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Parental Discipline Reactions to Child Noncompliance and Compliance: Association with Parent–Child Aggression Indicators

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Abstract The present investigation examined whether indicators of parent–child aggression (PCA), including two measures of child abuse potential as well as measures of punishment intentions, use of physical aggression with children, and harsh parenting style, were associated with responses to child noncompliance and compliance on an analog task. Prior research suggests abusive parents demonstrate harsh reactions to child noncompliance but results are more mixed on whether abuse risk parents evidence poor response to child compliance. However, the existing research has relied heavily on methods susceptible to participant response distortion. Analog measures evaluate concepts in a manner that is analogous to the behavior of interest in a way that is less subject to distortion. A new analog procedure, the Response Analog to Child Compliance Task, was utilized to determine parental responses to noncompliance and compliance situations. The present investigation involved three parent samples to evaluate parent analog responses to both child compliance and noncompliance. Overall, this investigation supports that parents evidencing greater PCA risk selected harsher responses to noncompliant child behavior, but the findings were more limited regarding parent responses to child compliance. Results from the three samples imply that perhaps those with higher PCA risk may be likely to also show poorer response to compliant child behavior; however, further research is needed with additional high risk samples, preferably adopting alternatives to self-report methods that are less vulnerable to respondent bias.

Keywords Physical discipline · Child maltreatment · Physical abuse · Child abuse potential · Punishment · Parenting · Analog tasks

Introduction

Over 18 % of the 686,000 children who were substantiated for child maltreatment in 2012 were cases involving physical abuse (U.S. Department of Health & Human Services [DHHS] 2013). Yet only a fifth of the 3.4 million reported cases met the rigorous standards for protective services substantiation (DHHS 2010). National surveys routinely underscore that child maltreatment is vastly underreported to protective services, particularly physical abuse (Sedlak et al. 2010). Indeed, some researchers estimate the true prevalence of child abuse to be 5–11 times the number of official reports (Straus et al. 1998).

Predicting the likelihood a parent will become physically abusive, known as one's child abuse potential, is complex. Interpersonal and intrapersonal characteristics, such as rigidity, personal distress, and family problems, have been identified in abusive parents as contributing to one's child abuse potential (Milner 1994). Child abuse potential is associated with more frequent use of harsh physical aggression tactics during discipline encounters (Rodriguez 2010). Respondents scoring high in child abuse potential are also more likely to display coercive parenting styles (Haskett et al. 1995; Margolin et al. 2003). Consequently, physical abuse often arises when parents intensify their application of physical discipline during discipline encounters (Whipple and Richey 1997).

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Given these connections between physical discipline, child abuse potential, and child abuse, parent–child aggression (PCA) behaviors can be conceptualized to occur along a continuum (Greenwald et al. 1997; Rodriguez 2010; Straus 2001; Whipple and Richey 1997). On such a continuum, physical discipline represents one end with child abuse on the other. Excessive, harsh discipline use approaches the abusive endpoint, and child abuse potential estimates the likelihood a parent will progress along this continuum toward that abusive endpoint.

How parents respond in discipline situations is thus critical to understanding child abuse potential. Parents typically use a variety of techniques when administering discipline to secure child compliance, with some speculation that parents do not appear to believe they need to respond to compliant behavior (Kremer et al. 2010). When engaged in protracted episodes of child noncompliance, typical mothers escalate their use of power-assertive strategies as evidenced in both self-reported and experimental simulations (Ritchie 1999). Yet in contrast to comparison parents, a sample of 20 abusive parents endorsed even more power-assertive disciplinary tactics to manage child misbehavior (Trickett and Kuczynski 1986), a pattern also reported in a sample of 30 at-risk mothers (Caselles and Milner 2000). Compared to a matched sample of non-abusive mothers, physically abusive mothers self-report more inclination to punish perceived child misbehavior (Haskett et al. 2006). Harsh reactions to child misbehavior may derive from abuse-risk mothers' reported increased perception that children's behaviors are noncompliant (Dopke et al. 2003) and intentionally annoying (Haskett et al. 2006). Relative to a comparison group, a sample of 15 abusive mothers were observed to respond more quickly and negatively to child noncompliance than non-abusive parents; yet these abusive mothers demonstrated comparable rates of praise for compliance in parent–child interactions (Borrego et al. 2004). A group of 15 abusive and 16 at-risk parents characterized positive reinforcement as more acceptable child behavior management than time-out or spanking, similar to control parents (Kelley et al. 1990). But researchers have historically speculated that abusive mothers demonstrate both power assertive control strategies and less positive strategies in response to child behavior (Oldershaw et al. 1986), with abusive parents displaying more limited positive interactions with their children (Kavanagh et al. 1988).

Collectively, the findings to date suggest parents at higher risk for physical abuse are likely to demonstrate harsher discipline responses to noncompliance. However, whether higher abuse risk also confers a tendency to neglect appropriate responses for compliance is less clear. Nonetheless, a number of intervention and prevention programs strive to simultaneously reduce ineffective disciplinary approaches to noncompliance and enhance positive parenting skills with reinforcement of compliance (e.g., Kumpfer et al. 2010; Letarte et al. 2010; Runyon et al. 2010), highlighting the need to understand parenting approaches for both compliance and noncompliance.

