

THE BELIEFS ABOUT PVA HARM SURVEY: TESTING THE FACTOR
STRUCTURE, VALIDITY, AND RELATIONSHIP TO USE OF
PARENTAL VERBAL AGGRESSION AND STRESS

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A Dissertation

Submitted to

the Graduate Faculty of

Auburn University

in Partial Fulfillment of the

Requirements for the

Degree of

Doctor of Philosophy

Auburn, Alabama
December 19, 2008

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VITA

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DISSERTATION ABSTRACT

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Doctor of Philosophy, December 19, 2008
(M.S., Auburn University Montgomery, May 10, 2003)
(B.A., Auburn University, 2000)

203 Typed Pages

Directed by Francesca M. Adler-Baeder

Recent prevalence data indicate that parental verbal aggression (PVA) (e.g., yelling/screaming, threatening to hit, swearing, insulting, and threatening to send away) is used by a majority of parents at one time or another while their children are under the age of 18. This widespread use suggests that PVA is an acceptable parental behavior; however, acceptable parental behaviors can still cause harm to children. PVA is often overlooked by researchers unless it co-occurs with other forms of parental aggression, particularly ones that have reached abusive levels. Consequently, there is limited knowledge to provide an understanding of what contributes to the use of PVA. Beliefs about parental aggression have been linked to parents' use of parental physical aggression

(PPA); however, no studies have examined the belief-behavior link for PVA. The purpose of this study was (1) to validate ‘beliefs about PVA harm’ as a distinct construct, and (2) to refine the factor structure and evaluate the reliability and validity of the Beliefs about PVA Harm Survey (BPHS) – an instrument developed to assess parents’ beliefs about the extent to which PVA causes harm to children.

The BPHS was designed to elicit research knowledge about parents’ cognitions about use of PVA and to enhance programmatic work with parents. Utilizing a sample of 373 parents, this study involved evaluations of the measurement and validation of beliefs about PVA harm. The refined instrument consists of an 8-item *Beliefs about Ordinary PVA Scale* and a 20-item *Beliefs about Severe PVA Scale*. Tests of external validity provided support for both the construct validity and the concurrent validity of the two scales through an examination of the pattern of relationships with theoretically and empirically relevant variables (e.g., use of PVA, use of PPA, general aggression, parental stress, social desirability). Evidence supports ‘beliefs about PVA harm’ as a distinct construct, and both beliefs about ordinary PVA and beliefs about severe PVA uniquely contribute to the explanation of the variance in use of PVA. Results indicate parent gender differences in the relationships between beliefs, parental stress, and use of PVA.

This study of the BPHS represents the first effort to empirically validate a measure of parents’ beliefs about PVA harm. The BPHS can facilitate future investigations of this construct with regard to the belief-behavior link for PVA, as well as the causes and consequences of beliefs about PVA harm. Practical applications include raising awareness among parents of their beliefs, as well as providing a tool for parenting educators to use to assess parents’ beliefs about verbal aggression.

ACKNOWLEDGEMENTS

The author would like to express tremendous gratitude to Dr. Francesca Adler-Baeder for her direction and guidance given throughout every phase of this research. Appreciation also is expressed to Alex, Leanne, and Tommy for the feedback that they provided along the way, as well as their support and encouragement. All of the parents who took time to complete the survey for this study are greatly valued for their willingness to help, as the completion of this dissertation would not have been possible without their assistance. Thanks also are due to my parents for their incredible support during not only the time of this work, but also throughout my educational journey. Finally, I am especially grateful to Jesus Christ for leading me through each step of this project, as well as every day of my life.

Style manual used: Publication Manual of the American Psychological Association, Fifth Edition.

Computer software used: Microsoft Word, SPSS 15.0, AMOS 7.0

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INTRODUCTION

Parental verbal aggression, PVA, involves communicative verbal acts, including yelling/screaming, threatening to hit, swearing, insulting, and threatening to send away, that are directed toward the child and range in harshness from mild to severe (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). Currently, there is an inadequate understanding of what factors explain the level of PVA use specifically, as well as other types of psychological aggression that are more indirect in nature (i.e., psychological control and symbolic/nonverbal aggression) (e.g., Black, Smith Slep, & Heyman, 2001; Straus & Field, 2003). This inadequacy stands in stark contrast to the plethora of information regarding factors related to the use of parental physical aggression (PPA), which involves physical force directed towards a child (e.g., Kaplan, Pelcovitz, & Labruna, 1999). The focus of this study is on deepening the understanding of what contributes to the use of PVA through the development of a measure to assess a potentially key factor, namely parents' beliefs about PVA harm, that may contribute to the explanation of its use.

Part of the reason past research has not advanced the understanding of the use of PVA is due to the heavy reliance on clinical samples of families reported for child maltreatment, thereby limiting the knowledge about PVA unless it co-occurs with child physical abuse (Claussen & Crittenden, 1991; Hart, Brassard, & Karlson, 1996; NCCANI, 2005; Schneider, Ross, Graham, & Zielinski, 2005; Thompson & Wyatt,

1999). In the few studies that have included community samples, indications are that PVA is very likely to be found outside of reported cases (e.g., Claussen & Crittenden, 1991; Kaplan et al., 1999). Recent prevalence data (Hemenway, Solnick, & Carter, 1994; Straus & Field, 2003; Straus et al., 1998; Vissing, Straus, Gelles, & Harrop, 1991) from nationally representative samples further demonstrates that PVA can be readily studied in the general population. Specifically, Vissing and colleagues (1991) found that 63% of the 3,346 parents in their sample used at least one form of PVA (e.g., swearing, insulting, threatening to hit) in the previous year, with an average of 12.6 acts of PVA during that year. Furthermore, while parents' PVA use ranged from 1 act to more than 20 acts, over one-third (37.4%) reported 11 or more acts of PVA. More recently, Straus and Field (2003) found that between 90% and 98% of the 991 parents (depending on their child's age) in their nationally representative sample used at least one form of PVA during the preceding year. These prevalence studies demonstrate PVA in general is used with children of all ages, but it is more likely with children age 7 and above (Straus & Field, 2003; Vissing et al., 1991). Furthermore, the specific forms of PVA used differ by child age, with some acts increasing as children age (e.g., swearing or cursing at a child) while other acts decrease (e.g., threatening to spank or hit) (Straus & Field, 2003).

The above prevalence studies indicate that PVA use is widespread by parents in the general population and that levels of use vary. However, even when it is not severe enough to warrant investigation, PVA may still harm children (Claussen & Crittenden, 1991; Hart et al., 1996; Schneider et al., 2005). Findings from retrospective research indicate that a childhood history of PVA is more predictive than other parental aggression of low self-esteem, depression, and general adjustment problems in adulthood (e.g.,

Briere & Runtz, 1990; Gross & Keller, 1992; Higgins & McCabe, 2003). Further research demonstrates an association of childhood PVA with dysfunctional attitudes and negative cognitive styles in adulthood (Gibb et al., 2001; Gibb, Alloy, Abramson, & Marx, 2003; Gibb, Abramson, & Alloy, 2004; Gross & Keller, 1992; Moll, 1992). In addition to these retrospective findings, evidence from prospective research suggests even moderate levels of PVA use, apart from the use of PPA, can result in the following child outcomes: internalizing and externalizing behaviors, social impairment, low self-esteem, and poor academic performance (e.g., McGee, Wolfe, & Wilson, 1997; Solomon & Serres, 1999; Vissing et al., 1991).

In light of the potential for harm from PVA and the widespread use of PVA, research is needed to gain understanding of what contributes to its use. Practical implications can be derived from developing a greater understanding of what leads parents to use PVA. Importantly, while measures exist to assess risk for PPA, such as the Child Abuse Potential Inventory (Milner, 1986), there is not currently a measure that allows the assessment of risk for use of PVA. Therefore, a first step in understanding PVA and its correlates is the development of a standardized measure of PVA risk. To develop such a measure, the factors contributing to the explanation of PVA use need to be explored.

For conceptualizing a model, we look to related literature on other forms of parental aggression. Flynn (1998) argues that an understanding of beliefs about the appropriateness of parental aggression is important for explaining the use of such behavior. In recent years, attention has been given to the belief-behavior link for PPA. For example, research findings suggest that beliefs about the appropriateness or

effectiveness of spanking are related to parents' use of spanking (e.g., Holden, Coleman, & Schmidt, 1995; Jackson et al., 1999; Socolar & Stein, 1995; Vittrup, Holden, & Buck, 2006). This belief-behavior link in PPA will be discussed in more detail in the next chapter. Importantly, no published studies were found that examine this link for PVA, or even closely related constructs like that of psychological control.

While empirical support for this belief-behavior link is limited to evidence related to other types of parental aggression, the basis for expecting this link for PVA is grounded in theory. A direct link between beliefs about PVA harm and levels of PVA use is supported by the tenets of social-cognitive-behavioral theory (Crosbie-Burnett & Lewis, 1993). A main tenet of this theory is that beliefs, ideas, perceptions, attributions, attitudes, and knowledge all work together to influence a person's behaviors. Consequently, in applying this theory to the parenting role, parents have beliefs about parenting that influence their behavior towards their children. More central to the foundation of the current study, parents have beliefs about when harm could come from using PVA, and those beliefs influence the extent to which they use it with their own children. The empirical support for the role of beliefs in the use of other parental aggression, combined with this theoretical support, suggests the need to examine beliefs about PVA harm.

In order to examine beliefs about PVA harm, a measure, the Beliefs about PVA Harm Survey (BPHS), has been developed. After a review of the applicable theories and empirical literature related to both the study of beliefs and use of PVA, two distinct, yet related, scales, *Beliefs about Ordinary PVA* and *Beliefs about Severe PVA* were created. Flynn's (1998) findings that beliefs about PPA differed by child age group led to the use

of four referent age groups – early childhood, middle childhood, early adolescence and mid-adolescence – to assess beliefs specific to age range. The BPHS allows the assessment of the threshold of PVA use at which parents believe PVA becomes harmful for these specific age groups of children. The scale structure captures the dimension of severity for PVA use by having 2 distinct, yet related, scales, *Beliefs about Ordinary PVA* and *Beliefs about Severe PVA*, developed to mirror distinctions in levels of severity for acts of PVA. The frequency of PVA acts is incorporated into the BPHS through parents' stated threshold of the point at which they believe harm occurs to children from use of each act of PVA. For example, parents indicate the least amount of times over a one month period that they believe yelling could be harmful to a child.

In order to establish that 'beliefs about PVA harm' is a distinct conceptual construct and that the BPHS is a valid measure of this construct, this study includes measures of other constructs to permit the assessment of both construct validity and concurrent validity. Construct validity of a measure is defined as, "the extent to which the test may be said to measure a theoretical construct or trait" (Anastasi & Urbina, 1997, p. 126). Evidence of convergent validity and discriminant validity are both required in order to establish construct validity, and they are assessed by investigating the pattern of relationships among conceptually related constructs (DeVellis, 2003; Spector, 1992). It was expected that the pattern of correlations would show evidence of both convergent and discriminant validity in that 'beliefs about PVA harm' would be most closely related to other beliefs (i.e., belief in corporal punishment, rigid expectations of children), moderately related to parental aggression (i.e., use of PVA), less related to general aggression tendencies, and unrelated to parental stress and social desirability.

Further examination of the relationship between beliefs about PVA harm and use of PVA occurred through tests of concurrent validity. Tests of concurrent validity involve simultaneously collecting data on the scale of interest and on criteria (i.e., use of PVA), and, then, testing the extent to which the score on the scale is associated with the dependent variable (John & Benet-Martinez, 2000; Spector, 1992). In assessing concurrent validity, it was important to examine the potential complexity of the relationship between beliefs about PVA harm and use of PVA, and, in doing so, consider the effects of other contextual factors (e.g., parental stress, child age, child gender, family type, race, SES, parent gender, use of PPA) that may influence the use of PVA.

Reviews of the parenting stress literature indicate theoretical and empirical support for the experience of stress as a major determinant of parental aggression (e.g., Coohy & Braun, 1997; Farrington, 1980; Hillson & Kuiper, 1994; NRC, 1993; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). Theoretical explanations provide additional support for examining parental stress in concurrent validity tests as a moderator of the link between beliefs about PVA harm and use of PVA. The integration of stress theory (Farrington, 1980) with social-cognitive-behavioral theory (Crosbie-Burnett & Lewis, 1993) would suggest an interaction between beliefs about PVA harm and parental stress levels, such that higher levels of stress may affect the parents' ability to act in ways consistent with their beliefs. Some empirical evidence further indicates that parental stress could serve as a moderator of the belief-behavior link (Schellenbach, Monroe, & Merluzzi, 1991; Vittrup et al., 2006). For example, Schellenbach et al. (1991) found evidence of an interaction between stress and cognitive evaluations of children's behavior to produce more negative verbal reactions to positive child behavior when under

high stress. More recently, Vittrup et al. (2006) suggest that stress can interrupt the belief-behavior link based upon their finding that spanking was used by some parents who did not believe it to be appropriate or effective. Situational stressors produced an adverse reaction (i.e., stress) that overrode the beliefs that might normally prevent that parental behavior.

Controlling for the effects of key contextual variables (e.g., child age, child gender, family type, race, SES, parent gender, use of PPA) on PVA use and beliefs about PVA harm also allowed for more confidence in the results of validity tests by reducing the likelihood that the findings were influenced by confounding variables. Prior research by Flynn (1998) suggests beliefs about PPA can be age dependent, but most research on parental aggression typically does not include examinations of whether beliefs differ by child age. In addition, prior research on the influence of child gender on the use of PVA is inconclusive (Black et al., 2001). Vissing et al. (1991) found evidence of boys being more likely than girls to experience PVA; however, other studies have not supported the existence of child gender differences (e.g., Claussen & Crittenden, 1991; Sedlak, 1997; Straus & Field, 2003).

