenting practices, have good initial psychometric properties, and can be understood by individuals of varying education levels (Nichols-Anderson 2000).

The relation between parenting practices and behavioral difficulties in youth is further complicated when developmental level is considered. Developmentally, the shift from childhood to adolescence is characterized by a number of social, cognitive, and biological changes that have impact on the parent–child dynamic (Paikoff and Brooks-Gunn 1991; Zlomke et al. 2013). Specifically, parental involvement, use of positive discipline techniques, monitoring and supervision, and use of corporal punishment have been shown to decrease as children age and are afforded more independence (Shelton et al. 1996). Given the changes in parenting practices during the transition from childhood to adolescence, it is likely that parents of adolescents are answering APQ questions differently than parents of school-aged children.

The APQ was originally developed for school-aged children; despite this the APQ has been used extensively as a measure of parenting in populations of early and late adolescents between the ages of 10 and 19 years. Items on the APQ have been shown to be related to various aspects of adolescent functioning including personality characteristics, conduct problems and delinquency, aggression, risky behaviors, substance use, and depressive symptomology (Barry et al. 2007; Eckshtain et al. 2010; Kamon et al. 2005; Kung and Farrell 2000; Latzman et al. 2009; Magoon and Ingersoll 2006; Mazefsky and Farrell 2005). In general, these studies found that positive parenting practices such as involvement and positive reinforcement are related to more positive adolescent outcomes (i.e. less conduct problems, delinquency, aggression, risky behaviors, substance use, and depressive symptomology) and more positive maternal and adolescent personality characteristics (i.e. positive temperament); negative parenting practices such as poor monitoring and supervision, corporal punishment, and inconsistent discipline are associated with more negative adolescent outcomes (i.e. more conduct problems, delinquency, aggression, peer provocation, exposure to violence, risky behaviors, substance use, and depressive symptomology) and more negative maternal and adolescent personality characteristics (i.e. narcissism, negative temperament, mistrust, manipulateness, aggression, disinhibition, self-harm, eccentric perceptions, hyperactivity/impulsivity, and detachment; Barry et al. 2007; Eckshtain et al. 2010; Kamon et al. 2005; Kung and Farrell 2000;

Latzman et al. 2009; Magoon and Ingersoll 2006; Mazefsky and Farrell 2005).

Latzman et al. (2009) examined the associations between maternal and adolescent personality and parenting practices using the APQ in a sample of boys aged 11–16 years. They sought to provide evidence for the transactional nature of parent–child relationships, with maternal and adolescent characteristics both influencing parenting practices. Findings from mother and son’s reports indicated small to moderate relations between the positive parenting strategies of involvement and positive reinforcement and positive maternal and adolescent temperament. Similarly, small to moderate relations were found between the negative parenting strategies of poor monitoring/supervision and inconsistent discipline and the negative maternal and adolescent personality characteristics of negative temperament, mistrust, manipulateness, aggression, self-harm, eccentric perceptions, disinhibition, and impulsivity.

Barry et al. (2007) used the APQ to investigate the associations between adaptive and maladaptive narcissism, delinquency, callous/unemotional traits, and parenting practices in a sample of youth aged 9–15 years-old. APQ scales were combined into two composites: a Positive Parenting Composite involving the Positive Parenting and Involvement scales and a Negative Parenting Composite involving the Poor Monitoring and Supervision, Inconsistent Discipline, and Corporal Punishment scales. Again, findings suggested small to moderate relations between the positive parenting practices of reinforcement and involvement and positive adolescent delinquency outcomes and personality characteristics and small to moderate relations between negative parenting practices and negative adolescent characteristics and delinquency outcomes.

Dandreaux and Frick (2009) used the APQ to compare youth reported dysfunctional parenting in boys (11–18 years-old) with childhood-onset conduct problems compared to adolescent-onset conduct problems. They converted APQ scales to z-scores, inverted the Involvement and Positive Parenting scales, and added the resulting five scales to form a Dysfunctional Parenting Composite. Comparisons indicated that the two groups differed on youth reported dysfunctional parenting such that the childhood-onset group received higher scores on the Dysfunctional Parenting Composite.