Many of the conclusions drawn from this research, however, are constrained by doubts arising from methodological issues. Researchers utilize protective services agency reports, observational methods, and self-reports to draw their conclusions. But, as noted earlier, the reality is that abuse is often undetected by or unreported to protective services (Sedlak et al. 2010), complicating the use of agency reports. Direct observation of parent–child interactions is a valuable tool but can be subject to reactivity (Tyron 1998); parents potentially adjust how they might typically interact with their child because they are being observed. Self-report strategies have come to dominate research in this field although they are vulnerable to distortion and bias. With self-report, participants may modify their responses, either intentionally or even unconsciously representing themselves in a socially desirable manner. Although such response distortions plague researchers in a wide array of research domains, it is particularly problematic for sensitive areas of research like parent–child aggression (DeGarmo et al. 2006), where the motivation to misrepresent oneself may be more tempting. Namely, parents may be inclined to embellish their reported responses to child noncompliance and compliance behavior.

Querying participants using direct self-report is prone to greater misrepresentation than analog tasks that imitate or approximate the behavior or construct of interest (DeGarmo et al. 2006). Analog tasks can involve behavioral simulations or implicit processes in which the participant is not explicitly or entirely aware of the intent of the task and/or how it is measured or scored (Fazio and Olson 2003). Therefore, analog tasks can minimize participants' response biases through such ambiguity. Analog tasks essentially vary along a continuum with respect to how much the participant may be consciously aware of or able to alter what is being assessed (Fazio and Olson 2003). The more consciously aware of the intent or scoring of a task, or the longer the participant has to consider their response, the more likely the respondent may purposefully select and thus distort their response. For example, if an analog task is more transparent, scores on the analog will demonstrate higher correlations with self-report compared to the lower correlations evidenced by more ambiguous analogs. The goal, therefore, is to design analog tasks that make it difficult for the participant to successfully either surmise the intent of the analog procedure or to make it difficult for the participant to have sufficient time to manipulate their response.

Compared to self-report, relatively few analog tasks have been employed in parent–child aggression research. Some early research used an experimental analog of ten mothers' punitive discipline responses to correct children's mistakes during stress (Passman and Mulhern 1977). Another analog used a video to display child misbehaviors in which participants indicated in real time what their discipline response would be continuously during the video (Fagot 1992). A computerized simulation of child misbehavior in a supermarket also corresponded to observed maternal behavior (Holden et al. 1992). More recently, subliminal processing has been used to study implicit parental attitudes as they may relate to child abuse risk (e.g., Crouch et al. 2010; Farc et al. 2008). Altogether, although a myriad of analog options is not currently available in this field, certainly some researchers have explored the potential of analog strategies to reconsider earlier research questions employing novel approaches.

The Response Analog to Child Compliance Task (ReACCT) is a new analog procedure designed to assess how respondents would react to child compliance behavior, including both noncompliance and compliance. ReAACT attempts to present a realistic simulation of a parent–child situation that would be less obvious than more transparent self-report inventories that have items asking parents to report directly on broad discipline beliefs or behavior. The task involves multiple, interrelated noncompliance scenes that would become increasingly negative and aversive over time compared to single instances of noncompliance (cf. Ritchie 1999).

Three separate parent samples were considered in this investigation, strengthening the external validity of findings. Two samples of parents from the community were included; groups were divided to identify parents who represented high and low abuse risk. These community samples were also supplemented with a third group of high-risk mothers, a clinical sample from mental health clinics given that mental health issues are a recognized risk factor for physical child abuse risk (Stith et al. 2009). Evaluating those at higher risk for abuse across these samples has direct clinical relevance, allowing us to know to what extent findings on compliance and noncompliance can be applied to parent groups of different risk status. Demographic differences for all measures were considered given that younger age and lower socioeconomic status predicts physical child abuse (e.g., Sedlak et al. 2010; Stith et al. 2009).

Therefore, the current investigation considered whether analog scores for noncompliance and compliance on the ReACCT were both significantly related to measures that reflect the parent–child aggression continuum. For the first aim, analog scores for noncompliance were compared to scores on two separate measures of child abuse potential; in addition, because child abuse potential has been linked

with use of physical aggression tactics (Rodriguez 2010), harsh parenting style (Haskett et al. 1995; Margolin et al. 2003) and punishment intentions (Haskett et al. 2006), analog scores were examined in relation to these as well. Thus, ReACCT scores indicative of harsher, more physical discipline responses for simulated child noncompliance were expected to be associated with higher child abuse potential as well as stronger punishment intentions, and harsher parenting and discipline practices. Given that the analog task elicits a parent response, this approach would be a moderately explicit analog strategy that should demonstrate moderate associations with the self-report measures. For the second aim, although the literature is limited and mixed on the connection between abuse risk and reactions to child compliance, harsh analog score responses for compliant child behavior were also predicted to be significantly related to these risk measures. For the third aim, whether noncompliance and compliance were associated with abuse risk particularly for higher risk parents was evaluated.