While examinations of propensity for aggression use by family type are inconclusive (e.g., Adler-Baeder, 2006; Gershoff, 2002; Hashima & Amato, 1994; Higgins & McCabe, 2003; Loeber et al., 2000; Thompson & Wyatt, 1999), it is conceivable that the unique family environments across different family types produce contexts that could confound an examination of the relationships between variables in the study. In addition, there is some evidence of racial differences in use of parental aggression (e.g., Day, Peterson, & McCracken, 1998; Pinderhughes et al., 2000; Straus &

Stewart, 1999), but other findings suggest no racial differences exist (e.g., Hemenway et al., 1994; Straus & Field, 2003). There are conflicting findings concerning racial differences in the approval of parental aggression (e.g., Flynn, 1994; Flynn, 1998; Markowitz, 2001). Furthermore, while PVA is used across SES groups (Thompson & Wyatt, 1999), some evidence indicates that the presence of stressors could impact the use of parental aggression differently according to SES group due to varying access to resources and support (Hashima & Amato, 1994; Hall, Sachs, & Rayens, 1998).

Parent gender may affect relationships among variables in tests of validity. Past research on PVA does not provide conclusive information about gender differences (e.g., Black et al., 2001; Higgins & McCabe, 2003); however, some research on the use of PPA suggests that gender differences are present in use of parental aggression (e.g., Day et al., 1998; Straus & Stewart, 1999). The integration of research findings from the PPA literature suggests that mothers use PPA more than fathers, but mothers have lower levels of approval for PPA than do fathers (e.g., Day et al., 1998; Douglas, 2006; Flynn, 1998; Straus & Mathur, 1996; Straus & Stewart, 1999). Consequently, the possibility that the belief-behavior link for PVA operates differently for mothers than for fathers warranted exploration in the present study.

Based on theoretical assumptions and some empirical evidence demonstrating associations with use of aggression, child age, child gender, family type, race, SES, and parent gender were examined for their relation to BPHS scores and use of PVA. The results of these analyses informed the use of control variables in concurrent validity tests. In order to distinguish between use of PPA and use of PVA, levels of PPA were assessed, given prior evidence of the frequent co-occurrence of PVA and PPA in research with

clinical samples (Higgins & McCabe, 2001). The influence of the contextual variables, as well as the use of PPA, was considered throughout the research process in this instrument development study.

In sum, the central purpose of the current research was to conduct an instrument development study of a measure of beliefs about PVA harm, the Beliefs about PVA Harm Survey (BPHS). To accomplish this purpose, the factor structure of the BPHS was evaluated and refined, and its reliability and validity were assessed, by conducting analyses guided by the following hypotheses and research questions:

(H1) It is expected that goodness-of-fit indices from Confirmatory Factor Analyses (CFAs) will support the BPHS as consisting of two distinct, yet related, constructs, Beliefs about Ordinary PVA and Beliefs about Severe PVA, that are indicated by the items theorized to be on each scale.

(RQ1) Is there evidence of convergent validity for the BPHS? That is, are the BPHS scales highly correlated with measures of other parenting belief constructs and moderately correlated with measures of parental aggression indicating relationship to theoretically similar constructs?

(RQ2) Is there evidence of discriminant validity for the BPHS? That is, are the BPHS scales sufficiently divergent from measures of other parenting beliefs, parental aggression, and general aggression, as well as unrelated to parental stress and social desirability, according to the pattern of expected relationships with these constructs? Since the results of testing H1 would influence the assessment of RQ1 and RQ2, they were research questions, rather than formal hypotheses.

Once the analyses for the above hypothesis and research questions were completed, the refined BPHS was used in concurrent validity tests of parental stress as a moderator of the relationship between beliefs about PVA harm and use of PVA. These tests were guided by the following hypotheses and research question:

- (H2) After controlling for the effects of potential confounds (e.g., child age, child gender, family type, race, SES, parent gender, use of PPA), it is expected that beliefs about PVA harm will explain variance in the use of PVA. Specifically, parents who express belief that harm comes from PVA at a lower threshold of use, thereby indicating they have a higher degree of belief about harm, would be expected to report lower levels of PVA use with their children.
- (H3) It is expected that the level of parental stress moderates the relationship between beliefs about PVA harm and use of PVA, such that it changes the nature of the belief-behavior link. Under conditions of high stress, it is expected that the association between beliefs about PVA harm and use of PVA will be smaller than when there are low levels of stress.
- (RQ3) Does the model operate differently for mothers than fathers? The existence of gender differences in studies of the use of parental aggression is unclear, but some evidence from PPA research suggests that parent gender may affect the nature of the belief-behavior link. No statement of expected differences was made since the evidence was not sufficient to formulate a hypothesis.

Guided by the above research hypotheses and research questions, the current study makes several unique contributions to the field. The initial establishment of a valid, reliable measure of beliefs about PVA harm facilitates future examinations that build

upon this first empirical study of beliefs about PVA harm. Findings from this research provide information about how beliefs are affected by child age through the examination of differences in beliefs by referent child age groups. In addition, the findings indicate what differences exist in beliefs about PVA harm for other contextual factors (i.e., child gender, family type, race, SES, parent gender). Furthermore, the examination of the moderating role of parental stress in the relationship between beliefs about PVA harm and use of PVA through concurrent validity tests begins the inquiry of the complex processes that are likely involved in the belief-behavior link for PVA. In addition, we know more about the effects of parent gender on the variables of interest and the proposed relationships among these variables. Importantly, the recruitment of the sample of parents from families in the general population extends knowledge about PVA based on a sample of parents that has variability in parental stress, use of PVA, and beliefs about PVA harm.

REVIEW OF THE LITERATURE

The purpose of this chapter is to present (a) a review of the relevant literature on the use of PVA, (b) a review of the literature addressing harm associated with PVA, (c) a review of the theoretical and empirical support/rationale for the conceptualization of beliefs about PVA harm and the development of an instrument to assess it, (d) a summary of the other constructs to be considered in establishing construct validity, (e) a review of the relevant theoretical and empirical support/rationale for considering the influence of parental stress on the belief-behavior link in establishing concurrent validity, (f) a review of the literature addressing the influence of other key contextual factors, and (g) the guiding research objective, hypotheses, and questions for this instrument development study.

Use of PVA

Prevalence data indicate that the use of PVA is widespread among parents in the general population. Most parents in the United States will use one or more forms of PVA while offspring are under the age of 18. Specifically, Straus and colleagues (1998) found in their nationally representative study of 1,000 parents that yelling/screaming and threatening to hit were the two most commonly used forms of PVA. Furthermore, they found PVA to be used almost as frequently as nonviolent discipline, which includes disciplinary practices defined as alternatives to corporal punishment (e.g., explanation, time out, deprivation of privilege, and substitute activity).

Findings from other prevalence studies (Straus & Field, 2003; Vissing et al., 1991) of PVA demonstrate it is used with children of all ages, but it is more likely with children age 7 and above. In their nationally representative sample of 3,346 parents, Vissing and colleagues (1991) found that 63% of these parents used at least one form of PVA (e.g., swearing, insulting, threatening to hit) in the previous year, with an average of 12.6 acts of PVA during that year. Furthermore, while parents' PVA use ranged from 1 act to more than 20 acts, over one-third (37.4%) reported 11 or more acts of PVA. More recently, Straus and Field (2003) found that between 90% and 98% of the 991 parents (depending on their child's age) in their nationally representative sample used at least one form of PVA during the preceding year. Specifically, shouting, yelling, or screaming was common with all children. The rate of some level of threatening to spank or hit was 67% for children ages 2 to 4, and then declined from middle childhood on. Swearing or cursing at a child steadily increased with child's age. Calling the child a name had a rate of 3.0% for children ages 2 to 4, and increased up to 30% by age 13. Finally, threatening to kick one's child out of the house was virtually nonexistent until children reached adolescence.

Harm Associated with PVA

While it is clear that PVA is prevalent among the general population at varying levels of use, why is it necessary that we have a clear understanding of what leads to this parental behavior? The widespread use of PVA by a majority of parents documented by the above findings (e.g., Straus & Field, 2003; Straus et al., 1998; Vissing et al., 1991) suggests that it is viewed as appropriate parental behavior, at least at a certain level (Straus & Hamby, 1997). However, commonly accepted parenting practices can still be

harmful (Thompson & Wyatt, 1999). The importance of research about PVA lies in the potential it has to harm children (Hart, Binggeli, & Brassard, 1998; Jellen, McCarroll, & Thayer, 2001). The potential for harm to children through PVA is partly indicated by research on a broader category of parental behavior termed emotional/psychological maltreatment or abuse, which includes severe PVA. In their review of empirical findings concerning emotional abuse, Kaplan and colleagues (1999) indicate that such maltreatment was previously thought to be less harmful than maltreatment levels of PPA. The reason for this belief was that the research typically included cases of parents who had been reported for child physical abuse. Reported cases do not usually include instances of PVA unless they are occurring with other forms of maltreatment, and, in such cases, there is tremendous overlap with other forms of parental aggression, such as PPA (Claussen & Crittenden, 1991; Hart et al., 1996; Schneider et al., 2005; Thompson & Wyatt, 1999). Consequently, in examinations of reported cases, PPA could mask the influence of a closely related, yet different form of parental aggression when the focus is on the physical safety of the child. Research with parents in the general population demonstrates PVA is more likely to occur independently outside of reported cases, and harm can occur from PVA, in the absence of PPA, even when it is not severe enough to warrant investigation (e.g., Claussen & Crittenden, 1991; Hart & Brassard, 1996; Kaplan et al., 1999; Thompson & Wyatt, 1999).

Based upon evidence of the harmful effects of PVA found in both retrospective and prospective research, researchers now believe that PVA is more closely linked than PPA to long-term psychological functioning (e.g., social impairment, depression, internalizing/externalizing behaviors, etc.) (e.g., Briere & Runtz, 1990; Gross & Keller,

1992; Kaplan et al., 1999; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Solomon & Serres, 1999). Retrospective studies of college students' childhood experience of parental maltreatment suggest that a childhood history of frequent PVA could have long-term consequences, and this history is more strongly associated than other parental aggression with certain adulthood outcomes. In their retrospective study of 277 female undergraduate students, Briere and Runtz (1990) found psychological maltreatment to be uniquely predictive of low self-esteem in adulthood when controlling for physical and sexual abuse, whereas physical abuse uniquely predicted aggression. Gross and Keller (1992) found that, when controlling the influence of physical abuse, psychological maltreatment was a better predictor of depression and low self-esteem in their sample of 260 undergraduate students. Since verbal aggression comprised approximately half of the psychological abuse items, these findings are especially relevant to the study of PVA. In their comprehensive examination of parental maltreatment, Higgins and McCabe (2003) found psychological maltreatment, including PVA, was more predictive of adults' general adjustment problems and adaptive functioning than other maltreatment.

In addition to these findings of a connection to low self-esteem, depression, and general adjustment problems, further research demonstrates an association of childhood PVA with dysfunctional attitudes and negative cognitive styles in adulthood. In their 2004 study of 220 undergraduate students, Gibb, Abramson, and Alloy found in their examination of childhood PVA within the larger context of emotional maltreatment that emotional maltreatment predicted students' dysfunctional attitudes, as measured by the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978). While no other parental

maltreatment was examined by Gibb et al. (2004), an earlier meta-analysis by Gibb (2002) of four studies examining childhood maltreatment and negative cognitive styles (Gibb et al., 2003; Gibb et al., 2001; Gross & Keller, 1992; Moll, 1992) indicates a history of PVA was significantly related to negative cognitive styles (i.e., the tendency to infer negative consequences or negative self-characteristics following negative life events) ($d = .16$), whereas a history of PPA was not ($d = .01$).

While the above retrospective studies do suggest long-term ramifications from PVA, it is important to note that retrospective evidence is subject to memory biases, and the research referenced above also does not provide specific information about use of PVA by age (e.g., Gibb and colleagues, 2001, 2003, 2004). For example, Gibb, Abramson, and Alloy (2004) only specified age in terms of experiences prior to age 15, as was also done in earlier studies (e.g., Gibb et al., 2001). In addition, these studies are unclear as to how the results relate solely to PVA when examining PVA within the larger group of behaviors known as psychological aggression/maltreatment (Hart et al., 1996; Thompson & Wyatt, 1999). Despite the limitations of these retrospective data, these findings do suggest that the *perception* of experience with childhood PVA relates to impairment in adulthood.

In their review of research on psychological maltreatment, Hart, Brassard, and Karlson (1996) indicate that further evidence from prospective research studies over the past two decades demonstrates strong empirical support for the association of overall psychological maltreatment, which includes PVA, to more immediate problems during childhood for the following domains: attachment (e.g., Cicchetti, 1989; Egeland & Sroufe, 1991), social competence and adjustment (e.g., Brassard, Hart, & Hardy, 1993;

Claussen & Crittenden, 1991; Hart & Brassard, 1991; Vissing et al., 1991), behavior (e.g. Hart & Brassard, 1991; Vissing et al., 1991; Wolfe & McGee, 1994), cognitive ability and problem solving (e.g., Erickson, Egeland, & Pianta, 1989; Hart & Brassard, 1991), and educational achievement (e.g., Hart & Brassard, 1991). Furthermore, Hart and colleagues (1996) indicate that the findings concerning psychologically maltreated children having lower levels of social competence and social adjustment hold true despite differences in definitions and methodology utilized. In a subsequent review of child maltreatment literature, Thompson and Wyatt (1999) describe children who experience psychological maltreatment as experiencing low self-esteem, depression, poor academic performance, and trouble in peer relationships. However, it is important to note that research findings indicating such effects are sometimes unclear about whether these outcomes are predicted by psychological maltreatment, independent of PPA, and, consequently, provide more limited evidence for the specific effects of PVA (Hart et al., 1996; Thompson & Wyatt, 1999).

Solomon and Serres' (1999) study of 10-year-old children in Canada provides clearer evidence of the impact of PVA. They separated participants who reported only PVA from those who reported multiple types of parental aggression by dropping the ones who experienced multiple types from their sample. For the remaining participants who only reported PVA, they found that children's reports of PVA were negatively correlated ($p < .01$) with perceived scholastic competence ($r = -.34$), behavioral conduct ($r = -.37$), and global self-worth ($r = -.29$), as well as academic achievement in French class ($r = -.20, p < .05$). Subsequent analyses revealed significant differences for these four outcomes between children who experienced greater levels of PVA and children who

experienced lesser levels of PVA, such that the ones with greater levels indicated poorer self-perceptions and lower academic achievement in French class.