Mazefsky and Farrell (2005) used the child form of the APQ to investigate the association between parental monitoring and discipline, witnessing violence, peer provocation, and family support on adolescent aggression in a sample of 1,153 ninth graders in the rural South. The APQ Poor Monitoring and Supervision and Inconsistent Discipline subscales were combined to form an overall scale of Poor Parenting Practices. Results indicated that adolescent

reported Poor Parenting was significantly related to lower levels of family support, more instances of witnessing violence, increased peer provocation, and increased aggression.

Nichols-Anderson (2000) used the APQ to examine the associations between parenting practices and acculturation on risky sexual behaviors in Hispanic adolescents between the ages of 12 and 18 years-old. Maternal and paternal Involvement and Positive Parenting were significantly negatively associated with sexual risk taking. Poor Monitoring and Supervision was significantly positively associated with sexual risk taking (Nichols-Anderson 2000).

Magoon and Ingersoll (2006) used the Poor Monitoring and Supervision subscale of the child form of the APQ to investigate relations between parental modeling, attachment, and supervision and adolescent gambling in a sample of 116 adolescents aged 14–19 years. Scores for the Poor Monitoring and Supervision scale were inverted so that higher scores reflected increased supervision. Principal axis factor analysis was used with a Varimax rotation to investigate whether the APQ assessed one monitoring/supervision factor or multiple factors in this population (Magoon and Ingersoll 2006). Results indicated the presence of two monitoring/supervision factors that they called factors 1 and 2. Correlational analyses revealed significant relationships between parental monitoring and supervision factors 1 and 2 and past year Games of Skill Gambling, such that lower levels of parental monitoring and supervision were related to higher levels of youth gambling on skill games in the past year. Additionally, lower levels of parental monitoring/supervision on factors 1 and 2 were related to categorization as “problem gamblers” using the South Oaks Gambling Screen-Revised Adolescent (SOGS-RA; Winters et al. 1993) criteria (Magoon and Ingersoll 2006), suggesting that problem gambling in youth is related to less parental monitoring and supervision.

Kung and Farrell (2000) used the APQ child form in their investigation of the associations between parenting practices, peer pressure, family structure, and drug use in a sample consisting of largely African American seventh graders (aged 12–14 years) in an urban setting. Results showed a high correlation between the APQ Inconsistent Discipline and Poor Monitoring and Supervision scales in their sample, suggesting that the two scales were not measuring different constructs (Kung and Farrell 2000). Therefore, the two scales were combined into a single scale labeled Poor Parenting. Results indicated that peer pressure was more strongly associated with drug use than parenting for both girls and boys. However, parenting also influenced drug use indirectly through its relation with peer pressure, such that adolescents who received poor parenting were less able to resist peer pressure to engage in drug use.

Eckshtain et al. (2010) used the parent and youth forms of the APQ to assess the relation between aspects of parenting and adolescent symptoms of depression in 61 parents and adolescents (10–17 years-old) with diabetes. Parent report of high levels of youth depression was associated with high levels of Inconsistent Discipline and low Involvement.

As evidenced by the aforementioned studies, the APQ is a useful instrument for assessing parenting practices in adolescents. However, the five-factor model of the APQ was developed in a sample of school-aged children. Given the parenting changes associated with the transition from childhood to adolescence, it is unclear whether a five-factor model of the APQ is appropriate for adolescents. For this reason, a number of studies have attempted to determine the factor structure of the APQ in an adolescent sample. However, empirical investigation has shown mixed results, with proposed models varying between three, four, and five factors (Essau et al. 2006; Molinuevo et al. 2011; Zlomke et al. 2013).

Factor analysis for the APQ Child Global Report in a sample of German adolescents (10–14 years-old) revealed a five factor solution consistent with the five theoretical factors of the APQ: Parental Involvement, Positive Parenting, Poor Monitoring/Supervision, Inconsistent Discipline, and Corporal Punishment (Essau et al. 2006). Conversely, principal component analysis revealed a three-factor solution for the Catalan versions of the APQ Parent and Child Global Reports in a sample of Spanish adolescents (aged 10–15 years) and their families (Molinuevo et al. 2011). The three scales consisted of items measuring Positive Involvement, Ineffective/Negative Discipline, and Poor Monitoring (Molinuevo et al. 2011). Zlomke et al. assessed the factor structure of the APQ Parent Global Report for use in a population of 376 caregivers of adolescents between the ages of 11–18 years. In contrast to previous literature, results suggested that a four factor solution accounted for approximately 35 % of the variance (Zlomke et al. 2013).