Method

Participants

Sample 1

This sample included 131 parents recruited from the community for two separate parenting studies in two regions of the country (Southeast n = 94, Mountain West n = 37). Because the recruitment strategy and the selected study materials were comparable between sites, the sample was combined yielding a culturally diverse set of parents. A total of 121 mothers and 10 fathers participated, with a mean age of 36.3 years (SD = 7.6). Approximately 6 % self-identified as Hispanic; of the total sample, 62.6 % identified as Caucasian, 29.3 % as African-American, 4.1 % as Asian, 1.6 % as Native American, .8 % as Pacific Islander, and 1.6 % as Other. Based on both these ethnic/ racial categorizations, participants were divided into two groups for demographic analysis as Minority (40.3 %) versus Non-Minority (59.7 %). Of the total sample, 19.8 % were single parents. In addition, the median annual family income was reported to range from $40–50,000, with one-third of the parents reporting some college or vocational training and just over another third reporting a college degree (12 % reporting high school degree or less).

Sample 2

This sample involved 81 mother-father dyads recruited from the community as part of a larger study of parenting

in couples raising preschoolers ages 3–6. Mothers reported a mean age of 33.9 years (SD = 5.2 years), and fathers reported a mean age of 35.9 years (SD = 7.3 years). In terms of race/ethnicity, the sample of parents was identified as predominantly Caucasian (76.5 % Mothers; 80.2 % Fathers), followed by African-American (19.8 % Mothers; 18.5 % Fathers), with some also identifying as Hispanic/Latino (6.2 % Mothers, 1.2 % Fathers). Again, parents were classified as Minority (26 % Mothers, 21 % Fathers) versus Non-Minority (74 % Mothers, 79 % Fathers). On average, both parents held a 4-year university degree supporting two children with a median annual family income of $50–59,999.

Sample 3

The final sample involved a high-risk group of 34 mothers recruited from mental health centers, where either they or their child were receiving mental health services. This sample is drawn from a larger ongoing study of at-risk parenting because the stressors associated with handling mental health issues in the family are expected to increase abuse risk. Mothers reported a mean age of 37.3 years (SD = 6.2). Nearly 6 % self-identified as Hispanic; of the total sample, 48.5 % identified as Caucasian, 45.5 % as African-American, and 6 % as Other. Based on both these ethnic/racial categorizations, participants were divided into Minority (51.5 %) versus Non-Minority (48.5 %) groups. Of the total sample, 63.6 % were single parents. In addition, the median annual family income was reported as between $20–29,000, with 66.7 % of the sample earning within this range or less. Half of the mothers reported some college or vocational training and another 17.6 % reported a college degree (17.6 % high graduate or less).

Procedures

Sample 1

The Institutional Review Board at the two universities overseeing the parenting studies at each site granted approval for this study. Flyers were distributed at after-school programs recruiting parents of children younger than 10 for a larger parenting study investigating novel approaches to studying parenting beliefs and practices. Participants contacted the research lab if they were interested in scheduling an individual session held at the university. (See below for a description of measures and their abbreviations). All data were collected electronically. Because participants' identification numbers were never attached to their identity, participants could be assured all self-report and ReACCT responses were anonymous. After providing consent, participants completed an unrelated

analog task then proceeded to complete self-report measures (demographics, AAPI-2, CAPI, and PCV). The computer-administered ReACCT was delivered last in the one hour protocol to increase the likelihood of the participant experiencing time urgency and frustration as they engaged in the simulation. Based on their responding on the ReACCT, parents were compensated either $29 or $30 for their participation (see ReACCT description for differential bonus rate).

Sample 2

The university Institutional Review Board granted approval for this larger study of couples' parenting beliefs. Flyers were distributed at preschool programs and local day care centers. Participants contacted the research lab to schedule a 90 min session in their home. All data was again collected electronically and anonymously. Mothers and fathers independently completed all self-report measures first (demographics, AAPI-2, BCAPI, CTSPC, Parenting Scale) with the ReACCT positioned second to last in the 90 min protocol (the bulk of this protocol involved couple relationship variables). Both parents were required to participate in this study and were compensated $60 as a couple (note, this study did not differentially compensate based on ReACCT performance).

Sample 3

The university Institutional Review Board granted approval for this at-risk parenting study. Flyers were distributed at mental health agencies, specifying that either they or their 7–12 year old child (or both) would need to be receiving mental health services to participate in a study examining novel strategies to understand parenting in mental health populations. Interested mothers then contacted the lab to arrange a 60–90 min session in their home. Again, all data were collected anonymously by computer, with the AAPI-2, CAPI, and PCV extracted from the larger study for this analysis, and the ReACCT was again second to last in the protocol (the bulk of this protocol involved mental health issues). Parents were compensated $25 for their participation (no differential amount for ReACCT).

Measures

The Response Analog to Child Compliance Task (ReACCT) is a computerized simulation eliciting discipline reactions. The task was developed for this investigation to evoke a realistic, highly familiar and relevant experience for parents that would facilitate sustained engagement in one hypothetical situation. The respondent is asked to imagine a morning when their alarm does not go

Table 1 Weighted scoring for ReACCT responses

	Initial or escalation non-comply	Unintentional non-comply	Initial or ultimate comply
Praise them	1	1	−3
Explain/reason with them	−1	−1	1
Tell them to figure out their own solution	1	0	1
(Let them back in the house)[a]	−1		
Promise something in exchange (negotiate with them)	−3	1	1
Repeat your request	−1	1	1
Do nothing	1	1	0
Do it for them	1	−1	0
Threaten to remove a privilege or toy	−3	1	3
Yell at them	3	3	3
Swear or curse at them	3	3	3
Threaten to spank them	3	3	3
Hit them on the bottom with an object (belt, brush, etc)	5	5	5
Spank them	5	5	5
Slap them in the face	5	5	5
Slap them on the hand, arm, or leg	5	5	5