The most convincing evidence of the impact from PVA comes from research demonstrating that, apart from the effects of PPA, PVA is associated with impairment in certain child outcomes, such as internalizing and externalizing behaviors, social impairment, and low self-esteem (e.g., McGee, Wolfe, & Wilson, 1997; Vissing et al., 1991). Vissing and colleagues (1991) statistically controlled for the influence of other forms of maltreatment, and found that parental reports of frequency of PVA used with children under age 17 were more predictive of child physical aggression and interpersonal problems than reports of PPA alone. Further, a clinical study of children age 11 to 17 by McGee and colleagues (1997) found evidence of PVA uniquely predicting youth self-reported externalizing behavior for the overall sample, as well as internalizing behavior of females, when statistically controlling for other forms of maltreatment.

While the above empirical evidence does suggest harm is associated with PVA, it is important to note that the understanding of when PVA shifts from being relatively harmless parental behavior to maltreatment is lacking (Herrenkohl, 2005; Straus & Field, 2003; Straus & Hamby, 1997). In examining the factors related to use of PVA, a well-developed measure of parental aggression, the Conflict Tactics Scale (CTS; Straus, 1979; Straus et al., 1998), has been used by numerous researchers in the field (e.g., Black et al., 2001; Litrownick et al., 2003; McCloskey, Figueredo, & Koss, 1995; Straus & Field, 2003; Vissing et al., 1991; Windham et al., 2004). However, research with this measure still does not answer what constitutes maltreatment with PVA. The developers of the

revised version (CTS-PC; Straus et al., 1998) allow flexibility in how to distinguish discipline from maltreatment (Straus & Hamby, 1997), and they have not suggested a concrete determination of the level of PVA that is harmful. Maltreatment can be classified by separating scales into ordinary and severe aggression and by setting arbitrarily assigned chronicity thresholds. The issue of how to classify maltreatment is even less clear with other measures, particularly unstandardized ones (e.g., Hemenway et al., 1994), or individual researchers' subjective distinctions of maltreatment, ranging from identifying a single behavior as *ever* occurring to identifying behaviors as *frequently* occurring (Gibb, 2002). Too wide definitions could conceal effects, whereas too narrow definitions preclude the detection of the full extent of harm (Mullen et al., 1996).

In the absence of the ability to concretely delineate when PVA reaches the point of maltreatment, societal and community norms currently play a large part in determining the answer to the question of when PVA shifts from relatively harmless parental discipline to maltreatment (Garbarino, 1998). While standards for differentiating acceptable parenting disciplinary practices from maltreatment are not clear and tend to vary across cultures (Cicchetti & Manly, 2001), preliminary empirical evidence indicates chronic, low severity parental aggression may be just as harmful as more severe infrequent maltreatment (Manly, Cicchetti, & Barnett, 1994; Manly, 2005). Consequently, the study of PVA should consider the frequency and severity of PVA use (O'Hagan, 1995; Shone & Parada, 2006).

While the definition of PVA as maltreatment is an important area of investigation, the current research did not focus on an examination of whether and how PVA is linked to impairment in child outcomes. Instead, the prior evidence that negative child outcomes

can result from use of PVA, as well as the evidence that level and amount of PVA matter, provides justification for a focus on factors that may help explain the level of PVA use among parents. Given the above evidence of the potential for harm from use of PVA and the unique contribution of PVA to child outcomes apart from PPA, further examinations of such factors are warranted to develop a deeper understanding of what contributes to PVA use.

Beliefs about PVA Harm

One factor that may explain the level of PVA use among parents involves parents' beliefs about PVA harm. Flynn (1998) argues that an understanding of beliefs about the appropriateness of parental aggression is important for explaining the use of such behavior. Beliefs are one of the cognitive domains studied in the parenting literature, along with ideas, perceptions, attributions, attitudes, and knowledge (e.g., Goodnow & Collins, 1990; Mize, Pettit, & Brown, 1995). The term 'beliefs' is chosen for the present research because it is generally used in the literature to denote personal constructions of truth about children as a group that are based upon parents' viewpoints, whereas such constructions about a specific child are 'perceptions' (e.g., Bugental & Goodnow, 1998; Goodnow & Collins, 1990; Miller, 1988; Mize et al., 1995). It is posited that beliefs are formed through the cognitive organization of different experiences, including attachment to caregiver(s), internal representations of past relationships, experiences of abuse, parenting practices experienced during childhood, and social/cultural norms (e.g., Bugental & Goodnow, 1998; Goodnow & Collins, 1990; Holden & Zambarano, 1992). Further, different types of parenting beliefs relate to different areas, including learning, development, socialization, childrearing, and the appropriateness of parental aggression

(Bugental & Goodnow, 1998; Goodnow & Collins, 1990; Miller, 1988). ‘Beliefs about PVA harm’ are conceptually related to the appropriateness of parental aggression, and are defined for the present research as what parents think to be true about the likelihood of harm resulting from specific acts of PVA.

Theoretical Support for the Belief-Behavior Link

The importance of measuring beliefs about PVA harm is theoretically supported. Crosbie-Burnett and Lewis (1993) constructed the social-cognitive-behavioral model of family interaction out of existing theories in order to promote theory and research from a family systems approach. While the model can be reductionistic in permitting the focus on specific behavior performed by individuals, cognitions are still understood within the context of their complex interactions and influence with each other. Before applying this model to the current study, a brief overview of the theories influencing its development is provided.

During the Industrial Revolution, explanations of how individual members of family systems related to one another grew out of psychological theories about individuals due to the concern for the welfare of families. Functionalists, such as William James and John Dewey, became interested in how mental processes led to practical consequences, which guided adaptation to the environment (Crosbie-Burnett & Lewis, 1993). A subsequent shift in how individuals were viewed and studied came with John B. Watson’s creation of a new paradigm, behaviorism, which led to the study of persons’ observable behaviors without reference to mental processes. These observable acts were described in terms of stimulus-response sequences that form the basis of learning theories (Crosbie-Burnett & Lewis, 1993; Nairne, 2000).

In contrast to the deterministic ideas of behaviorism, Alfred Adler viewed individual behaviors as resulting from internal, rather than external, forces (Nairne, 2000). This view of an individual's behavior as purposeful involved the goal of adapting to one's social group, including the family unit, and it placed importance on the perception of and attitudes towards the environment. In the 1950's, Neobehaviorist Edward Tolman recognized the cognitive aspects of learning behavior. His purposive behaviorism theory served as a precursor to cognitive psychology and social learning theories through the idea that inferred, unobserved intervening variables (cognitions) occur between the stimulus and the person's response (Crosbie-Burnett & Lewis, 1993).

During the cognitive revolution of the 1960's and 1970's, Albert Bandura further bridged the gaps between social, cognitive, and behavioral perspectives through his model of reciprocal determinism. Inherent to this model is the notion that expectations and behaviors can be acquired just by observing what positive and/or negative consequences result from another person's behavior (Crosbie-Burnett & Lewis, 1993; Nairne, 2000). Bandura (1986) later expanded his model to develop the social-cognitive theory. Utilizing ideas from this theory, it is assumed in the current study that parents are capable of forethought regulating their behavior (i.e., use of PVA) with regards to consequences of their actions on their children. Self-regulation of behavior occurs through parents comparing their behavior (i.e., use of PVA) to their internal standards (i.e., beliefs about PVA harm). This assumption of the self-regulation process is central to the foundation of the current study.

The social-cognitive-behavioral model of family interaction that Crosbie-Burnett and Lewis (1993) constructed by fitting the above theories together extends Bandura's

(1986) conceptualization of social-cognitive theory. It is assumed that parents have beliefs about what harm could come from using PVA that are derived from varying levels of social experiences, and those beliefs influence the extent to which they use it with their own children. If, for example, parents believe that harm comes from only a very high level of PVA use, then they are more likely to use PVA. On the other hand, if parents believe that even a low level of PVA use is harmful, then they are less likely to use PVA. In other words, a parent's use of PVA with their children should flow out of the beliefs the parent has about PVA. This theoretical explanation for the belief-behavior link of PVA undergirds the need to develop a measure of beliefs about PVA harm in order to study and further the understanding of what contributes to the use of PVA.

The social-cognitive-behavioral model includes various levels of an individual's social context, such as family, community, and society. Through the lens of general systems and ecological perspectives, dyads of individual family members represent subsystems of the family system, and families are themselves embedded within larger systems. Therefore, the "social" aspect is presumably larger than the immediate family. While social interactions and antecedents to cognitions are not specifically examined in the current study, it is assumed that parents' beliefs about PVA harm likely have been formed and reinforced by experiences in their social world.

Empirical Support for the Belief-Behavior Link

In addition to the theoretical support for the belief-behavior link, the parental aggression literature further indicates some empirical evidence of this association. Specifically, researchers have found that cognitions about PPA are linked to use of PPA (e.g., Holden, Coleman, & Schmidt, 1995; Jackson et al., 1999; Socolar & Stein, 1995;

Vittrup et al., 2006). Vittrup et al.'s (2006) longitudinal study with a general population sample of one hundred thirty-two mothers involved an investigation of the relationship between discipline techniques and attitudes towards spanking. The findings demonstrated that maternal attitudes towards spanking significantly correlated with spanking toddlers three years later ($r = .50, p < .01$). Closer examination of their measure of attitudes revealed that the items essentially assessed beliefs about the appropriateness or effectiveness of spanking. Vittrup et al.'s findings are consistent with cross-sectional research by Holden et al. (1995) that assessed attitudes in the same manner. Furthermore, these findings are similar to those of Socolar and Stein (1995) who conducted a structured interview study of beliefs about spanking. They found that belief in spanking significantly correlated with the practice ($r = .46, p \leq .001$) and severity ($r = .34, p \leq .001$) of spanking. Most importantly, Jackson et al. (1999) found in their nationally representative sample that attitudes toward PPA predicted the use of PPA, but not PVA. This finding indicates that, although PPA and PVA are correlates (e.g., Claussen & Crittenden, 1991; Hart et al., 1996; Schneider et al., 2005; Thompson & Wyatt, 1999), predictors of PPA are not necessarily predictors of PVA. Further, it suggests that examinations of how cognitions influence parental behavior should be conducted with cognitions specific to the behavior. The empirical evidence of the belief-behavior link for other parental aggression, combined with the theoretical explanations of how beliefs influence behavior, suggests the need to examine parents' beliefs about PVA harm and their relation with PVA use.

Measuring Beliefs about PVA Harm

While there are measures to assess beliefs about physical forms of parental aggression, ‘beliefs about PVA harm’ is a new construct in the parental aggression research field. An examination of beliefs about PVA harm hinges on the development of a way to measure it. It is important to develop a measure of this construct that distinguishes it from other factors related to PVA use, as well as from PVA use itself. In developing the Beliefs about PVA Harm Survey (BPHS), the hypothesized dimensionality of severity and frequency of PVA use for beliefs about PVA harm mirrors conceptualizations of PVA and corresponding measures, and shapes the structure of the BPHS scales and response format, as described below.

For behavioral measures of PVA use, the Conflict Tactics Scales—Parent to Child Version (CTS-PC; Straus et al., 1998) has been used by numerous researchers in the field (e.g., Black et al., 2001; Litrownick et al., 2003; McCloskey et al., 1995; Straus & Field, 2003; Vissing et al., 1991; Windham et al., 2004). It provides the most standardized assessment of the use of parental aggression. A review of work related to PVA led to the determination that Straus and colleagues (e.g., Straus & Hamby, 1997; Straus et al., 1998; Straus & Field, 2003; Straus, 2006) separate acts of PVA into those acts that are considered *ordinary* and those acts that are considered *severe*. Since the beliefs to be examined in the BPHS focus on PVA, this research on acts of PVA informs the list of items to which parents respond about the extent to which they believe the act of PVA would cause harm to children. Specifically, beliefs about PVA harm were conceptualized during the initial phases of the instrument development process as falling into these two distinct categories. Therefore, the BPHS consists of 2 distinct, yet related, scales, *Beliefs*

about Ordinary PVA and Beliefs about Severe PVA. This structure improves upon measures of beliefs about PPA or punitive discipline that tend to have a single scale of items at one level of severity, such as the Adult-Adolescent Parenting Inventory—Strong Belief in the Use and Value of Corporal Punishment Scale (Bavolek & Keene, 2005). The categorization of PVA acts for each scale is consistent with the distinction of ordinary and severe PVA acts within the behavioral assessment of the CTS-PC. This distinction allows for the explanation of beliefs about harm from more typically used, ordinary acts of PVA apart from the beliefs about harm from acts of PVA that could be more readily labeled abusive.

While the scale structure captures the dimension of severity for PVA use, another dimension that arose out of the review of literature on PVA involves frequency of PVA acts. The decisions about how to structure the response format of the BPHS were focused on how best to capture meaningful levels of PVA use. During the course of the development of the BPHS, Straus and Fauchier (2006) released a newly developed measure, the Dimensions of Discipline Inventory (DDI). The DDI was designed to assess use of 26 frequently used discipline behaviors, as well as context, modes of administration, and parents' cognitive appraisals of these behaviors. The Cognitive Appraisal Scale of the DDI is similar, in general, to the BPHS in its assessment of the extent to which parents' believe certain parenting behavior is okay. However, only 3 of its 26 items assess beliefs about acts of PVA, and the responses to these items indicate approval of the general frequency of use utilizing a 4-point scale (e.g., "never okay," "rarely okay," "usually okay," and "always or almost always okay"). In contrast, the BPHS is designed to capture beliefs about harm from a number of specific acts of PVA

and to delineate more precisely at what point a parent believes harm can occur from each act. The BPHS includes a temporal prompt for respondents (i.e., “How many times in one month could it be harmful to be...”). The BPHS response scale establishes finer dimensions of beliefs about harm from PVA use. The 7-point scale includes the following responses: 0 = Always harmful, 1 = 1-2 times, 2 = 3-5 times, 3 = 6-10 times, 4 = 11-20 times, 5 = More than 20 times, and 6 = Never harmful. This response scale was inspired by the format of the CTS-PC (Straus et al., 1998) response scale [e.g., 0 = Has never happened., 1 = Once, 2 = Twice, 3 = 3-5 times, 4 = 6-10 times, 5 = 11-20 times, 6 = More than 20 times, 7 = Not in the past month, but it happened before.]. More information on the initial development of the BPHS will be provided in the next chapter.