The APQ has been extensively utilized in adolescent populations to measure parenting practices and their associations with youth personality characteristics and behavioral and emotional difficulties, including depressive symptoms (Eckshtain et al. 2010), conduct problems and delinquency (Barry et al. 2007; Dandreaux and Frick 2009), risk taking behaviors (Nichols-Anderson 2000; Magoon and Ingersoll 2006), aggression (Mazefsky and Farrell 2005), and substance abuse (Kung and Farrell 2000). However, the appropriateness of the five factor structure of the APQ with this age group is unknown, with most past studies finding conflicting results, using only one assessment format (Essau et al. 2006; Zlomke et al. 2013), or combining data across assessment formats (i.e., parent and child global reports; Molinuevo et al. 2011). In

addition, two-thirds of the previous research was conducted with samples of European youth and may not generalize to youth in the US. The current study aims to resolve the inconsistencies in the literature regarding the appropriate factor model of the APQ for use with an adolescent population by examining the factor structure and psychometric properties of the Child Global Report of the APQ in a sample of adolescents aged 11–18 years in the US.

Method

Participants

Participants consisted of 358 adolescents aged 11–18 years. Participants were recruited through a referral sampling method in a large southeastern city. Referral sampling, also called snowball sampling, is a type of non-random sampling in which existing participants refer future participants from among their acquaintances. Demographic information was collected from adolescents as well as their parents. The majority of adolescents were female (50.3 %) and Caucasian (86.7 %). Adolescents had a mean age of 14.8 and mean grade level of 9.4 (mode = 11). Caregiver's reports indicated that 16.2 % of the adolescents had a diagnosed psychological disorder, 8.8 % had been retained a grade, and 4.5 % received special education services.

Caregiver's marital status was primarily married (82.4 %). The majority of parents reported an education level of at least standard college/university (35.4 %) and a total household income level of 100,000 or higher (38.6 %). Parents primarily identified as Caucasian (86.7 %) and ranged in age from 27 to 58 ($M = 43.9$, $SD = 5.7$).

Procedure

Undergraduate research assists recruited community adolescents and their caregiver(s) in the study as part of a larger university based study. Institutional Review Board approval was granted by the study site prior to data collection. Participating adolescents and caregivers completed paper and pencil measures, which required approximately 30 min to complete.

Measures

Alabama Parenting Questionnaire

The APQ is a 42-item self report measure assessing parenting practices often regarded as correlates to disruptive child behaviors (Shelton et al. 1996). The APQ assesses parenting practices on five domains: Positive Parenting (6

items), Poor Monitoring (10 items), Inconsistent Discipline (6 items), Involvement (10-items) and Corporal Punishment (3 items). An additional seven items assess discipline practices other than corporal punishment. These items are included to circumvent a negative bias toward the corporal punishment items (Shelton et al. 1996). Items are scored using a Likert scale ranging from 1 (never) to 5 (always). The APQ has demonstrated moderate internal consistency for the five scales ($\alpha = .63$ –.80) in a sample of adolescent age 6–13 years (Shelton et al. 1996).

Data Analysis

Data were analyzed using SPSS 18 (PASW; SPSS, 2009). Listwise deletion, a method for handling missing data, was utilized such that participants with one or more missing questionnaire answers were excluded from analysis. The final sample size consisted of 293 respondents for mothers and 169 respondents for fathers. Overlap was present in these analyses, with 164 adolescents reporting on both their mothers and fathers. In the text, items will be referred to by their item numbers. See Tables 1 and 3 for description of item content. Items 1, 4, 7, 9, 11, 14, 15, 20 and 26 of the APQ are two-part items: the first part of each question asks respondents to report on their mothers and the second part asks them to report on their fathers (e.g., “You have a friendly talk with your mom” and “How about your dad?”). All other items consisted of “shared” items (e.g., “Your parents tell you that you are doing a good job”).

Results

Preliminary factor analysis of 51 APQ items (42 item APQ plus 9 additional father-specific items) revealed a four-factor solution, with the fourth factor containing only the aforementioned father-specific items. Although this analysis may have shed some insight on the factor structure of the APQ for mothers, it provided very little useful information for fathers. As such, we felt that separate factor analyses for mothers and fathers would allow for more conclusions to be made about the functioning of the APQ for each parent. Therefore in order to maximize the number of cases retained through listwise deletion as well as to explore the possibility of differing factor structures for mothers and fathers, separate exploratory factor analyses (EFAs) were conducted for mothers and fathers. Results of these analyses and comparisons between the two are presented below.