Response score values: −3 or −1 = Acceptable or Optimal, 0 = Neutral, 1 = Ineffective or Inappropriate, 3 = Verbal Negative, 5 = Physical Negative

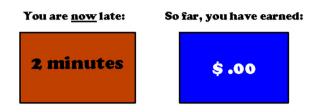[a] Option only available in the final scene

off and they are now running late which requires guiding their child to get ready for school quickly. The task describes 12 scenes, all of them steps in the sequence needed to leave home, their end goal. Some scenes (e.g., getting out of bed) have multiple screens because the child is reportedly noncompliant and thus the parent remains stuck in that scene. Each screen provides the parent with the command they presumably delivered to the child (e.g., finish eating breakfast) followed by an indication of whether the child complied or did not comply with that instruction. After each message indicating the child's response to their command, the parent is asked to select from a list of 15 options (positive, negative, and neutral choices randomly interspersed; one additional response option for the final scene) how they would react to their child to move them toward their end goal (see Table 1, Fig. 1 for example). A comprehensive list of response options was developed by considering other assessments of parental discipline reactions (e.g., Kremer et al. 2010; Russa and Rodriguez 2010; Straus et al. 1998) that would be appropriate for the variety of scenes depicted (e.g., time-out was purposely not included because that would delay the end goal). After the parent selects a response, the subsequent computer screen may continue the scene if the child was depicted as noncompliant or proceed to a new scene if the child was compliant.

Each screen also presents two status boxes: a time delay box and an earnings box. Parents were instructed at the

start of the task that the task would take longer the more difficult it was to get their child ready; the extent of this delay was reflected in the time delay box. Parents were also told that securing quick compliance from their child could earn them up to $5 bonus, depicted in the earnings box. In Sample 1, parent's actual participant compensation was affected by this earning box; in Samples 2 and 3, the earnings box was simply a hypothetical bonus. All ReACCT stimuli were identical across samples. Each time the child did not comply, the subsequent screen displayed one large box advising them the child's noncompliance has added 2 min to how late they now are and another box that indicated their earnings are unchanged because they are no closer to their end goal. If instead the child complied, the time clock remained unchanged but their earning box was incremented by 50 cents (see Fig. 1 for sample screen). All parents actually see the same sequence of scenes with commands and depicted compliance/noncompliance with one exception: in the final scene, selecting a physical discipline response adds an additional screen in the sequence and further time delay. This meant the earning box maximum bonus of $4 appeared, with an extra 2 min delay increment for those selecting that response to the final scene; otherwise, participants selecting a non-physical discipline response saw a $5 bonus box without time increment. Overall, this analog task was designed to parallel realistic challenges parents face during times when running late is stressful, inconvenient and potentially costly

You ask your child to get out of bed.

You leave your child and come back to find your child still sleeping in bed.

You are now late: **So far, you have earned:**

2 minutes   **$ .00**

(Pick one of the following when you make a decision)

Would you...

1. Do nothing
2. Yell at them
3. Threaten to spank them
4. Tell them to figure out their own solution
5. Praise them
6. Hit them on the bottom with an object (belt, brush, etc.)
7. Explain/reason with them
8. Spank them
9. Do it for them
10. Slap them in the face
11. Swear or curse at them
12. Promise something in exchange (negotiate with them)
13. Slap them on the hand, arm, or leg
14. Repeat your request
15. Threaten to remove a privilege or toy

(press enter when finished)

Fig. 1 Sample computer screen in the ReACCT analog

(e.g., running late to work). The intention was that failure to make timely progress toward the end goal evokes time urgency and frustration, which could interfere with their ability to distort their responses.

Altogether, the ReACCT task displays a total of 20 steps that elicit scored parent discipline responses: 6 responses to intentional initial child noncompliance; 3 responses to escalated, persisting noncompliance; 3 responses to unintentional child non-compliance (situations in which the child cannot reasonably comply, such as a command to finish their cereal when there are no spoons in the drawer); 5 responses to children who ultimately complied after initial noncompliance; and 3 responses to children who initially comply. Parents who elected a physical response in the last scene do provide an additional response to that scene but in order to maintain consistent total items across participants, the 20 scenes that are standard across all participants were summed and analyzed. Scores selected for analysis were responses on noncompliance total (includes 12 intentional and unintentional noncompliance), and compliance total (including 8 initial and ultimate compliance). Although a score with solely intentional noncompliance yielded slightly stronger results in some areas (results available upon request), the more

comprehensive measure of all noncompliance items in noncompliance Total are presented below for completeness. Across samples, internal consistency was acceptable for the Compliance Total (range α = .66–.82) and for the Noncompliance Total (range α = .66–.85).