Other Constructs Important to the Development of the BPHS

Following the initial design of an instrument and its items, a critical step in instrument development involves construct validity testing, which will be discussed in more depth in the following chapter. Essentially, it involves gathering evidence to show that the instrument is measuring what it is intended to measure. When developing a new measure of a construct, the demonstration of construct validity relies heavily on identifying other constructs that are related to the construct of interest to varying degrees.

The demonstration of a pattern of relationships can indicate that the new measure is assessing beliefs about PVA harm if it is related to, yet distinct from, measures of other conceptually related constructs (Campbell & Fiske, 1959; John & Benet-Martinez, 2000). The PPA literature reviewed above provided information about the belief-behavior link for other belief constructs that could be closely related to ‘beliefs about PVA harm.’ Since PVA and PPA are correlates, it is plausible that beliefs about PVA and beliefs

about PPA would be related. Furthermore, the distinction of ‘beliefs about PVA harm’ in terms of ordinary acts versus severe acts is analogous to the differences in PPA research where beliefs related to corporal punishment and beliefs related to physical abuse (i.e., rigid expectations of children) have been examined. Those belief constructs are theoretically related to beliefs about harm from ordinary PVA and beliefs about harm from severe PVA, respectively. Since examinations of how cognitions influence parental behavior should be conducted with cognitions specific to the behavior, it is clear that, although related, the belief constructs for PPA should be distinct from beliefs about PVA harm.

In addition to the relation of ‘beliefs about PVA harm’ to other belief constructs, it is critical to note that the constructs of ‘beliefs about PVA harm’ and ‘use of PVA’ in the current study are theoretically related due to the belief-behavior link proposed in cognitive-behavioral theory. However, it was expected that these behavioral constructs are not as closely related to beliefs about PVA harm as the belief constructs, given that behaviors may be explained by factors other than beliefs. This distinction is grounded in both theoretical and empirical support. The theoretical explanations presented earlier demonstrated the evolution of scholars’ thinking about the importance of looking at cognitions to understand behavior. The current perspective of social-cognitive-behavioral theory emphasizes that beliefs are typically related. Further, it also emphasizes the important role cognitions play in explaining behavior and, at the same time, distinguishes cognitions from behavior.

Parents’ beliefs about PVA harm certainly are not the sole determinant of parents’ use of PVA. The interaction of beliefs about PVA harm with other factors that also affect

use of PVA is what ultimately determines the extent to which parents use PVA with their children. These factors may be other constructs that are unrelated to beliefs about PVA harm.

The demonstration of an expected pattern of relationships with other constructs would indicate that 'beliefs about PVA harm' is most related to other beliefs about parenting practices, moderately related to PVA use, and least related to other contextual factors related to PVA use. Consequently, examining other determinants of parental aggression and factors that may alter expected relationships also would be important to the development of a measure of beliefs about PVA harm. Their inclusion would allow for examination of concurrent validity. Distinctions between contextual factors and beliefs about PVA harm in the explanation of PVA use are important in establishing beliefs about PVA harm as a separate construct.

Influence of Parental Stress

The experience of stress has received extensive support from both theory and empirical research for its role as a major determinant of parental aggression (e.g., Hillson & Kuiper, 1994; Holden & Banez, 1996; Kotch et al., 1995; Kotch et al., 1997; Pinderhughes et al., 2000; Rodriguez & Green, 1997). Both theoretical explanations and empirical research findings further suggest that parental stress might moderate the belief-behavior link. 'Parental stress' is defined for the current study as the parent's adverse reaction to tension producing occurrences, also known as stressors, that may be chronic or acute in nature (Coohey & Braun, 1997; Whipple & Webster-Stratton, 1991).

General stress theory (Farrington, 1980) is widely used to explain the occurrence of child maltreatment in general and, also, is applicable to investigations of less severe

parental aggression. General stress theory suggests that the adverse reaction to stressors could lead to the use of parental aggression (Coohey & Braun, 1997). The moderating role of parental stress hypothesized in the current study is theoretically framed by an integration of social-cognitive-behavioral theory and general stress theory within the context of the ecological systems perspective. This integration has precedence in the literature. Milner (1993) considers parental behavior as both theory driven through the influence of preexisting beliefs and context driven through situational factors like stress. Further, Schellenbach and colleagues (1991) state that, “environmental factors (e.g., situational stress) interact with individual factors (e.g., cognitive interpretations) to provide the conditions for abusive behavior” (p. 62). In producing harmful parental behavior, the integration of stress theory with cognitive-behavioral theory would suggest that this interaction would involve outside influences, and resulting parental stress levels, affecting the parents’ ability to act in ways consistent with their beliefs. Thus, when under a high amount of stress, parents’ beliefs about PVA harm may not be accessible, as the stress “overrides” their cognitions that may explain lower use of PVA (Bugental & Goodnow, 1998). According to Bugental and Goodnow (1998), the belief-behavior link would be interrupted when attention is redirected to stressful situations, thereby disrupting cognitive processing.

While the above theoretical explanations support the moderating role of stress, empirical evidence of the role stress may play in the cognitive-behavior link is found in only two studies. Schellenbach et al. (1991) provide preliminary support for stress moderating the relationship between cognitions and behavior. In their qualitative study with 16 mothers participating in a child abuse program, they examined the links between

situational stress, parental expectations, interpretations of child behavior, and responses to child behavior. They found that high stress was related to more controlling, rejecting, negative, punishing parental responses. In addition, stress interacted with mothers' evaluations of children's behavior as positive or negative. Under conditions of high stress, parents with positive evaluations of children's behavior exhibited more negative verbal reactions. These findings suggest that stress may affect the nature of the cognitive-behavior link by overriding cognitions that may explain lower use of PVA. The redirection of attention to stressful situations may disrupt cognitive processing.

In Vittrup et al.'s (2006) longitudinal study of the relationship between discipline techniques and attitudes towards spanking, they found evidence of parental stress moderating the link between beliefs about the appropriateness or effectiveness of spanking and the use of spanking. In addition to quantitative evidence, results from qualitative data (i.e., explanations/comments about the context of mothers' use of spanking) provided support for stress serving a moderating role in the relationship between attitudes toward spanking and subsequent spanking behavior. Specifically, the qualitative results indicated that some mothers who did not view spanking as either appropriate or effective used it when they were angry or had lost control. By definition, the idea that anger and loss of control influences use of parental aggression suggests that situational stressors produced an adverse reaction – feelings of stress. Their use of spanking in such instances would suggest stress overrode the beliefs that would normally prevent that parental behavior.

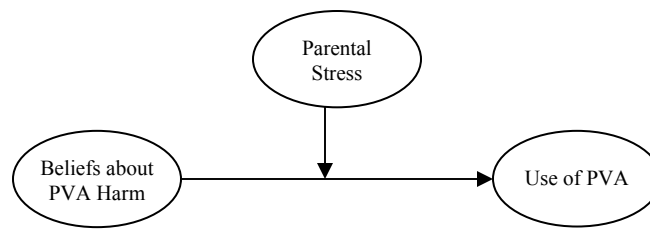


Figure 1. *Basic conceptual model of the role of stress in the belief-behavior link for PVA*

The conceptual model in Figure 1 depicts the relationships assessed in concurrent validity tests. The model posits relationships between beliefs about PVA harm, parental stress, and use of PVA. Specifically, it was proposed that beliefs about PVA harm have a direct effect on the use of PVA, and parental stress serves as a moderator of that direct effect. Parents' beliefs about PVA harm were hypothesized to be inversely related to parents' use of PVA. Therefore, parents who express belief that harm comes from PVA at a lower threshold of use, thereby indicating they have a higher degree of belief about harm, would be expected to report lower levels of PVA use with their children.

The model suggests that stress can interrupt the belief-behavior link, and lead to use of parental aggression by parents who do not believe it to be appropriate. In other words, the level of parental stress was expected to change the nature of the belief-behavior link. It is plausible that high stress would explain high use of PVA when beliefs about PVA harm would suggest otherwise. The expectation is that, when stress levels are low, the belief-behavior link is inversely related, whereas high stress is expected to explain high levels of PVA regardless of beliefs about PVA harm. Thus, under conditions of higher stress, the link between beliefs and use of PVA would be nonsignificant.

Influence of Other Contextual Factors

Glaser (2002) notes the complexity of relationships among factors involved in research on PVA: “[T]he relationship between the primary caregiver(s) and the child [...] is invariably nested within the family which is, in turn, significantly influenced by the social environment in which the family is located, and influenced by family members’ own histories” (p. 698). Consequently, in this instrument development study of the BPHS, it was important to consider the influence of several other contextual factors (i.e., child age, child gender, family type, race, SES, parent gender, use of PPA).

Since ‘beliefs about PVA harm’ is a newly conceptualized construct, it was not yet known what differences exist for this construct for each of these factors. The influence of each factor was taken into account throughout the instrument development process in this study to learn more about how these factors influence beliefs about PVA harm, as well as the relationships between beliefs about PVA harm and use of PVA. The following information summarizes research findings that informed the conceptual and methodological refinement of the BPHS and concurrent validity tests.

Child Age

The prevalence of PVA discussed earlier elucidated the differential use of PVA by child age. In studying beliefs about PVA harm, knowledge of these age trends raises the question of whether beliefs may vary by age, as well. The modifiability of beliefs is suggested by Goodnow and Collins’ (1990) characterization of ‘beliefs’ as statements of truth marked by a touch of myth due to their being based upon the parent’s viewpoint. This characterization suggests the modifiability of beliefs because the parent’s viewpoint can change based upon altered contexts or upon learning new information. This

modifiability is key to the likelihood that parents may hold different beliefs about PVA harm based on the child's age. Prior research by Flynn (1998) and Mize et al. (1995) on the belief-behavior link for other areas, namely PPA and socialization of children, suggests beliefs can be age dependent. For example, Flynn (1998) examined support for corporal punishment with a sample of 207 university students, and found that respondents were more supportive of spanking during early or middle childhood, rather than adolescence. While not focusing specifically on the belief-behavior link for parental aggression, Mize et al. (1995) examined the relationship between parents' beliefs about the causes of social behavioral skills and their supervision of their child's peer interaction with a sample of 76 mothers of 3- to 5-year-old children. The findings indicated that beliefs differed by child age. Unfortunately, despite the likelihood of differential beliefs by child age group, previous research about belief-behavior links regarding parental aggression typically does not include examinations of whether beliefs differ by child age (Flynn, 1998).

Child Gender

Based upon prior research, it was unclear whether or not differences exist by child gender for parents' beliefs about parental aggression. Black et al.'s (2001) review of factors influencing the use of child psychological abuse, which includes PVA, suggests findings about the influence of child gender on the use of PVA have been inconclusive. The results of Vissing et al.'s (1991) study of the impact of use of PVA on children utilizing a nationally representative sample of 3,346 parents indicate that boys were slightly more likely than girls to experience PVA. However, the findings from Straus and Field's (2003) study of the prevalence of PVA with a nationally representative sample of

991 parents did not support any child gender differences for parents' use of PVA. Furthermore, findings from other studies (e.g., Claussen & Crittenden, 1991; Sedlak, 1997) indicate that there is no relationship between child gender and the use of PVA when it was assessed within the broader context of psychological or emotional abuse. Claussen and Crittenden (1991) examined the consequences of psychological maltreatment with a sample of 390 families that included both those reported for child maltreatment and those from the general population. Sedlak (1997) examined risk for child psychological abuse with a nationally representative sample of substantiated child maltreatment utilizing data from the Second National Incidence Survey (NIS-2).

Family Type

Thompson and Wyatt's (1999) review of research on child maltreatment indicates that psychological maltreatment, which includes PVA, occurs across a variety of family types. However, some evidence suggests family structure can increase the likelihood of its use. The findings from a series of three studies reported by Higgins and McCabe (2003) suggested that parental separation/divorce uniquely predicted use of PVA within the broader construct of psychological maltreatment. Study 1, a prospective study based upon reports from 48 parents, showed divorce to be a unique predictor, but Study 2, a retrospective study with 138 adults, suggested that the family dynamics leading up to a divorce are more critical than the divorce itself.

While evidence of the role of family type in use of PVA is limited, more information is available concerning use of PPA. In her meta-analytic and theoretical review of research on the impact of use of corporal punishment, Gershoff (2002) states that, "Marital status itself may also influence parents' use of corporal punishment,

presumably because the stress of single parenthood can precipitate a reliance on corporal punishment” (p. 561). In their study of family interactions associated with juvenile offending, Loeber et al. (2000) examined data collected from 850 families through the prospective longitudinal Pittsburgh Youth Study. They found that single parents were more likely to use PPA than married parents. Furthermore, the study conducted by Hashima and Amato (1994) provides evidence of punitive parental behavior, including use of PPA and PVA, being more common in stepfamilies. Their study involved examination of the associations among poverty and parental behavior utilizing data from the National Survey of Families and Households (NSFH) provided by 1,035 parents who had children under age 5. While studies such as the ones just described indicate a connection between family structure and use of PVA, Adler-Baeder’s (2006) review of studies of the use of PPA indicates that studies have shown children in stepfamilies are not more likely to experience physical maltreatment than children in nuclear families.

Race

Research findings about the role of race in the use of parental aggression are inconclusive. For example, some studies have found that African-Americans use PPA more often than European-Americans (e.g., Day et al., 1998; Pinderhughes et al., 2000; Straus & Stewart, 1999). Day et al. (1998) examined what factors influence the use of spanking with a sample of 2,863 parents utilizing data from the National Survey of Families and Households (NSFH), which was completed by a probability sample. Pinderhughes et al. (2000) examined the relationship of ethnicity with parents’ harsh discipline responses, namely physical punishment, with a sample of 978 parents of kindergarten-aged children from the longitudinal Child Development Project. Straus and

Stewart (1999) examined factors influencing use of corporal punishment in their prevalence study with a nationally representative sample of 991 parents.

Other studies indicate no clear racial differences are found in the frequency of parental aggression (e.g., Hemenway et al., 1994; Straus & Field, 2003). Hemenway and colleagues (1994) surveyed 801 parents in their national sample to examine the connection between childhood experience of PVA and use of PVA with their offspring. Straus and Field (2003) examined the associations of demographic characteristics with use of PVA in their prevalence study of use of PVA with a nationally representative sample of 991 parents. When examining ordinary and severe PPA separately, Straus and colleagues (1998) found no racial differences for ordinary PPA, but African-Americans used severe PPA more than European-Americans.