For individuals reporting on their mothers, no individual variables had more than 5.4 % missing values. Due to previous empirical demonstration of limited response variability of several items (e.g., discipline items; Shelton

Table 1 Factor loadings for mothers

	Factor			
	1 $\alpha = .901$	2 $\alpha = .796$	3 $\alpha = .771$	4 $\alpha = .707$
1. You have a friendly talk with your mom	.627			
2. Your parents tell you that you are doing a good job	.719			
3. Your parents threaten to punish you and then do not do it				-.513
4. Your mom helps with some of your special activities (sports, youth groups)	.602			
5. Your parents reward or give something extra to you for behaving well	.607			
6. You fail to leave a note or let your parents know where you are going		.620		
7. You play games or do other fun things with your mom	.717			
8. You talk your parents out of punishing you after you have done something wrong				-.560
9. Your mom asks you about your day in school	.578			
10. You stay out in the evening past the time you are supposed to be home		.789		
11. Your mom helps you with your homework	.529			
12. Your parents give up trying to get you to obey them because it's too much trouble				
13. Your parents compliment you when you have done something well	.768			
14. Your mom asks you what your plans are for the coming day	.683			
15. Your mom drives you to a special activity				
16. Your parents praise you for behaving well	.772			
17. Your parents do not know the friends you are with				
18. Your parents hug or kiss you when you have done something well	.669			
19. You go out without a set time to be home		.418		
20. Your mom talks to you about your friends	.496			
21. You go about after dark without an adult with you		.605		
22. Your parents let you out of a punishment early (like lift restrictions earlier than they said)				-.492
23. You help plan family activities	.571			
24. Your parents are so busy that they forget where you are and what you are doing				
25. Your parents do not punish you when you have done something wrong				
26. Your mom goes to a meeting at school, like a PTA meeting or parent/teacher conference	.409			
27. Your parents tell you that they like it when you help out around the house	.444			
28. You stay out later than you are supposed to and your parents don't know it		.755		
29. Your parents leave the house and don't tell you where they are going		.455		
30. You come home from school more than an hour past the time your parents expect you to be home		.671		
31. The punishment your parents give depends on their mood				-.498
32. You are at home without an adult being with you				
33. Your parents spank you with their hand when you have done something wrong			.624	
34. Your parents ignore you when you are misbehaving				
35. Your parents slap you when you have done something wrong			.585	
36. Your parents take away a privilege or money from you as a punishment				-.447
37. Your parents send you to your room as punishment				-.408
38. Your parents hit you with a belt, switch, or other object when you have done something wrong			.610	
39. Your parents yell or scream at you when you have done something wrong				-.463
40. Your parents calmly explain to you why your behavior was wrong when you misbehave	.562			
41. Your parents use time-out (makes you sit or stand in a corner) as punishment				
42. Your parents give you extra chores as punishment				

et al. 1996; Zlomke et al. 2013), frequencies were calculated for all items. Frequency analyses demonstrated that for 29 % (12 of 42) items, one response was endorsed with greater than 50 % frequency. “Never” was the most endorsed response for items 12, 17, 24, 28, 29, 30, 33, 34, 35, 38, 41 and “Always” was the most endorsed response for item 9. Interestingly, although several of these items involve parental discipline practices, many of the items with high single-response endorsement involved parental monitoring. This is a pattern that was not found in previous studies of the APQ’s factor structure (Essau et al. 2006; Molinuevo et al. 2011; Zlomke et al. 2013). Two items fell outside of general, recommended guidelines (Tabachnick and Fidell 2007) for skewness (item 38 = 2.1, item 41 = 3.0), and one item fell outside guidelines for kurtosis (item 41 = 10.0). Based on the relatively low number of items falling outside of generally accepted guidelines for inclusion, all items were retained for the analysis.