In terms of scoring, basic behavioral principles of child behavior management (e.g., O'Leary 1995; Shriver and Allen 2008; Webster-Stratton 1992) guided what was considered a more productive approach to a command in this specific scene. Item weights were assigned by three independent clinical child psychologists, with high reliability, with an ICC = .97. Raters selected weight scores associated with one of five category options: those considered either optimal approaches or at least acceptable; neutral, where the response was not clearly problematic; ineffective approaches that could potentially be detrimental or inappropriate for the situation; verbal negative strategies in which the parent engages in power assertion through verbal means; and all physically assertive discipline tactics (see Table 1). Final weights selected were those ratings assigned by the majority of the raters and through consensus. For example, generally for non-compliant behavior, reasoning or negotiation might be considered more adaptive whereas doing nothing in response to child noncompliance would be largely ineffective toward reaching this particular end goal and yelling or spanking would be considered negative; in other words, the scores were selected by raters based on this particular time-urgent situation. All possible scores are provided in the grid for completeness, should a participant select that category, and because some parents may be frustrated and thus react harshly even when the child is finally becoming compliant. Higher scores on the ReACCT reflect poorer discipline choices for both compliance and noncompliance. ReACCT elicits a parent response (an explicit process) but the simulation may invoke frustration, simulate motivation (bonus), and would be difficult to track for initial versus ultimate noncompliance/compliance, thus representing a moderately ambiguous analog.

The *Child Abuse Potential Inventory* (CAPI; Milner 1986) is a well-known instrument designed to screen for physical child abuse risk, evaluating rigidity and interpersonal and intrapersonal qualities identified in substantiated abuse perpetrators; the CAPI does not, however, typically include explicit questions regarding parenting or discipline beliefs. Respondents indicate whether they agree with 160 statements, although only 77 are variably weighted to contribute to an Abuse Scale total score. Higher scores on the CAPI Abuse Scale suggest greater child abuse potential. Psychometric evidence for the CAPI confirms high internal consistency for the Abuse Scale (Milner 1986), and studies also indicate CAPI scores demonstrate predictive validity, with a correct classification rate of 89.2 % of

confirmed child abusers and 99 % of controls (Milner 1994). A brief version of this measure (BCAPI) is also available, with 34 items extracted from the original CAPI, which was administered in Sample 2; this brief version demonstrates strong internal consistency ($\alpha = .89$) and strong correlations with the full CAPI Abuse Scale ($r = .96$; Ondersma et al. 2005). Sample 2 evidenced good reliability for the BCAPI unweighted scores: $\alpha = .80$ for mothers and $\alpha = .78$ for fathers.

The *Adult-Adolescent Parenting Inventory-2* (AAPI-2; Bavolek and Keene 2001) is a self-report measure of parenting and child-rearing attitudes characteristic of abusive and neglectful parenting. This measure has been conceptualized as a measure of parenting beliefs associated with child abuse potential (Conners et al. 2006) with 40 items rated on a five-point Likert scale. Scoring on the AAPI-2 is oriented such that *high* AAPI-2 Total scores suggest *low* risk attitudes and thus lower child abuse potential. A psychometric evaluation of the AAPI-2 (Conners et al. 2006) reported good internal consistency for the AAPI-2 Total score ($\alpha = .85$). Across samples in this investigation, the AAPI-2 demonstrated good internal reliability: Sample 1, $\alpha = .84$; Sample 2 mothers, $\alpha = .90$, Sample 2 fathers, $\alpha = .89$; Sample 3, $\alpha = .90$.

The *Plotkin Child Vignettes* (PCV; Plotkin 1983), an unpublished measure, has been used to assess expected punishment response to child misbehavior with abusive parents (Haskett et al. 2006) and abuse-risk samples (Azar et al. 2013). Parents report on their attributions and punishment intentions to 18 brief vignettes where the parent is asked to imagine the situation occurred with their own child. Of particular interest to the current study were the PCV Punish scores, in which parents indicated how much they would punish their child because of the situation, from 1 ("I would not punish my child at all") to 9 ("I would punish my child a great deal"). This score was included as a measure of punishment intentions, with higher PCV Punish scores indicative of greater willingness to punish. Previous research has suggested that abusive parents expect to implement more punishment than comparison parents, with reported internal consistency at .83 for the PCV Punish scores (Haskett et al. 2006). In Sample 1, PCV Punish scores demonstrated good reliability, $\alpha = .83$; in Sample 3, PCV Punish scores also evidenced strong reliability, $\alpha = .87$.

The *Parenting Scale* (Arnold et al. 1993) presents 30 items of typical parent–child conflict situations and asks parents to indicate their typical response to the situation along a 7-point scale, with two opposing reactions at the endpoints of each scale. In assessing dysfunctional parenting style, three approaches were identified, with the 10-item Overreactivity scale of most interest in this investigation (representing a harsh, angry discipline style, consistent with an authoritarian parenting style). An average score is derived from participant responses, with higher scores indicative of greater dysfunctional parenting. Internal consistency is reported as .82 for the Overreactivity scale and scores were significantly related to clinical observations of parent–child interactions (Arnold et al. 1993). Sample 2 mothers also showed acceptable reliability, $\alpha = .79$, as did fathers, $\alpha = .79$.

The *Parent–Child Conflict Tactics Scale* (CTSPC; Straus et al. 1998) provides 22 potential tactics that may be used to respond to parent–child conflicts. Parents indicate the frequency with which they utilized these tactics in the past year, with possible response categories as follows: 0 = never happened; 1 = once; 2 = twice; 3 = 3–5 times; 4 = 6–10 times; 5 = 11–20 times; 6 = more than 20 times. Responses are scored based on the frequency range in which responses of 0, 1, and 2 correspond to scores of 0, 1, and 2, respectively; a score of 4 (the midpoint) is assigned for the 3–5 times category; a score of 8 is assigned to the 6–10 times category; a score of 15 is assigned for the 11–20 times category; and a score of 25 is given for the final category, 20 or more times in the past year. Thirteen CTSPC items directly address a wide range of physical tactics with children, such as spanking or burning, comprising a subscale entitled Physical Assault. Straus et al. (1998) report moderate internal consistency and support for construct and discriminant validity. Despite the highly variable parent behaviors assessed in the CTSPC Physical Assault subscale, Sample 2 mothers' and fathers' scores showed acceptable reliability ($\alpha = .70$ and $\alpha = .74$, respectively).