In his study of attitudes towards spanking, Flynn (1998) found African-Americans were more likely to support use of parental aggression overall. That finding is consistent with Flynn's (1994) earlier findings utilizing data from the General Social Survey (GSS) completed by 978 randomly selected adults to examine regional differences in attitudes toward corporal punishment. In contrast, evidence from Markowitz's (2001) study of attitudes toward violence against children suggests no racial differences between nonwhites and whites for approval of parental aggression. Markowitz (2001) examined the relationships between attitudes about acceptability, childhood maltreatment history, domestic violence towards one's spouse, and parental aggression with a sample of 386 individuals, who included people from the general population and people from the population of convicted violent offenders. The results from Pinderhughes et al.'s (2000) study indicate that African-Americans are more likely to use harsher parental discipline

under higher stress. Findings from both that study and the one conducted by Straus et al. (1998) provide further evidence that African-Americans' reactions to stressors experienced as minority group parents could lead to more severe parental aggression.

SES

While Thompson and Wyatt's (1999) review indicates PVA is used across SES groups, prior research on PVA has demonstrated an increased likelihood of PVA use by parents with lower SES (e.g., Claussen & Crittenden, 1991; Hashima & Amato, 1994; Herrenkohl, Herrenkohl, Rupert, Egolf, & Lutz, 1995). The findings from Claussen and Crittenden's (1991) examination of the consequences of psychological maltreatment indicate lower income levels were related to use of emotional abuse, which includes severe PVA, for the subsample of 215 families drawn from the community. Hashima and Amato's (1994) examination of the associations among poverty and punitive parental behavior, including use of PPA and PVA, provided evidence of parents' at lower income levels being more likely to report using punitive parental behavior. Herrenkohl et al. (1995) explored the impact of child maltreatment utilizing longitudinal data from a sample of 206 children, who were from both families identified as abusive/neglectful and families not known to be abusive/neglectful. Their findings indicated that SES and the frequency of mother's harsh emotional discipline, which included PVA acts, were significantly correlated ($r = -.30, p < .001$).

The evidence of increased likelihood of PVA use by parents with lower incomes and lower SES from these studies might be explained by such parents having less access to resources. Some evidence indicates that the presence of stressors could impact the use of parental aggression differently according to SES group due to varying access to

resources and support (Hashima & Amato, 1994; Hall et al., 1998). Hashima and Amato (1994) found that the availability of social support buffered the impact of stressors on parenting behavior of low-income parents, but it did not exert the same influence for high-income parents. They suggest high-income parents could have access to other types of resources that are not readily accessible by low-income parents. Hall et al. (1998) investigated the impact of childhood abuse on the use of PPA with 206 low income single mothers. Their study provides further evidence of social resources lowering the potential for child maltreatment for low-income mothers.

Parent Gender

Past research on PVA tends to be carried out with mothers only, as fathers can be difficult to recruit to studies. In addition, when both mothers and fathers are included, their information tends to be aggregated (Black et al., 2001; Higgins & McCabe, 2003). In research on use of PPA, however, gender has been examined as a factor. The findings from some studies suggest the presence of gender differences in use of PPA (e.g., Day et al., 1998; Straus & Stewart, 1999). For example, the results from Day and colleagues (1998) indicate that mothers spank children more frequently than fathers. The findings from Straus and Stewart (1999) indicate more mothers than fathers used corporal punishment, but, of the parents who reported using it, the frequency rate did not really differ for mothers and fathers.

In contrast, other studies indicate that no gender differences are present in the use of PPA (e.g., Holden, Miller, & Harris, 1999; Holden & Zambarano, 1992). Holden et al. (1999) examined the relationship between use of corporal punishment and its expected impact on children with 84 parents of 3-year-old children, and the findings indicated that

no gender differences were present. Similarly, no gender differences were found in the study conducted by Holden and Zambarano (1992) that involved data collected from 40 children and their parents to examine the intergenerational transmission of PPA by evaluating the relationships between parents' attitudes toward use of PPA, children's behavioral intentions, and parents' use of PPA.

In examinations of beliefs or attitudes about PPA, Douglas (2006) states that, "Gender has consistently been found to be a predictor for the approval of corporal punishment, with women reporting *lower* levels of approval than men" (p.24) (emphasis added). For example, Straus and Mathur (1996) examined data gathered from seven nationally representative samples across a twenty-four year period, and they found that mothers had less favorable attitudes toward corporal punishment than fathers. Similarly, Flynn's (1998) study of support for corporal punishment found that males are more likely to support the use of PPA. Douglas's (2006) findings provide further evidence of this gender difference in approval of corporal punishment. Her study involved the examination of the relationships between familial violence socialization and approval of corporal punishment utilizing data from a sample of 7,371 university students who participated in the International Dating Violence Study across seventeen countries.

Taken together, research findings from the PPA literature suggest that mothers use PPA more than fathers, but mothers have lower levels of approval for PPA than do fathers, thereby indicating the expected association between beliefs and behavior may differ by gender. Consequently, it was important to assess whether the current study's model of the belief-behavior link for PVA operated differently for mothers than for fathers.

Use of PPA

While ample evidence from studies of clinical samples suggests PVA and PPA co-occur, other research has shown that PVA can occur apart from PPA, and that PVA has predictive value independent of the predictive value of PPA. A critical element of demonstrating harm in the studies reviewed earlier was establishing that the amount of variance accounted for by PVA was independent of the predictive value of PPA. Some researchers, such as Solomon and Serres (1999), have disentangled influences by separating participants who reported only PVA from those who reported multiple types of parental aggression. Other researchers, including Vissing et al. (1991) and McGee et al. (1997), statistically control the influence of other maltreatment to demonstrate PVA's detrimental impact.

Research Objectives, Hypotheses, and Questions

The primary objective of this study is to establish a conceptually distinct construct, beliefs about PVA harm, and initial evidence of the validity of an instrument, the Beliefs about PVA Harm Survey (BPHS). The analyses conducted in this instrument development study involved testing and refining the factor structure, as well as evaluating the reliability and validity, of the BPHS. Four hypotheses and three research questions were examined. The first hypothesis suggests the structure of the survey in terms of the number and nature of the underlying constructs and items that indicate each one. H1 is the expectation that goodness-of-fit indices from Confirmatory Factor Analyses (CFAs) would support the BPHS as consisting of two distinct, yet related, constructs, Beliefs about Ordinary PVA and Beliefs about Severe PVA, indicated by the items theorized to be on each scale. The first two research questions focus on tests of construct validity

through the assessment of the pattern of relationships between measures of selected constructs and both ‘beliefs about ordinary PVA’ and ‘beliefs about severe PVA.’ RQ1 asks whether there is evidence of convergent validity, and RQ2 asks whether there is evidence of discriminant validity. Based upon the procedures for establishing construct validity (e.g., Anastasi & Urbina, 1997; Campbell & Fiske, 1959; DeVellis, 2003), it was expected that the pattern of correlations would show evidence of both convergent and discriminant validity in that ‘beliefs about ordinary PVA’ and ‘beliefs about severe PVA’ would be most closely related to other beliefs, moderately related to parental aggression, less related to general aggression, and unrelated to parental stress and social desirability. Exploratory analyses, then, were conducted to determine whether differences exist in scores on the two BPHS scales based on child age group, child gender, family type, race, SES, and parent gender.

Following tests of construct validity, the refined BPHS was utilized to conduct tests of its concurrent validity. Specifically, the hypothesized relationships among beliefs about PVA harm, parental stress, and use of PVA were assessed. Three hypotheses and one research question guided this set of analyses. H2 is the expectation that, after controlling for the effects of potential confounds (e.g., child age group, child gender, family type, race, SES, parent gender, and use of PPA), beliefs about PVA harm would explain part of the variance in use of PVA. Specifically, parents who express belief that harm comes from PVA at a lower threshold of use, thereby indicating they have a higher degree of belief about harm, would be expected to report lower levels of PVA use with their children. H3 is the expectation that the level of parental stress moderates the relationship between beliefs about PVA harm and use of PVA, such that it changes the

nature of the belief-behavior link. Under conditions of high stress, it is expected that the association between beliefs about PVA harm and use of PVA would be smaller than when there are low levels of stress. The existence of parent gender differences was explored for the model to answer RQ3. Specifically, does the model operate differently for mothers than fathers? Evidence from PPA research suggests that parent gender may affect the nature of the belief-behavior link; however, it does not provide enough information to formulate a distinct hypothesis regarding the impact of gender on the relationships to be assessed in concurrent validity tests.

METHOD

Participants

The participants in this study were parents from the general population, as opposed to the population of reported maltreatment cases. Recruitment from this population facilitated an examination of the beliefs about PVA harm with people who are likely to use varied levels of PVA and to use PVA apart from PPA (English, Bangdiwala, & Runyan, 2005; Kaplan et al., 1999; NRC, 1993). The participants were from samples obtained by two different methods: through parents' participation in community-based parenting programs funded by the Alabama Children's Trust Fund and through email and flyer announcements distributed to parents. These two samples are described in detail below.

Children's Trust Fund Participants

One sample of parents was identified (as described in the Procedure section) through their participation in Parent Education/Support programs that were funded during Program Year 2007-2008 by the Children's Trust Fund (CTF) of Alabama through the State of Alabama Department of Child Abuse & Neglect Prevention. The mission of CTF is to "Prevent child abuse and neglect" (www.ctf.alabama.gov). To accomplish this mission, CTF funds community-based programs that predominantly serve low resource families who attend programs focused upon prevention of child abuse/neglect. Because there is neither a standard screening to assess parents' risk for child abuse/neglect nor

mandated program participation for the parents who were invited to participate in this study, it was expected that there would be variability among these participants in beliefs about PVA harm, parental stress, and use of PVA.

For reasons explicated in the Procedure section, the CTF participant sample included a total of four participants. All four participants were female, ranging in age from 26 to 32. Three were Caucasian, and one was African-American. Two of the participants reported having partial college or specified training as their highest level of education. One participant reported having a two-year college/technical school degree, and one participant reported having a four-year college degree. With regard to gross household income, three participants indicated it was less than \$20,000, while the other participant indicated an income of approximately \$53,000. Three participants were married, and the other participant was divorced. One participant was employed full-time, one was employed part-time, and two were not working for pay. Three participants were part of a two-parent family, with one reporting that both parents were the biological parents of their children. The participants responded to the survey for the age group in which they had a biological child (age 2-5: 2 participants; age 6-9: 2 participants).

Online Sample

In addition to the sample recruited from participants in CTF-funded parenting programs, another sample of parents completed the survey online. They were recruited (as described in the Procedure section) through email and flyer announcements distributed to parents. The inclusion of this sample (1) increased the number of participants recruited in a shorter amount of time, and (2) introduced additional

variability among the total sample of participants for beliefs about PVA harm, parental stress, and use of PVA.

The online survey was completed by three hundred sixty-nine parents. Fifty-five percent of the participants lived in Alabama, and 45% of the participants lived outside of Alabama. The sample was mostly female ($n = 228$); however, since 38% of the sample was male ($n = 139$), the goal to have at least 35% of the sample be male was met. The average age of the sample was 37.80 ($SD = 7.21$) with the median age at 37 years. The sample included Caucasians (85.1%), African-Americans (10%), Hispanics (1.9%), Asian-Americans (1.4%), and other ethnicities (1.6%). It was expected that the participants in the online sample would be from higher resource families, as those families are more likely to own computers and utilize the internet more frequently (Dillman, 2000). These parents from higher resource families also would likely have more education and higher household income than other parents. Indeed, the majority of the sample had a college degree. Four percent of the sample reported a two-year college/technical school degree, 37% reported a four-year college degree, and 40% reported a post-college degree as their highest level of education. With regard to gross household income level, thirteen percent of participants reported less than \$40,000, 30.9% reported between \$40,001 and \$75,000, and 55.9% reported more than \$75,000. The majority of the sample was married (87.3%), employed full-time (76.4%), and part of a two-parent family (85.8%), with 73% being from families in which both parents were the biological parents of their children. The participants responded to the survey for the age group in which they had a biological child (age 2-5: 42.3%; age 6-9: 21.1%; age 10-12: 17.3%; age 13-15: 19.2%).

Total Sample

The total sample consisted of the participants recruited through CTF-funded parenting programs and through announcements about the online version of the survey. The use of these two methods produced a sufficient pool of participants ($N = 373$) for the study. For this initial study, the goal was to recruit a total sample of 325 parents who had a biological child between the ages of 2 and 15, which are the ages covered by the BPHS referent groups. Since other factors not accounted for in the current study (e.g., length of time in stepfamily, involvement of noncustodial parent, etc.) may influence a stepparent's behaviors toward a stepchild, the only parents eligible to participate in the study were those parents who could respond about use of parental aggression with biological children. Additionally, efforts were made to recruit a sufficient number of both mothers and fathers. The minimum number of participants needed to have sufficient power to detect parent gender differences was 250, but a minimum of 200 cases was needed to meet general power considerations of all analyses when all respondents are combined (e.g., Bentler & Chou, 1987; DeVellis, 2003; Kaplan, 1995). The sample does not include anyone whose child has developmental delays, whose partner or child's other parent completed the survey (to ensure independent data), or anyone who participated in the peer language review of the BPHS. Since data collection only occurred at one time point, attrition was not an issue.

Procedure

The two samples described were utilized in this instrument development study conducted to evaluate the factor structure and validity of the BPHS. The procedures that were utilized to collect data from each sample are provided below.

CTF Participant Sample Data Collection

The part of the data collection involving participants of CTF-funded programs was connected to the PI's involvement with the data collection for the ongoing CTF Evaluation Project conducted by the CTF Evaluation Team at Auburn University. In recruiting CTF programs to be involved with data collection, seventeen Parent Education/Support programs were identified. The programs that were identified were ones whose staff demonstrated ability to follow research procedures and methods in the ongoing CTF Evaluation Project, as well as who tend to serve a moderate number of parents throughout the year. The presence of these characteristics improved the likelihood of these programs producing useable data for the current study. Program staff members were asked if they would be willing for new participants in their programs to be invited to participate in the current study. If the program staff members were willing, then they also were asked when they would have new participants entering their program. It was important that participants complete the survey prior to participating in the prevention program, so that their data were not confounded by ongoing participation in these services. Of the seventeen programs identified, only four programs were actually part of the data collection process for the following reasons: (1) program staff were willing for their participants to take time to complete the survey immediately before starting their program, (2) new participants entered their programs during the time of data collection, and (3) there were new participants who were not mandated to attend their programs (mandated program participants might feel coerced to participate in the study).