An initial Exploratory Factor Analysis (EFA) was conducted on data for mothers using Principal Axis Factoring (PAF) with Direct Oblimin (oblique) rotation in order to examine common variance while also allowing for the intercorrelation of resulting factors. This analysis yielded 11 factors with eigenvalues greater than one. A second EFA with PAF and Direct Oblimin with restriction to retain 4 factors was analyzed. The pattern matrix of item loadings is presented in Table 1. The four factors explained approximately 38.3 % of the variance in the items after extraction. Item inspection determined the following themes for each of the four factors: Positive/Involved Parenting, Poor Monitoring, Corporal Punishment, and Inconsistent Discipline. These factors accounted for 19.6, 8.9, 6.8 and 2.9 % of the variance, respectively. Items 12, 15, 17, 24, 25, 32, 34, 41 and 42 did not load highly on any factor in this EFA.

Reliability values were calculated for each scale and ranged from .71 to .90, indicating appropriate to good reliability (See Table 1). All items contributed positively to each scale’s reliability; omission of any item would not have improved reliability by more than +.004. Lastly, use of an oblique rotation method allowed for the intercorrelation of factors. The largest factor correlations observed were between the Positive/Involved Parenting and Poor Monitoring factors ($r = -.288$) and the Poor Monitoring and Inconsistent Discipline factors ($r = -.215$). The factor correlation matrix is included in Table 2.

For individuals reporting on their fathers, missing values ranged from 42.6 to 43.4 % for the father-specific items (1, 4, 7, 9, 11, 14, 15, 20, 26). Frequency analyses were repeated for these father-specific items in order to assess for limited response variability (analysis of “shared” items was redundant; items 12, 17, 24, 28, 29, 30, 33, 34, 35, 38 and 41 had the same limited variability as was reported for

Table 2 Factor correlations for mothers

Factor	1	2	3	4
1	1.000	-.288	.027	.042
2		1.000	-.064	-.215
3			1.000	-.196
4				1.000

mothers). In contrast to results for mothers, item 9 for fathers did not contain a particular response with >50 % endorsement. All father-specific items fell within generally accepted limits for skewness and kurtosis (Tabachnick and Fidell 2007).

An initial EFA was also conducted on data for fathers using PAF with Direct Oblimin (oblique) rotation. This analysis yielded 10 factors with eigenvalues greater than one. Similar to the results for mothers, the scree plot indicated a significant drop off between extracted factors 4 and 5. A second EFA with PAF and Direct Oblimin with restriction to retain 4 factors was analyzed. The pattern matrix of item loadings is presented in Table 3. The four factors explained approximately 40.9 % of the variance in the items after extraction. Item inspection determined the following themes for each of the four factors: Involved Parenting, Positive Parenting, Poor Monitoring, and Inconsistent Discipline/Corporal Punishment. These factors accounted for approximately 22.3, 7.9, 6.9 and 3.8 % of the variance, respectively. Items 3, 8, 17, 24, 33, 34, 41 and 42 did not load highly on any factor in this EFA.

Again, reliabilities were calculated for each scale and ranged from .66 to .90, indicating acceptable to good reliability (See Table 3). Item 29 appeared to substantially reduce the reliability of the Positive Parenting scale (deletion resulted in an increase of .06 of the alpha coefficient). All other items contributed positively to the reliability of their respective scales, with no increase in alpha coefficients resulting from item deletions. An oblique rotation method was again utilized to allow for the intercorrelation of factors. The largest factor correlations observed were between the Involved Parenting and Positive Parenting factors ($r = -.31$), the Involved Parenting and Poor Monitoring factors ($r = -.22$), and the Positive Parenting and Poor Monitoring factors ($r = .22$). The factor correlation matrix is included in Table 4.

Because the current sample included a wide age range of adolescents, it is possible that some items may function differently at different points along the age span. To assess for this potential confound, bivariate correlations were conducted between the age of participant and each APQ item. Results of this analysis are presented in Table 5. Several significant correlations were detected, the strongest of which ($r > .3$) were for items 10, 11, 15, 21, 28, 32, 37.