Results

For the CAPI, the community sample of parents in Sample 1 obtained a mean CAPI Abuse Scale score comparable to the reported normative group ($M = 91.0$; Milner 1986); similarly, the community sample of parents in Sample 2 were well below the BCAPI clinical cutoff score of 9 (Ondersma et al. 2005). In contrast, as would be expected, the at-risk mothers of Sample 3 obtained a sample mean well above the recommended cut-off of 166 (see Table 2). The AAPI-2 Total, which assesses parenting attitudes consistent with abusive parenting, yielded scores relatively comparable across all samples and within normal limits (e.g., approximately $M = 152$ for mothers; Bavolek and Keene 2001). No clinical comparative information is available for the remaining measures. However, note that the ReACCT scores are considerably higher in the at-risk sample of mothers in Sample 3 relative to the other groups.

With regard to parent gender differences, for Sample 2 couples, paired sample t-tests indicated fathers obtained

Table 2 Means, standard deviations, and correlations

	M (SD)	ReACCT Noncompliance Total (r)	ReACCT Compliance Total (r)			
Sample 1				*CAPI*	*PCV*	
AAPI [a]	153.89 (16.06)	-.46***	-.08	-.39***	-.43***	
CAPI	87.15 (77.20)	.30***	.09		.28***	
PCV	39.46 (12.32)	.51***	.25**			
ReACCT M(SD)		-1.72 (11.81)	-8.23 (9.35)			
Sample 2-Mothers				*BCAPI*	*CTSPC*	*PS*
AAPI	155.68 (16.75)	-.49***	-.28*	.24*	.36***	.38***
BCAPI	3.37 (3.41)	.25*	-.05		.10	.22*
CTSPC Physical	9.17 (15.26)	.45**	.14			.20
PS Overreactivity	24.41 (7.23)	.29**	.10			
ReACCT M(SD)		-5.63 (11.06)	-12.62 (7.30)			
Sample 2-Fathers				*BCAPI*	*CTSPC*	*PS*
AAPI	143.12 (16.98)	-.42***	-.27*	.42***	.33**	.16
BCAPI	4.44 (3.39)	.28**	.01		.27*	.29**
CTSPC Physical	11.17 (20.47)	.38**	.01			.26*
PS Overreactivity	24.73 (7.72)	.09	.04			
ReACCT M(SD)		-5.37 (11.75)	-11.44 (9.14)			
Sample 3				*CAPI*	*PCV*	
AAPI	149.22 (22.49)	-.46**	-.41**	-.38**	-.61***	
CAPI	230.50 (127.01)	.31*	.02		.47**	
PCV	42.79 (15.51)	.29*	.19			
ReACCT M(SD)		5.00 (16.96)	-4.29 (10.99)			

AAPI-2 Adult-Adolescent Parenting Inventory-2, *CAPI* Child Abuse Potential Inventory, *PCV* Plotkin Child Vignettes, *BCAPI* Brief CAPI, *CTSPC* Parent–Child Conflict Tactics Scale Physical Assault, *PS* Parenting Scale Overreactivity, *ReACCT* Response Analog to Child Compliance Task

[a] High AAPI-2 scores are indicative of lower abuse risk

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

higher BCAPI Total scores, $t(80) = -2.85$, and AAPI-2 Total scores, $t(80) = -6.68$, $p \leq .001$, than mothers, but no other gender differences were observed on the CTSPC, Parenting Scale Overreactivity, or ReACCT scores. Parent age was unrelated to any outcome measures in Sample 1 or in Sample 2 mothers. However, younger fathers in Sample 2 obtained significantly higher CTSPC and ReACCT Noncompliance scores than older fathers. For Sample 3, younger mothers obtained higher AAPI-2 Total, PCV Punish, and ReACCT scores.

For Sample 1, parental income and educational level were significantly associated with the two measures of abuse potential but not with PCV Punish or ReACCT analog scores. For Sample 2 mothers, lower income was related to higher child abuse potential scores and ReACCT Noncompliance scores, but not CTSPC, Parenting Scale

Overreactivity, or ReACCT Compliance scores; more educated mothers obtained lower child abuse potential scores but educational attainment was unrelated with CTSPC, Parenting Scale Overreactivity, or ReACCT scores. For Sample 2 fathers, income was significantly associated with AAPI-2 Total scores, CTSPC scores, and ReACCT scores, but not BCAPI or PS Overreactivity scores; Sample 2 fathers' educational attainment was associated with AAPI-2 Total and ReACCT analog scores, but not with BCAPI Total or CTSPC scores. Finally, for Sample 3, lower income and education were associated with mothers' child abuse potential on both measures, as well as with ReACCT scores, but only modestly with PCV scores.