Program staff were trained in the data collection procedures prior to recruitment of the sample. Then, participants in the four CTF Parent Education/Support Programs

were asked to volunteer to complete the survey for the current study prior to their participation in the program, and were given a copy of the Information Letter for paper administration (Appendix A) before providing data. The survey (see Appendix E) consisted of the BPHS (34 items), questions about demographic information (12 items), measures to assess other belief constructs (24 items), measures of parental aggression and general aggression (48 items), measures of parental stress (22 items), and a measure of social desirability (13 items). While the survey consisted of 153 total items, practice administrations with 6 parents, including 3 CTF participants, indicated that it could be completed in 12 to 24 minutes, thereby showing that, overall, the items could be answered relatively quickly.

The limited number of programs from which to recruit participants limited the ability to reach a large number of parents through these programs who would be willing to complete the survey during the time of data collection. By the end of data collection, only 4 participants from the CTF participant sample had been willing to take the time to complete the survey.

Online Sample Data Collection

In addition to the sample recruited from CTF program participants, an online sample also was included to allow more variability in the total sample, as well as to facilitate the data collection process. The procedures with the online sample followed best practices for internet surveys (see Dillman, 2000). The online version of the survey was hosted by SurveyMonkey.com, which is a professional survey company that stores the data in a secure, password protected online database.

The online sample was recruited through email and flyer announcements (see Appendix B). The email announcements were sent to parents via several organizations' email listservs (e.g., Alabama Children's Trust Fund, Alabama Community Healthy Marriage Initiative, Alabama Head Start, Auburn University College of Human Sciences, Certified Family Life Educators, Children's Rights Council, Cooperative Extension Specialists, Frazer Memorial United Methodist Church, National Council on Family Relations – Student/New Professional Section & Family Policy Section, National Fatherhood Initiative, National Parent Education Network, Single Parent Initiative Network, etc.). Following best practices for internet surveys (see Dillman, 2000), reminder email announcements were sent to parents through these same listservs approximately two weeks after the initial invitation in order to improve response rates (see Appendix C). Additionally, over two hundred flyer announcements were distributed to parents throughout the State through assistance from church staff (e.g., Frazer Memorial United Methodist Church) and educators (e.g., Harris Early Learning Center of Birmingham). The email and flyer announcements included a link to the online version of the survey and an invitation to parents of children aged 2 to 15 to complete the survey via the link. When parents accessed the internet link, they first read the Information Letter for online administration (Appendix D), and, then, clicked on a button to indicate that they had read and agreed to the use of the data before proceeding to complete the survey.

The online version of the survey included some screening questions based upon requirements placed on the sample consisting of Children's Trust Fund participants. First, participants were asked if they had participated in a parent education program in the last year. If they indicated that they had, then they were asked how long it had been since

completing the program. Those parents who indicated they had completed the program less than two months before responding to the survey were excluded from the online sample for this study. Second, participants were asked if their partner and/or their child's other parent had completed the survey to the best of their knowledge. If they responded in the affirmative, then their data were excluded from the sample to prevent results from being confounded by dependent data. Third, participants were asked if they had any children with developmental delays. If they confirmed that they did, then their data were excluded from the sample, as raising children with developmental delays introduces environmental factors that could confound the results.

As participants completed the survey, they responded by typing/clicking their desired answer. They were permitted to quit the survey at any point or to choose not to click "submit" upon finishing it. The inclusion of the online survey increased accessibility to potential participants, and offered a more convenient administration of the survey that participants could complete whenever they had time available.

Once all data collected from the two samples were entered and checked for errors, data analyses were conducted to evaluate the factor structure, reliability, and validity of the BPHS.

The Beliefs about PVA Harm Survey (BPHS)

The development of the BPHS was undertaken to produce an instrument that assessed the threshold of PVA use at which parents believe PVA becomes harmful for specific age groups of children (i.e., early childhood, middle childhood, early adolescence, mid-adolescence). It was designed for use in (a) research of parents in order to further elicit knowledge about the use of parental aggression, and (b) program work

with parents at-risk of child abuse. The BPHS has been under development for the past two years.

Following the recommendation of DeVellis (2003), the first phase of instrument development involved a review of the applicable theories and empirical literature related to beliefs about parental aggression, including the content of existing measures of beliefs and use of PVA. This review informed the scales, item content, item format, and response format that formed the structure of the BPHS. Based upon the review of work related to PVA conducted by Murray Straus and colleagues (e.g., Straus & Hamby, 1997; Straus et al., 1998; Straus & Field, 2003; Straus, 2006), ‘beliefs about PVA harm’ was hypothesized to consist of beliefs about harm from ordinary PVA and beliefs about harm from severe PVA, which led to the development of the two scales, *Beliefs about Ordinary PVA* and *Beliefs about Severe PVA*.

The items representing the two scales consist of specific acts of PVA. The design used by Straus and Fauchier (2006) for the Cognitive Appraisal Scale of the DDI included items corresponding to the Discipline Behavior Scale of the DDI in order to allow assessments of the degree of concordance between parents’ actions and their beliefs. That design influenced the decision for the BPHS items to correspond to the CTS-PC items about PVA, so that it might be possible to assess how parents’ use of specific types of PVA line up with their beliefs about harm from specific types of PVA. The categorization of PVA acts on each scale is consistent with the distinction of ordinary and severe PVA acts within the CTS-PC (Straus et al., 1998). Items were initially created to mirror the five acts on the ordinary and severe subscales from the CTS-PC Psychological Aggression Scale, which assesses frequency of PVA use. When

those items included multiple acts (i.e., “Called him/her dumb or lazy or some other name like that.”), the acts were listed as separate items on the BPHS. Thus, there were 11 items (5 items for the Ordinary Scale, 6 items for the Severe Scale) created from the 5 items of the CTS-PC. Furthermore, a few other items were created that consisted of another way to word the initial items (1 item for the Ordinary Scale, 3 items for the Severe Scale). Following procedures suggested by DeVellis (2003), it is useful to have multiple ways of wording a general item in initial versions of a survey in order to determine the best way to capture what the items are intended to measure. Subsequent items were suggested by parents in a focus group who reviewed an early version of the BPHS. These items were based upon acts of PVA that they had either used as a parent or had observed other parents using and that were not represented in the existing items. Their efforts further enhanced the face validity of the items. The categorization of these items was based upon how they fit conceptually with the items already present on the two scales. Further criteria involved whether or not the act was something the parents would consider clearly abusive, as the *Beliefs about Severe PVA* Scale consists of such items.

In addition to developing the items, it was necessary to determine the response format parents would use in indicating their beliefs about PVA harm. In order for beliefs data to be directly comparable to reports of PVA, it was determined that the BPHS would use an identical time period and similar response format to the CTS-PC (Straus et al., 1998). The response scale of the CTS-PC permits reports of frequency of PVA acts according to the following scale: 0 = Has never happened., 1 = Once, 2 = Twice, 3 = 3-5 times, 4 = 6-10 times, 5 = 11-20 times, 6 = More than 20 times, 7 = Not in the past month, but it happened before. That response format was adapted to create the 7-point

scale of the BPHS that includes the following responses: 0 = Always harmful, 1 = 1-2 times, 2 = 3-5 times, 3 = 6-10 times, 4 = 11-20 times, 5 = More than 20 times, and 6 = Never harmful. This response format captures a “tolerance” level by permitting parents to quantify the point at which they believe harm to occur to children from use of each act of PVA. This format allows for scores on the BPHS to represent a continuum of tolerance or acceptability of a behavior due to beliefs about the harm a behavior would cause.

In addition to the above elements of design, the development of the BPHS also included the incorporation of a method to assess beliefs specific to child age. Flynn’s (1998) findings that beliefs about PPA differed by child age group initially led to the use of three referent age groups—early childhood, middle childhood, and adolescence. For the first version of the BPHS, the age ranges for these groups were 2-4, 7-9, and 13-15, respectively, based upon the groupings used by Flynn (1998). When responding to the BPHS, the specified referent age group is based upon the age of the parent’s child, so that beliefs about PVA harm can be compared to use of PVA with that target child. However, the gaps between these age ranges meant that information from parents who only had children between these specified ages would be lost. Consequently, the age groups were expanded to become 2-5, 6-10, and 11-15, respectively, so that gaps between groups were eliminated.

The initial 28-item instrument was further evaluated by University faculty in a Human Development and Family Studies department. Their feedback pertained to the relevance, readability, and conciseness of each item, as well as suggestions for other items and response options. Theoretical and empirical support for the suggested

modifications was considered prior to incorporating changes. Based on their recommendations, the response '0 = Always harmful' was added to the response set. Furthermore, suggested items were added to the survey. Subsequent feedback from faculty also led to modifying the referent child age groups to be the following: early childhood (2-5), middle childhood (6-9), early adolescence (10-12), and mid-adolescence (13-15).

The use of four categories, as opposed to three, improves the assessment of beliefs by referent age group by allowing parents to focus on more narrow age ranges with regard to the adolescence period in particular. That modification was important due to the developmental distinctions of youth within the broader adolescence age range that could have confounded results. The age ranges for the early adolescence group and the mid-adolescence group distinguish pre-teenagers from teenagers in order to more clearly focus respondents' thoughts as they respond to the BPHS items for either of those groups.

After the incorporation of the above changes, an additional step was taken in the development of the BPHS. A peer language review was conducted with a sample of parents, who had a child between the ages of 2 and 15, from the CTF participant population. The group consisted of both mothers and fathers. The mothers were Caucasian or African-American, and the fathers were African-American or Hispanic. The parents ranged in age from 23 to 29, and the ages of their children ranged from 3 to 11. The education level ranged from some high school to completion of 2-year college/technical school degree, and the annual household incomes ranged from less than \$15,000 to \$45,001-\$50,000. The main purpose of conducting the peer language review with this group of parents was to get feedback about the readability and clarity of the

BPHS, so as to ensure the BPHS is user-friendly. The feedback pertained to clarifications needed in the BPHS instructions and wording of some of the items. Based upon the suggestions of these parents, the instructions were revised to include a sentence that clearly stated the response scale should be used to select the number of times to represent the point at which an act would become harmful. Furthermore, the language was adapted (i.e., 'toy' was changed to 'object,' 'play' was changed to 'play or hang out') for three items to make them more applicable to all referent child age groups (e.g., "Threatening to destroy the favorite object of a child that age;" "Threatening to limit use of the favorite object for a child that age;" and "Threatening to not let a child that age play or 'hang out' with other children"). Finally, two items, "Calling a child that age crazy" and "Calling a child that age ugly," were modified to make it clearer that these acts involved insulting a child (e.g., "Calling a child that age crazy/insane" and "Telling a child that age that he/she is ugly/unattractive").

Based upon the review process, the version of the BPHS utilized in this study consisted of 34 items. It contained 14 items on the *Beliefs about Ordinary PVA Scale*, and 20 items on the *Beliefs about Severe PVA Scale*. Examples of items from the Ordinary PVA Scale include "How many times in one month could it be harmful to be yelling at a child that age," and "How many times in one month could it be harmful to be threatening to spank a child that age." Items from the Severe PVA Scale include "How many times in one month could it be harmful to be cursing at a child that age," and "How many times in one month could it be harmful to be threatening to "knock the lights out" of a child that age." Respondents indicated the least amount of times over a 1-month period that they believed each verbally aggressive act could be harmful to a child in the

specified age group. For the CTF participant sample, the specified age group was selected prior to an individual's completion of the survey, and was based upon the age group in which the parent had a biological child. For the online sample, participants were asked to select an age group in which they had a biological child and, then, instructed to complete the items for that age group when prompted and for that specific child when prompted. Responses were made using a 7-point scale: 0 = Always harmful, 1 = 1-2 times, 2 = 3-5 times, 3 = 6-10 times, 4 = 11-20 times, 5 = More than 20 times, and 6 = Never harmful. Responses were reverse scored, so that higher scores indicate a higher degree of belief that PVA causes harm (i.e., the belief that the use of PVA causes harm at lower thresholds). Another way to conceptualize score meaning is that higher BPHS scores indicate lower tolerance for a behavior. After data was collected, the scale also was altered to range from 1 to 7, rather than from 0 to 6, because it was determined that '0' was not a meaningful point on the scale. Mean scores are computed for each scale.

Once the Beliefs about PVA Harm Survey (BPHS) was administered in this study, then the next step of the instrument development process involved evaluating the performance of the BPHS items in order to determine how to refine the two scales, *Beliefs about Ordinary PVA* and *Beliefs about Severe PVA*. DeVellis (2003) characterizes this stage as, "the heart of the scale development process" (p. 90). Inherently linked to this stage is the issue of the reliability of the BPHS scales. Reliability is defined as, "the proportion of variance attributable to the true score of the latent variable" (DeVellis, 2003, p. 27). Support for the reliability of the BPHS scales would indicate that the items on a given scale are measuring the same thing. The examination of the reliability of the BPHS scales involved the evaluation of: (1) the relationships between the items and the

latent variable they were hypothesized to represent, (2) the relationships between each item on a given scale with the other items hypothesized to belong to that scale, and (3) the effect of the combination of the items hypothesized to belong to a given scale. The evaluation of each of these things influenced the refinement of the BPHS scales, as described in the next chapter. Cronbach's coefficient alpha was used as an indicator of the reliability of the BPHS scales.