Table 3 Factor loadings for fathers

	Factor			
	1 $\alpha = .897$	2 $\alpha = .738$	3 $\alpha = .805$	4 $\alpha = .661$
1. You have a friendly talk with your dad	.726			
2. Your parents tell you that you are doing a good job		-.528		
3. Your parents threaten to punish you and then do not do it				
4. Your dad helps with some of your special activities (sports, youth groups)	.680			
5. Your parents reward or give something extra to you for behaving well		-.473		
6. You fail to leave a note or let your parents know where you are going			.594	
7. You play games or do other fun things with your dad	.715			
8. You talk your parents out of punishing you after you have done something wrong				
9. Your dad asks you about your day in school	.611			
10. You stay out in the evening past the time you are supposed to be home			.716	
11. Your dad helps you with your homework	.619			
12. Your parents give up trying to get you to obey them because it's too much trouble		.426		
13. Your parents compliment you when you have done something well		-.737		
14. Your dad asks you what your plans are for the coming day	.780			
15. Your dad drives you to a special activity	.641			
16. Your parents praise you for behaving well		-.610		
17. Your parents do not know the friends you are with				
18. Your parents hug or kiss you when you have done something well	.413	-.404		
19. You go out without a set time to be home			.478	
20. Your dad talks to you about your friends	.676			
21. You go about after dark without an adult with you			.665	
22. Your parents let you out of a punishment early (like lift restrictions earlier than they said)				.456
23. You help plan family activities		-.501		
24. Your parents are so busy that they forget where you are and what you are doing				
25. Your parents do not punish you when you have done something wrong			.405	
26. Your dad goes to a meeting at school, like a PTA meeting or parent/teacher conference	.632			
27. Your parents tell you that they like it when you help out around the house		-.496		
28. You stay out later than you are supposed to and your parents don't know it			.775	
29. Your parents leave the house and don't tell you where they are going		.492		
30. You come home from school more than an hour past the time your parents expect you to be home			.631	
31. The punishment your parents give depends on their mood				.451
32. You are at home without an adult being with you			.441	
33. Your parents spank you with their hand when you have done something wrong				
34. Your parents ignore you when you are misbehaving				
35. Your parents slap you when you have done something wrong		.409		.559
36. Your parents take away a privilege or money from you as a punishment				.444
37. Your parents send you to your room as punishment				.544
38. Your parents hit you with a belt, switch, or other object when you have done something wrong				.505
39. Your parents yell or scream at you when you have done something wrong				.408
40. Your parents calmly explain to you why your behavior was wrong when you misbehave		-.427		
41. Your parents use time-out (makes you sit or stand in a corner) as punishment				
42. Your parents give you extra chores as punishment				

Table 4 Factor correlations for fathers

Factor	1	2	3	4
1	1.000	-.307	-.223	.057
2		1.000	.218	.156
3			1.000	.089
4				1.000

These items generally tap into parental supervision and monitoring as well as punishment techniques.

Discussion

The current study sought to examine the factor structure of the APQ Child Global Report in a sample of adolescents aged 11–18 years. Prior literature has examined the factor structure of various forms of the APQ in a variety of populations (Dadds et al. 2003; Essau et al. 2006; Shelton et al. 1996; Hawes and Dadds 2006; Molinuevo et al. 2011; Zlomke et al. 2013). Previous studies have identified slightly differing factor structures, ranging from three to five factors, in the Child and Parent Global Report forms of the APQ. To date no studies have specifically examined the factor structure and item functioning of the Child Global Report version of the APQ in an adolescent sample. This study aimed to address this gap in the literature.

Overall, the factor structure for the APQ in the current sample was fairly consistent with previously reported findings on the APQ. Results showed that a four-factor solution was the best fit for the data for both mothers and fathers. However, these four factors differed slightly between models. Specifically, Positive and Involved Parenting factors appear to have been collapsed into a single factor for mothers, while Inconsistent Discipline and Corporal Punishment appear to have been collapsed for fathers. Poor Monitoring (factor 2 for mothers; factor 3 for fathers) appears to be fairly consistent in both analyses. The APQ demonstrated adequate to good internal consistency for the four identified factors for both mothers and fathers. The EFAs reported in this study accounted for 38.3 and 40.9 % of the variance in responses for mothers and fathers, respectively, which is consistent with or slightly better than previously reported factor analytic results with the APQ (Essau et al. 2006; Molinuevo et al. 2011; Zlomke et al. 2013). Factor names for the current analysis were chosen in order to be consistent with nomenclature from the original APQ (Shelton et al. 1996).