Differences were evident based on race/ethnicity. For Sample 1, parents categorized as Minority obtained significantly higher child abuse potential scores on the AAPI-2 and

CAPI, and ReACCT analog scores, but not on the PCV. For Sample 2, Minority mothers obtained higher AAPI-2 and CTSPC scores as well as higher ReACCT Noncompliance scores, but not higher BCAPI or ReACCT Compliance scores. Sample 2 Minority fathers obtained higher abuse risk scores on the AAPI-2 and higher ReACCT analog scores, but not higher BCAPI, CTSPC, or Parenting Scale scores. For Sample 3, only the AAPI-2 evidenced this discrepancy, with Minority mothers evidencing higher risk.

To address Aim 1, across samples the responses to ReACCT Noncompliance scenes were associated with various indicators of PCA, including both measures of child abuse potential (CAPI Abuse Scale, AAPI-2 Total), reported physical assault tactics with children (CTSPC), and propensity to punish perceived child misbehavior (PCV) (see Table 2). Only mothers, not fathers, in Sample 2 evidenced the association that self-reported overreactive disciplinary style on the Parenting Scale was associated with ReACCT responses to child noncompliance. Yet the pattern of PCA indicators' association with ReACCT Compliance scores was not systematically evident, as predicted for Aim 2. Primarily parents' poorer reactions to compliance behavior were related to AAPI-2 Total scores, a self-report measure that most strongly assesses parenting beliefs (unlike the CAPI). Across samples, reactions to noncompliance and compliance scenes on ReACCT were significantly interrelated: $r = .39$, $p < .001$ in Sample 1, $r = .48$, $p \leq .001$ for Sample 2 Mothers, $r = .26$, $p \leq .05$ for Sample 2 Fathers, and $r = .47$, $p < .001$ for Sample 3 mothers.

Incidentally, the magnitude of correlations with PCA indicators was strongest for ReACCT Noncompliance upon initial request and ReACCT ultimate Compliance (after a repeated request). In other words, parents selected the harshest responses on the ReACCT when the child initially did not comply, rather than when the child persisted in noncompliance; moreover, parents selected harsher responses when the child ultimately complied after initial noncompliance compared with initial compliance (results available on request). Also see Table 2 for correlations among the indicators of PCA (note some differences between mothers and fathers in Sample 2).

For Aim 3, the PCA measures were dichotomized for Samples 1 and 2 into risk groups. Such analyses compare those at greatest clinical PCA risk, who would be of most concern to professionals, to those who represent minimal risk (such analyses are not relevant to Sample 3, which is already an at-risk sample). Risk groups were created using highest and lowest quartiles for the PCA measures. Group analyses are statistically comparable to correlations using the extreme ends of the distribution; thus not surprisingly, the results largely mirrored the correlation patterns. Highest CAPI (or BCAPI) scorers (equivalent to their clinical cut-off scores) selected harsher responses for noncompliant

behavior but not compliant behavior across samples. Respondents with high risk AAPI-2 Total scores also were significantly harsher on noncompliance across samples but only higher for compliant behavior among Sample 2 mothers. In Sample 1, those participants who were the most inclined to punish on the Plotkin Child Vignettes were also significantly harsher on noncompliance and compliance. For Sample 2 mothers only, higher Parenting Scale scorers selected harsher responses for noncompliance but not compliance. A notable exception to the pattern of correlation findings: higher CTSPC scoring mothers in Sample 2 were harsher for noncompliant scenes, $t (41) = -4.67$, $p \leq .001$, but also harsher for compliant behavior, $t (41) = -2.31$, $p \leq .05$; high CTSPC scoring fathers in Sample 2 were harsher for noncompliant but not compliant behavior. These risk group analyses for the two community samples thus echo some of the findings observed in the identified risk group of Sample 3.

Discussion

The present investigation evaluated whether parents exhibiting higher risk on a variety of indicators of PCA would demonstrate harsher responses to both child noncompliance and compliance. Traditionally researchers have relied on self-report measures to assess important constructs in PCA research, which are limited because of the potential for participants to distort their responses (DeGarmo et al. 2006). A new analog procedure, the Response Analog to Child Compliance Task (ReACCT), designed to assess harsh discipline decisions to child compliance and noncompliance, was administered to three different parent samples. Clarifying how abuse risk relates to potential discipline reactions can inform how prevention and intervention program address parents' responses to discipline. Overall, the evidence from the current study suggests that harsher responses to child noncompliance were indeed associated with greater child abuse potential, stronger punishment intentions, and harsher parenting style and discipline practices; however, the evidence was more mixed with regard to poorer parental responses to child compliance.

Some prior research has suggested abusive parents are inclined to respond negatively to noncompliant child behavior (e.g., Borrego et al. 2004). However, such research has also been mixed with respect to abusive parents' responses to child compliance, in which some propose abusive parents respond positively to compliance comparable to non-abusive parents (Borrego et al. 2004), whereas others suggest poor positive parenting strategies are evident in abusive mothers (Oldershaw et al. 1986). Results from the current investigation using the ReACCT

analog task are more nuanced. Most consistently, across samples, harsher discipline responses to noncompliance on the analog task were associated with a variety of indicators of parents' PCA risk, supporting the interpretation that more at-risk parents are more likely to react harshly to child noncompliance (Aim 1).