Measures

In order to further evaluate the BPHS, the survey (see Appendix E) completed by respondents included several instruments in addition to the BPHS. To assess construct validity, the following measures were included: the Adult-Adolescent Parenting Inventory (AAPI-2)—Strong Belief in the Use and Value of Corporal Punishment Scale (Bavolek & Keene, 2005), the Child Abuse Potential Inventory (CAP)—Rigidity Scale (Milner, 1986), the Conflict Tactics Scales—Parent to Child Version (CTS-PC; Straus et al., 1998), the Parenting Scale—Overreactivity (Irvine, Biglan, Smolkowski, & Ary, 1999), the Deffenbacher Driving Anger Scale—Short Form (Deffenbacher, Oetting & Lynch, 1994), the Parenting Stress Index—Short Form—Parental Distress Subscale (PSI-SF; Abidin, 1995), the Perceived Stress Scale (PSS-10; Cohen & Williamson, 1988), and the Marlowe-Crowne Social Desirability Scale—Short Form (Reynolds, 1982). Finally, a list of pertinent demographic questions was included in the survey. To assess concurrent validity, the measures listed above that assess parental stress and parental aggression were utilized in tests of the model that depicted their relationships with one another. The order of the instruments in the survey was such that the BPHS was physically separated from the report of PVA use by the other instruments included to assess construct validity

and concurrent validity. Details about each of the instruments listed are provided below, along with explanations for why they were selected.

Demographics

Parents completed the Demographic Form (Adapted from CTF Evaluation Project) to provide basic demographic information (i.e., age, gender, race), information about employment (i.e., work status, occupation, household income), and family composition (i.e., marital status, number of children, etc.). SES was determined through use of the income-to-needs ratio. Participants' total annual household income before taxes was divided by the 2005 Federal Poverty Guideline for the participants' household size (e.g., \$19,350 for a family of four, \$25,870 for a family of six, etc.).

Measures for Construct Validity Testing

Parents completed several measures that were used to assess the construct validity of the BPHS. Construct validity of a measure is defined as, "the extent to which the test may be said to measure a theoretical construct or trait" (Anastasi & Urbina, 1997, p. 126), and it deals with the theoretical relationships between variables (DeVellis, 2003). Evidence of convergent validity and discriminant validity are both required in order to establish construct validity. Their assessment involves "investigating the comparative strengths or patterns of relations among several variables" (Spector, 1992, p. 47). For the present study, convergent validity involves assessment of the similarity between measures of theoretically related constructs (DeVellis, 2003; Spector, 1992). According to Spector (1992), ideally, two measures of the same construct "correlate at about the level of their reliabilities" (p. 50). Furthermore, two measures of closely related, yet

distinct, constructs would correlate at levels slightly lower than those of two measures of the same construct.

Tests of discriminant validity demonstrate the distinctiveness of constructs through evidence of (1) more related measures having higher correlations than less related measures, and (2) low, nonsignificant correlations between measures of unrelated constructs (Anastasi & Urbina, 1997; Campbell & Fiske, 1959; Christensen, 2001; DeVellis, 2003; Straus et al., 1998). Based upon this pattern of correlations, measures of constructs that should be most closely related to the BPHS would have the highest correlations. Modest correlations would be found between measures of different constructs that are theoretically related. Low, nonsignificant correlations would be found between measures of different constructs that are not theoretically related.

The classic approach to assessments of construct validity is Campbell and Fiske's (1959) Multitrait-Multimethod Matrix (MTMM). This tool requires that each construct in the study be assessed by at least two different methods. Consequently, it is not fully applicable in the present study, as all measures involve self-report responses to a survey. Also, since the BPHS was developed out of a need for a measure of the beliefs about PVA construct, there is not a well-established scale that can serve as an alternative measure of this same construct through use of a different method. However, the ideas underlying the MTMM with regard to heterotrait-monomethod correlations, which involve multiple constructs with varying degrees of relatedness measured with a single method, informed the manner in which convergent and discriminant validity were assessed.

Convergent and discriminant validity were assessed through the use of several measures: the Adult-Adolescent Parenting Inventory (AAPI-2)—Strong Belief in the Use and Value of Corporal Punishment Scale (Bavolek & Keene, 2005), the Child Abuse Potential Inventory (CAP)—Rigidity Scale (Milner, 1986), the Conflict Tactics Scales—Parent to Child Version—Psychological Aggression and Physical Assault Scales (CTS-PC; Straus et al., 1998), the Parenting Scale—Overreactivity (Irvine et al., 1999), the Deffenbacher Driving Anger Scale—Short Form (Deffenbacher, Oetting & Lynch, 1994), the Parenting Stress Index—Short Form—Parental Distress Subscale (PSI-SF; Abidin, 1995), the Perceived Stress Scale (PSS-10; Cohen & Williamson, 1988), and the Marlowe-Crowne Social Desirability Scale—Short Form (Reynolds, 1982).

The expected pattern of correlations between the constructs represented by the measures and the constructs represented by the two BPHS scales is summarized in Table 1. It was expected that both beliefs about ordinary PVA and beliefs about severe PVA would be most closely related to beliefs, moderately related to parental aggression, less related to general aggression, and unrelated to parental stress and social desirability. For each BPHS scale, the specific order expected in the correlations with the measures of the beliefs and parental aggression constructs is specified by the order in which the measures are listed, with the more related one listed first in each instance. For example, the AAPI-2—Strong Belief in the Use and Value of Corporal Punishment Scale is expected to be more closely related to the *Beliefs about Ordinary PVA* Scale than the CAP—Rigidity Scale, but the reverse is expected for the *Beliefs about Severe PVA* Scale.

Table 1

Expected Pattern of Correlations of Other Constructs Among Beliefs about Ordinary PVA and Beliefs about Severe PVA in Order of Relatedness

Construct	Order of Relationships for <i>Beliefs about Ordinary PVA</i> Scale	Order of Relationships for <i>Beliefs about Severe PVA</i> Scale
Beliefs	AAPI-2—Strong Belief in the Use and Value of Corporal Punishment Scale CAP—Rigidity Scale	CAP—Rigidity Scale AAPI-2—Strong Belief in the Use and Value of Corporal Punishment Scale
Parental Aggression	CTS-PC—Psychological Aggression Scale Ordinary and Severe PVA Parenting Scale—Overreactivity CTS-PC—Physical Assault Scale	CTS-PC—Psychological Aggression Scale Ordinary and Severe PVA Parenting Scale—Overreactivity CTS-PC—Physical Assault Scale
General Aggression	Deffenbacher Driving Anger Scale—Short Form	Deffenbacher Driving Anger Scale—Short Form
Parental Stress	PSI-SF—Parental Distress Scale Perceived Stress Scale	PSI-SF—Parental Distress Scale Perceived Stress Scale
Social Desirability	Marlowe-Crowne Social Desirability Scale—Short Form	Marlowe-Crowne Social Desirability Scale—Short Form

Beliefs. The Adult-Adolescent Parenting Inventory (AAPI-2; Bavolek & Keene, 2005) consists of a total of five scales and contains 40 items designed to assess parenting attitudes and behaviors that contribute to child abuse and neglect. The scale from the AAPI-2 included in this study, Strong Belief in the Use and Value of Corporal Punishment, consists of 11 items (Online Version, Form B) developed to assess parents' beliefs about using corporal punishment. Participants responded according to a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree." Six of the items must be reverse scored, and then mean scores are computed for the scale. Higher scores on this

scale indicate stronger belief in the use of corporal punishment. An example of an item from that scale is, “Children who are spanked behave better than children who are not spanked.” The internal consistency of this particular scale has been estimated as .92, and it has received support for its construct validity and criterion related validity (Bavolek & Keene, 2005). The alpha reliability for the current study was .89.

The Child Abuse Potential Inventory (CAP; Milner, 1986) was designed to identify parents’ risk for engaging in physical child abuse. It consists of 10 scales and 3 validity scales, and contains a combined total of 160 items. It has a forced choice format where respondents indicate that they either agree or disagree with each item. The CAP has received extensive support for its reliability and validity as a screen for potential child abusers (Milner, 1994), and its reliability for use with the general population is estimated to be .92-.96 (Milner, 1986). The Rigidity Scale from the CAP consists of 14 items that assess expectations toward the appearance and behavior of children. Mean scores are calculated. Higher scores on this scale indicate more rigidity in expectations about children. Examples of items include “Children should never disobey,” and “A good child keeps his toys and clothes neat and orderly.” The internal consistency estimates for this scale range from .79 to .87 (Milner, 1986). In the current study, the alpha level was .67.

It was expected that lower levels of belief about PVA harm, which indicate belief that harm comes from PVA use at a higher threshold, would be related to higher levels of belief in the use of corporal punishment and more rigid expectations of children. Scores from each BPHS scale should correlate with both measures because they all involve measures of beliefs. Furthermore, it was expected that beliefs about ordinary PVA, as measured by the *Beliefs about Ordinary PVA* Scale, would be more highly correlated

with belief in corporal punishment than with rigid expectations of children. In contrast, it was expected that beliefs about severe PVA harm, as measured by the *Beliefs about Severe PVA* Scale, would be more highly correlated with rigid expectations of children than with belief in corporal punishment. These differences in magnitude of correlation were expected because beliefs about ordinary PVA and belief in corporal punishment involve milder forms of parental aggression, whereas beliefs about severe PVA and rigid expectations involve beliefs that favor use of more harsh forms of parental aggression. Support for these expected relationships would provide evidence of convergent validity in terms of the beliefs dealing with different severity levels of parental aggression. The magnitude of the relationships was examined as evidence of discriminant validity, as well.

Parental Aggression. The use of parental aggression was assessed by 3 measures. Parents completed the Conflict Tactics Scales—Parent to Child Version (CTS-PC; Straus et al., 1998). The CTS-PC is designed for parents to be respondents, and it consists of 22 items. The items are divided among three core scales: 4 items on Nonviolent Discipline (e.g., “Took away privileges or grounded him/her”), 5 items on Psychological Aggression (e.g., “Threatened to spank or hit him/her but did not actually do it”), and 13 items on Physical Assault (e.g., “Slapped him/her on the face or head or ears”). The Psychological Aggression Scale was used to assess parents’ use of PVA, because, while titled the “Psychological Aggression Scale,” the items on this scale only depict verbally aggressive acts. The Physical Assault Scale was used to assess parents’ use of PPA in order to permit controlling for its effects in statistical analyses. The Nonviolent Discipline items

allowed parents a chance also to indicate what positive parenting techniques they do utilize, rather than just reporting parental aggression.

Respondents rated all 22 items on the CTS-PC according to how often each act had occurred in the last month using the following response scale: 0 (This has never happened), 1 (Once), 2 (Twice), 3 (3-5 times), 4 (6-10 times), 5 (11-20 times), 6 (More than 20 times), and 7 (Not during this time, but it happened before). After recoding the responses according to the scoring guidelines (Straus, Hamby, & Warren, 2003), mean scores for the scales are computed. Higher scores for the Psychological Aggression Scale and Physical Assault Scale indicate higher frequency of the behaviors in the last month. The CTS-PC has demonstrated evidence of construct validity, as well as content validity, in assessing frequency of parents' acts of non-violent discipline and aggression used with their children (Straus et al., 1998; Straus, 2006). The reliability of the CTS-PC ranges from low to moderate with the following alpha coefficients for each scale: Physical Assault = .55, Psychological Aggression = .60, and Nonviolent Discipline = .70 (Straus et al., 1998; Straus & Field, 2003). The lower internal consistency reliabilities for the Physical Assault and Psychological Aggression scales are explained, at least partly, by the inclusion of severe items, which measure rare events, lowering correlations between items due to highly skewed distributions (Straus et al., 1998; Straus & Field, 2003). The small number of items in the Psychological Aggression Scale further contributes to its low reliability (Straus & Field, 2003). In the current study, the alpha for the Psychological Aggression Scale was .61, and the alpha for the Physical Assault Scale was .40.

In addition to including the items from the CTS-PC Psychological Aggression scale, six items named ‘Ordinary and Severe PVA’ were created for the current study to increase the number of items utilized to assess PVA use. These six items correspond with other acts of PVA listed on the BPHS beyond the acts contained in the five items from the CTS-PC. Three of the six items involve ordinary acts of PVA. An example of one of these items is, “Threatened to limit use of his/her favorite object.” The other three items represent severe acts of PVA. An example of one of these items is, “Threatened to leave him/her on the side of the road.” The response format for these six items is the same as for the CTS-PC. The scoring for these six items also is consistent with the CTS-PC scoring guidelines. Mean scores are computed. Higher scores indicate higher frequency of the behaviors in the last month. The alpha reliability in the current study was .32.

Another measure included to assess use of PVA was the Parenting Scale—Overreactivity (Irvine et al., 1999). The Parenting Scale was designed to measure dysfunctional parenting in discipline situations, and its items consist of hypothetical situations where responses are made along a 7-point continuum, which allows parents to rate themselves for each item. The full measure consists of the Laxness factor (6 items), the Overreactivity factor (6 items), and the Monitoring item, for a combined total of 13 items. The items used in this study were the ones from the Overreactivity factor, as it contains items that assess the tendency of parents to use PVA. An example of one item on this factor includes, “When my child misbehaves, I raise my voice or yell.....I speak to my child calmly.” Four of the six items must be reverse scored, and, then, mean scores are computed for the scale. Higher scores on this scale indicate increased likelihood of using PVA. Cronbach’s alpha for the Overreactivity factor was above .80, and the factor

has received support for its construct validity (Irvine et al., 1999). For the current study, the alpha level was .78.

The above measures of parental aggression were included in tests of convergent and discriminant validity. Parental aggression was expected to be related to, yet distinct from, beliefs about ordinary PVA and beliefs about severe PVA. Since beliefs about PVA harm were expected to explain variance in the use of PVA, a moderate correlation was expected for both beliefs about ordinary PVA and beliefs about severe PVA with use of PVA. Since the BPHS items assess beliefs about harm from PVA acts listed on the CTS-PC and have a similar response format, it was important to demonstrate that the two BPHS scales are distinct from the CTS-PC Psychological Aggression Scale to provide evidence that the scales are measuring a distinct construct (i.e., beliefs rather than parental aggression). Finding a stronger correlation with the measures of other beliefs than measures of parental aggression would provide support for that distinction. Furthermore, the Parenting Scale—Overreactivity was expected to correlate with the BPHS scales at a slightly lower level than the CTS-PC due to the greater distinction in items and response formats between the two measures. Finally, the CTS-PC Physical Assault Scale was expected to correlate at a lower level than the measures of PVA use due to its assessment of physical, rather than verbal, aggression.

General Aggression. The Deffenbacher Driving Anger Scale—Short Form (Deffenbacher, Oetting & Lynch, 1994) was used to assess the driving anger of participants. This measure consists of 14 items that depict situations that could happen to someone while he/she is driving a vehicle. Examples of items include, “Someone runs a red light or stop sign,” and “A truck kicks up sand or gravel on the car you are driving.”