The original APQ was proposed as a measure of parenting practices along five theoretical dimensions. Results of the current study propose two slightly differing four-factor solutions for mothers and fathers of adolescents. For

Table 5 Individual item correlations with child age

Adolescent APQ item 1—for mom or “parent”	-.109*
Adolescent APQ item 1—for dad	-.110
Adolescent APQ item 2	-.149**
Adolescent APQ item 3	-.021
Adolescent APQ item 4—for mom or “parent”	-.136**
Adolescent APQ item 4—for dad	-.012
Adolescent APQ item 5	-.043
Adolescent APQ item 6	.178**
Adolescent APQ item 7—for mom or “parent”	-.197**
Adolescent APQ item 7—for dad	-.147*
Adolescent APQ item 8	.194**
Adolescent APQ item 9—for mom or “parent”	-.113*
Adolescent APQ item 9—for dad	-.057
Adolescent APQ item 10	.381**
Adolescent APQ item 11—for mom and “parent”	-.315**
Adolescent APQ item 11—for dad	-.134
Adolescent APQ item 12	.045
Adolescent APQ item 13	-.085
Adolescent APQ item 14—for mom or “parent”	.152**
Adolescent APQ item 14—for dad	.087
Adolescent APQ item 15—for mom or “parent”	-.381**
Adolescent APQ item 15—for dad	-.202**
Adolescent APQ item 16	-.093
Adolescent APQ item 17	.034
Adolescent APQ item 18	-.116*
Adolescent APQ item 19	.151**
Adolescent APQ item 20—for mom or “parent”	.020
Adolescent APQ item 20—for dad	.014
Adolescent APQ item 21	.536**
Adolescent APQ item 22	.094
Adolescent APQ item 23	-.120*
Adolescent APQ item 24	.164**
Adolescent APQ item 25	.122*
Adolescent APQ item 26—for mom or “parent”	-.124*
Adolescent APQ item 26—for dad	.058
Adolescent APQ item 27	-.144**
Adolescent APQ item 28	.317**
Adolescent APQ item 29	.213**
Adolescent APQ item 30	.280**
Adolescent APQ item 31	.006
Adolescent APQ item 32	.341**
Adolescent APQ item 33	-.188**
Adolescent APQ item 34	.036
Adolescent APQ item 35	-.099
Adolescent APQ item 36	-.015
Adolescent APQ item 37	-.332**
Adolescent APQ item 38	-.186**
Adolescent APQ item 39	-.103
Adolescent APQ item 40	.006
Adolescent APQ item 41	-.110*
Adolescent APQ item 42	-.047

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

mothers, the factor structure that was identified was similar to the theoretical factor structure, with the exception that the Involvement and Positive Parenting dimensions were collapsed into a single factor. All items that were included in the original APQ's Involvement and Positive Parenting scales loaded onto the first factor, called Positive/Involved Parenting, for mothers. Item 40, which was included in the original APQ's Other Discipline Practices scale also loaded onto this factor in the current analysis. The Poor Monitoring factor identified in the current analysis was consistent with the theoretical structure proposed by Shelton and colleagues, with the exceptions that items 17, 24 and 32 did not load highly on any factor. The Corporal Punishment factor was identical to the original APQ's Corporal Punishment scale. Finally, the Inconsistent Discipline factor identified in the current analysis was fairly consistent with the identically named scale from the APQ, with a few exceptions. Items 12 and 25 did not load highly on any factor, while items 36, 37 and 39 from the Other Discipline Practices scale of the original APQ did load on the Inconsistent Discipline factor in the current analysis.

Although theoretically positive and involved parenting are two distinct constructs, factor analysis in this sample suggests that in a practical sense they operate the same way for mothers. This may be due to sex role socialization of parenting behaviors which typically involve the mother having high parental involvement and exhibiting high empathy, responsiveness, and tendency to nurture (Simons and Conger 2007). This could also be impacted by the region in which the current study took place (a public university in the southeast) or the SES of the sample. It may be that for mothers from this region and/or SES bracket in particular positive parenting is equated to being more involved in a child's life and extracurricular activities.