However, in considering Aim 2, analog responses to compliance were less consistent. The first community sample evidenced a relation between self-reported punishment intentions and response to child compliance. The second community sample, for both mothers and fathers, did find an association with abuse risk (as measured by the AAPI-2) with analog scores for compliance. The AAPI-2 is a measure with clearer content on parenting beliefs than what is considered in the CAPI (or BCAPI), whose scores are more heavily influenced by mental health concerns. Notably, this association between compliance reactions and the AAPI-2 was particularly strong for the at-risk sample. Moreover, the subgroup analyses in Sample 2 also indicated that the highest risk mothers on the CTSPC Physical Assault did obtain significantly higher ReACCT compliance scores as well. This suggests that poor response to compliance behavior may be exceptionally problematic for high risk parents. Thus, a direction for future research would directly consider whether the response to child compliance is problematic for other high risk groups as well as substantiated abusive parents. Future research clearly needs to continue to investigate this possibility given that some intervention programs operate on assumptions that positive parenting skills are lacking.

Many of the measures of child abuse potential and PCA indicators differed based on sociodemographic elements such as younger age, lower income, lower educational level, and minority status, all risks previously observed in child maltreatment cases (Sedlak et al. 2010). Earlier research has identified income and educational level as risk factors in child abuse (e.g., Merritt 2009; Sedlak et al. 2010); such research has also observed ethnic/racial differences in parenting behavior (Hawkins et al. 2010), indicating African–American parents engage in more spanking (MacKenzie et al. 2001) and harsher discipline (Pinderhughes et al. 2000). Possibly race/ethnicity elevates abuse risk because limited educational opportunities (and the concomitant effect on income) interferes with exposure to alternative responses to child behavior, both noncompliant and compliant. Although such demographic effects were not central to the current investigations' research questions, moving forward, future research questions need to continue to consider whether these sociodemographic groups would benefit from direct guidance on how to address both noncompliant and compliant child behavior.

Some comments regarding methodology are also worth noting. The CAPI (and the BCAPI) typically includes minimal reference to parenting or discipline behaviors; this may explain why it was not consistently related to the other PCA risk measures, including the CTSPC which directly measures abusive behavior. The AAPI-2 abuse potential measure does explicitly assess parenting beliefs and was significantly related to a number of other PCA risk measures, highlighting the potential utility of the AAPI in estimating discipline responses. Yet both the CTSPC and AAPI are very transparent measures. In contrast, the ReACCT scores were associated with the array of PCA risk measures. By utilizing an analog measure of parental reactions to child noncompliance and compliance behavior, the current investigation extends prior literature that relied on methods vulnerable to distortion, a body of work hampered by methodological doubts surrounding existing interpretations. The present findings support that the ReACCT may be able to more indirectly gauge parents' discipline approach, with acceptable reliability for both noncompliance and compliance, and associations with all of the PCA risk measures. However, the extent to which participants found the task frustrating would be useful as part of an effort to determine whether such frustration can interfere with efforts to distort responses. Some additional next steps under consideration are being considered for the ReACCT: alternative discipline response options may be included, like providing more positive response options (e.g., positive physical touch, such as a hug) and adjusted options (e.g., warning of loss of privilege versus actually removing a privilege). One caveat to recall is that as the task increases in its degree of ambiguity, correlations with more explicit self-report measures diminish. This version of the ReACCT is moderately explicit. Overall, the development of such analog approaches can complement conventional methods to provide an alternative perspective to measuring a construct of interest.

Some strengths and limitations in the present study are worth noting. Nearly all of the reviewed research on abuse risk and discipline behavior has involved mothers despite repeated calls to include fathers in this area (e.g., Stith et al. 2009); thus, the second sample included in this investigation was equally represented by mothers and fathers. Nonetheless, more work with fathers is clearly needed, particularly given some of the differences observed in Sample 2 in terms of BCAPI and Parenting Scale findings (especially new research including a sample of at-risk fathers would be ideal). This investigation strengthened its external validity by including three different samples, several with considerable diversity. But as noted earlier, more in-depth investigation with socioeconomically diverse parents to consider their experience of discipline options for compliance as well as noncompliance would be instructive. Moreover, given the findings for Aim 3, parents evidencing varied levels of risk along the PCA continuum,

and importantly at the higher risk portion, would further clarify the response to compliance behavior in particular. Comparison of ReACCT responding to compliance and noncompliance with other analog tasks (rather than the collection of self-reports utilized in this study) as well as with directly observed parenting could also prove useful methodologically. Furthermore, although the ReACCT was positioned toward the end of the study protocols, it was still administered on the same occasion as the other PCA risk measures; administering them at separate sessions would clarify if the findings are retained even when these assessments are not grouped together.

As the field continues to attempt to understand how parents' physical discipline decisions go awry to become physically abusive, alternative assessment tools can facilitate our understanding of critical research questions. Although valuable and unique information can be gleaned from agency reports, direct observation, and self-report, questions about potentially misrepresented or skewed information from conventional sources will continue to permeate the discussions of researchers' limitations. With greater sophistication in modeling the variety of paths leading to physical child abuse, more comprehensive, inclusive approaches to assessing a given risk factor may lend us confidence in which aspects to best target for intervention and prevention programming. Such programming would benefit from a deeper understanding of the nature of parents' responses to both noncompliant and compliant child behavior, as we hope to intervene along the PCA continuum to prevent the emergence of physical child abuse.

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