Results for fathers differed slightly from that of mothers. Notably, the sample size for fathers was much smaller than that for mothers (169 vs. 293), which may have reduced statistical power. Nevertheless, the current EFA accounted for approximately 40.9 % of the variance in responses, which is slightly higher than other factor analyses that have been reported in prior literature. For fathers, the factor structure found in the current study was similar to the theoretical factor structure, with the exception that the Inconsistent Discipline and Corporal Punishment scales were collapsed into a single factor. All items that were included in the original APQ's Involved Parenting scale loaded onto the first factor for the fathers (also named Involved Parenting), with the exception of item 23 ("You help plan family activities") which loaded onto the Positive Parenting scale. All items included in the original APQ's Positive Parenting scale loaded onto the Positive Parenting scale for fathers in the current analysis. Items 12, 29 and

40, which were included in the original APQ's Inconsistent Discipline scale, Poor Monitoring/Supervision scale, and Other Discipline Practices scale, respectively, also loaded onto the Positive Parenting scale in the current analysis. All the items from the original APQ's Poor Monitoring/Supervision scale loaded onto the Poor Monitoring scale for fathers in the current analysis, with the exception of items 17 and 24 that did not load on any factor in the current analysis, item 29 that loaded onto the Positive Parenting scale, and item 25 that loaded onto the Inconsistent Discipline/Corporal Punishment scale in the current analysis. The original APQ's Inconsistent Discipline scale and Corporal Punishment scale were collapsed into a single factor, called the Inconsistent Discipline/Corporal Punishment scale, in the current analysis for fathers. Only items 22, 31, 35 and 38 from the original two scales loaded onto the collapsed Inconsistent Discipline/Corporal Punishment scale for fathers in the current analysis. Items 3, 8 and 33 did not load onto any factor for fathers in the current analysis. As previously mentioned, items 12 and 25 from the original APQ's Inconsistent Discipline scale better loaded onto the Positive Parenting and Poor Monitoring/Supervision scales, respectively, for fathers in the current analysis. Item 39 from the original APQ's Other Discipline Practices scale also loaded onto the Inconsistent Discipline/Corporal Punishment scale for fathers in the current analysis.

Theoretically, inconsistent discipline and corporal punishment are two distinct parenting constructs, but the current analysis demonstrates that, in a practical sense, they mean the same thing for fathers. It may be that fathers, given their socio-typical role as secondary caregiver, are less consistently the disciplinarians for children; but that when fathers *do* discipline their children they typically use corporal punishment. Again, the factorial collapse of these factors may be a function of geographic location, specific to the southeast.

One important discovery from the current sample was the relation of several specific items with participant age. As mentioned in the results and displayed in Table 5, several items had relatively strong correlations with chronological age of the adolescent respondents. Specifically, items 10, 11, 15, 21, 28, 32, 37 had the strongest correlations with age. In both the mothers and fathers analyses, these items primarily loaded on the Involved Parenting (Positive/Involved for mothers) and Poor Monitoring scales. This finding suggests that as children age, certain parental behaviors may become more or less prevalent. One interpretation of this finding is that parents tend to be less involved and engage in less monitoring as their adolescents age. However, an alternate explanation is that certain APQ items may simply be inappropriate for specific age ranges of adolescence. For instance, item 15 asks if

“Your mom/dad drives you to a special activity.” Low endorsement of this particular item in older adolescents may be attributable to the fact that many 16, 17 and 18 year-olds have their own vehicles and no longer rely on their parents for transportation. This explanation would suggest that parents are not necessarily less involved, but rather may show involvement through other avenues such as having friendly talks.

The presence of these strong correlations also has clinical implications. Clinicians utilizing the APQ to inform decision making and treatment planning may be misinformed by a summative or averaged score on the Involved Parenting and Poor Monitoring/Supervision domains when assessing older adolescents. That is, low endorsement of certain items on these scales may deflate the score for that scale, giving the false impression that a parent is not involved with their child or does not engage in adequate supervision and monitoring. Instead, it may be the case that these items are simply inappropriate for that particular age range and should not be included.

Given the significant correlation of several of the APQ items with age, future studies should separate adolescent participants into 2 groups made up of younger and older adolescents (e.g., 6–15 and 16–18 year-olds) and examine the factor structure, assessing specifically for the applicability of certain items to an older adolescent population. Additionally, in the future researchers should look to replicate the current four factor solutions for adolescents using Confirmatory Factor Analysis.

In summary, results of the current study provide important information about the factor structure of the APQ Child Global Report. EFAs performed in this sample show it to be an appropriate instrument for use in a population of 11–18 year-olds, with a factor structure that is very similar to Shelton and colleagues’ five conceptual domains of parenting behaviors. The APQ is able to capture a significant amount of variance in child-reported parent behaviors, which may provide useful information for clinical practice. However, its applicability to a population of older adolescents requires further research, as several specific items may prove to be inappropriate.

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