Respondents rate the amount of anger that would be provoked by each situation using the following scale: 1 (None at all), 2 (A little), 3 (Some), 4 (Much), and 5 (Very much). Mean scores are computed. Higher scores indicate higher levels of driving anger. The 14-item form of the original 33-item version has acceptable reliability with an alpha coefficient of .80 (Deffenbacher et al., 1994), as well as support for its construct validity (Deffenbacher, Lynch, Oetting, & Yingling, 2001). The alpha level for the current study was .90.

This measure was selected for tests of both convergent and discriminant validity because it involves aggressive tendency; however, it targets a different type of aggression than the aggression experienced in a parent-child relationship. Within the context of this study, it is viewed as a measure of general aggression tendencies. While a relationship between this scale and the two BPHS scales may exist, it also should be that aggressive feelings while driving are distinct from beliefs that aggression in parenting is harmful/not harmful. Consequently, driving anger should have a lower correlation with both beliefs about ordinary PVA and beliefs about severe PVA than the correlations that parental aggression had with those two sets of beliefs.

Parental Stress. The Parenting Stress Index—Short Form (PSI-SF; Abidin, 1995) is a self-report measure that consists of three scales (Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child) containing 36 items that assess stress resulting from parenting. Responses to these items are made according to a 5-point Likert scale ranging from “strongly agree” to “strongly disagree.” The PSI-SF’s Parental Distress Scale consists of 12 items that ask about personal factors (e.g., “I often have the feeling that I cannot handle things very well”) and life restrictions (e.g., “Since having a

child, I feel that I am almost never able to do things that I like to do”). Mean scores are calculated. Higher scores indicate higher levels of parental distress. Haskett, Ahern, Ward, and Allaire (2006) estimate the internal consistency of this scale at .78, and their analyses supported its construct validity. In the current study, the alpha was .84.

In addition to the PSI-SF—Parental Distress Scale, the Perceived Stress Scale (PSS-14; Cohen, Kamarck, & Mermelstein, 1983) was included to assess parental stress. This measure originally consisted of 14 items that deal with respondents’ feelings/thoughts. Subsequent factor analyses have resulted in a 10-item version of this measure (PSS-10; Cohen & Williamson, 1988) that was utilized in the current study. Respondents indicate for each item how often they felt/thought a certain way during the last month according to a 5-point scale, ranging from “never” to “very often.” Example items include: “How often have you felt nervous and stressed;” “How often have you felt things were going your way;” and “How often have you felt that difficulties were piling up so high that you could not overcome them.” Four of the ten items must be reverse scored, and, then, mean scores are computed. Higher scores indicate higher levels of perceived stress. The PSS-10 has acceptable internal reliability with an alpha coefficient of .78, and has received support for construct validity (Cohen & Williamson, 1988). The alpha for the current study was .89.

While parental stress was expected to be related to use of PVA, there is no indication that parental stress should be related to beliefs about PVA harm. Consequently, it was expected that neither of the parental stress measures described above would relate to the two BPHS scales.

Social Desirability. The Marlowe-Crowne Social Desirability Scale—Short Form (Reynolds, 1982) was included to assess socially desirable responding. It assesses the general motive of avoidance of disapproval (Crowne, 1979). Examples of items include, “I sometimes feel resentful when I don’t get my way,” and “I am always courteous, even to people who are disagreeable.” Responses to the items are made according to whether or not the person thinks the statement is true or false as it pertains to him/her. After scoring the items according to the scoring guidelines, mean scores are calculated. Higher scores indicate more socially desirable response patterns. The 13-item form of the original 33-item version has demonstrated acceptable reliability (.76) and validity (Reynolds, 1982). In the current study, the alpha level was .74.

A measure of socially desirable response patterns was chosen for inclusion in the assessment of discriminant validity based upon the recommendation of researchers (Paulhus, 1991; Straus, 2006) experienced in instrument development that such a measure be included in testing the validity of instruments. Social desirability should not be related to either beliefs about ordinary PVA or beliefs about severe PVA. Findings that this measure does not correlate with the two BPHS scales would indicate that participants tend to respond truthfully to the items on the BPHS, and, therefore, there is no indication that this measure is substantially influenced by a socially desirable response set (Anastasi & Urbina, 1997).

Measures for Concurrent Validity Testing

After the construct validity testing, concurrent validity tests were conducted to empirically examine the model (see Figure 2) that depicts parental stress as a moderator of the link between beliefs about PVA harm and use of PVA. Concurrent validity testing

of a measure involves simultaneously collecting data on the scale of interest and on criteria (i.e., use of PVA), and, then, testing the extent to which the score on the scale is associated with the dependent variable (John & Benet-Martinez, 2000; Spector, 1992). Support for the model would provide evidence of concurrent validity because it demonstrates the BPHS is operating as would be expected of a measure of beliefs about PVA harm. The tests of the model included the measures described in detail above as indicators of parental stress [the Parenting Stress Index—Short Form—Parental Distress Subscale (PSI-SF; Abidin, 1995) and the Perceived Stress Scale (PSS-10; Cohen & Williamson, 1988)] and of use of PVA [the Conflict Tactics Scales—Parent to Child Version—Psychological Aggression (CTS-PC; Straus et al., 1998), the Ordinary and Severe PVA items (Project Developed), and the Parenting Scale—Overreactivity (Irvine et al., 1999)].

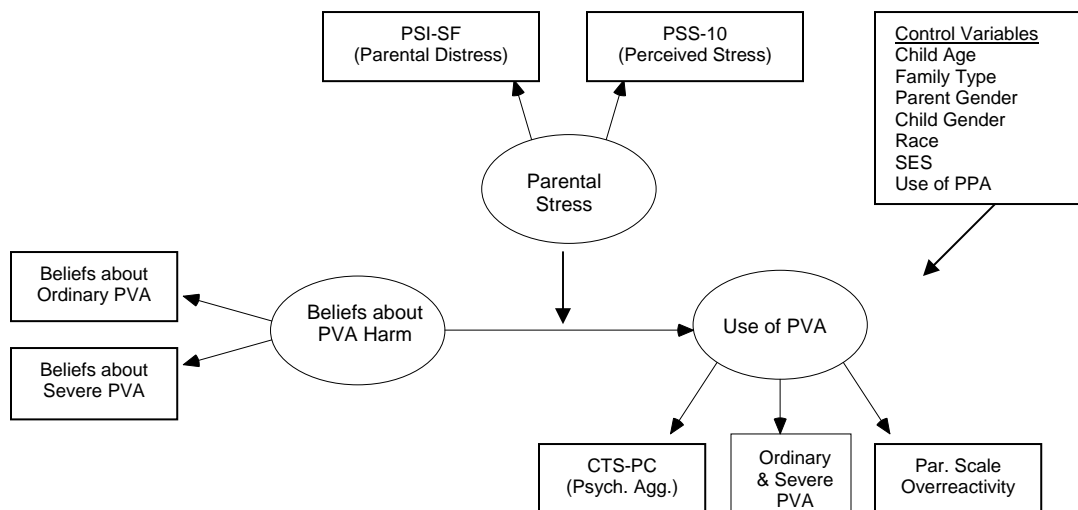


Figure 2. *The planned empirical model of the key constructs*

Power Analyses and Missing Data

The planned analyses had power considerations that were similar to one another. In order to identify significant loadings in the CFAs at a power level of .80, DeVellis (2003) recommends basing the sample size on the number of items and the number of factors anticipated in the instrument. The guidelines DeVellis (2003) attributes to Comrey (1988) indicated that a sample size of 200 cases would be adequate for the factor analysis of the BPHS since it contained less than 40 items. In addition to CFAs, it was planned that data would be analyzed through structural equation modeling during concurrent validity tests. With SEM, calculations of statistical power can be complex, and there are no set recommendations for sample size. However, the general rule of thumb is to include 5 to 10 cases for each estimated parameter and/or have 50 cases per latent variable (Bentler & Chou, 1987; Kaplan, 1995; Meyers, Gamst, & Guarino, 2006; Tabachnick & Fidell, 2001).

The above guidelines for SEM suggest that an adequate sample size would be 125 participants, given that, at most, there would be 25 parameters in the model. However, for the CFAs, it was necessary to have at least 200 cases due to the number of items on the BPHS. Based upon Black et al. (2001), the findings were expected to have small (.10) to medium (.30) effects. The inclusion of at least 200 cases met the power considerations of the CFAs and SEM and allowed the detection of the expected effect sizes with an alpha of .05 and a power level of .80. Additional cases were needed to allow the model to be fit to the mothers' and fathers' data separately to assess gender differences. At least 125 cases from each gender were needed, for a total of 250 cases. The recruitment of 373 parents allowed for the possibility that some surveys had missing data.

The statistical approaches used for handling missing data were consistent with the data analyses conducted and depended upon the nature of the missing data. To determine whether or not data were missing at random, any variables with more than 5% of data missing were tested to see if participants missing that information differed significantly from other participants. After verifying that the data were missing at random, Full Information Maximum Likelihood Estimation (FIML) techniques were used to handle missing data where possible. This method is very useful in that all available data collected from each participant is retained and used in analyses without the use of statistical imputations, thereby producing precise statistical estimates. For the portion of the analyses involving bootstrapping techniques, the means were imputed for any variables on the *Beliefs about Severe PVA* Scale that were missing data due to the requirement that no data be missing when utilizing that method. The variables for this scale had less than 5% missing data.

RESULTS

The primary purpose of the current study was to assess the factor structure, reliability, and validity of the Beliefs about PVA Harm Survey (BPHS). A series of analyses were conducted to accomplish this purpose. The first set of analyses consisted of Confirmatory Factor Analyses (CFAs) conducted for the two theorized multi-indicator latent constructs (i.e., the two BPHS scales). The analyses included tests of the factor structure for groups of parents across the four referent child age groups from the BPHS in order to determine whether the factor structure was consistent regardless of the age group of focus.

The second set of analyses involved assessments of the convergent validity and discriminant validity of the BPHS through an examination of the correlations of beliefs about ordinary PVA and beliefs about severe PVA with related beliefs, parental aggression, general aggression, parental stress, and social desirability.

The third set of analyses involved further examination of external validity by testing the relationship of both beliefs about ordinary PVA and beliefs about severe PVA harm with use of PVA, and then assessing whether parental stress (i.e., perceived stress and parental distress) moderates that relationship. Models of these relationships were constructed and tested through path analyses. The analyses included tests across groups of parents in order to evaluate whether the relationships between the variables were consistent for mothers versus fathers. The results from each set of analyses are presented.

Evaluation of the Factor Structure of the BPHS

Hypothesis 1: It is expected that goodness-of-fit indices from Confirmatory Factor Analyses (CFAs) will support the BPHS as consisting of two distinct, yet related, constructs, Beliefs about Ordinary PVA and Beliefs about Severe PVA, that are indicated by the items theorized to be on each scale. Measurement models for the two theorized multi-indicator latent constructs, Beliefs about Ordinary PVA and Beliefs about Severe PVA, were created and tested using SPSS 15.0 and AMOS 7.0. Prior to testing the models, responses for each of the indicators were reverse scored, so that higher scores on each scale indicate a higher degree of belief that PVA causes harm (i.e., the belief that the use of PVA causes harm at lower thresholds). For the two constructs, the first model tested included all of the indicators that were originally theorized to measure the construct. Since it was expected that the two factors underlying the BPHS would be related to each other, it was necessary that the analytical procedures to test this hypothesis not assume independence of factors. The CFAs indicated the descriptive statistics, goodness-of-fit indices, and regression weights for each measurement model. For all CFAs conducted, three widely used fit indices were utilized to determine the degree to which the models fit the data: the chi-square statistic (χ^2), the comparative fit index (CFI), and the root-mean-square-error of approximation (RMSEA). To determine the model is a good fit, the chi-square statistic should be nonsignificant. Given its sensitivity to sample size, it is better to also examine other fit indices. A CFI between .90 and 1.0 and an RMSEA less than .08 indicate a fit of the model (Keiley, Dankoski, Dolbin-MacNab, & Liu, 2005; Meyers, Gamst, & Guarino, 2006). However, Browne and Cudeck (1993) indicate that RMSEA values between .08 and .10 indicate acceptable fit.

Beliefs about Ordinary PVA. The results from the initial CFA for the Beliefs about Ordinary PVA construct indicated inadequate goodness-of-fit indices. Three areas were examined in order to determine how to refine the model to improve model fit. First, the feasibility and statistical significance of the parameter estimates were evaluated (Byrne, 2001). The statistical significance of the parameter estimates is determined by the critical ratio, and it must be larger than the absolute value of 1.96 in order to reject the null hypothesis that the estimate equals 0.0 (Byrne, 2001; Kline, 2005). Second, items with nonnormal distribution (i.e., significant nonzero skewness and/or kurtosis) were identified. Nonnormality of data can lead to: (1) spuriously high values of chi-square that encourage inappropriate model modifications, (2) improper solutions or analyses that fail to converge, (3) modest underestimation of fit indices, such as the CFI, and (4) spuriously low standard errors (Byrne, 2001). Third, the regression weights were examined to determine which items had coefficients less than .30, which is the value needed to identify a significant loading based on a sample size of 373 and a power level of .80 (Hair, 1998).

All of the items had significant parameters. Individual items identified as having significant nonzero skewness and/or kurtosis and coefficients less than .30 were evaluated to ensure that their removal would not compromise the theoretical makeup of the factor. Also, the impact the removal of the items would have on the scale's overall reliability, as measured by Cronbach's alpha, was assessed. This process resulted in the retention of 8 of the 14 original items. The descriptive statistics and standardized regression weights for all 14 items are presented in Table 2. The 6 items that were not retained as part of the scale are indicated by italicized beta weights.

Table 2

Descriptive Statistics of the 14 Items on the Beliefs about Ordinary PVA Scale (N = 373)

	Min	Max	M	SD	Skew	Kurt.	β
1. Yelling at a child that age.	1.0	7.0	5.46	1.54	-.78	-.07	.32***
4. Threatening to make a child that age stay in his/her bedroom for several hours.	1.0	7.0	5.92	1.70	-1.93	2.85	.49***
5. Threatening to not let a child that age do anything until he/she has finished doing chores.	1.0	7.0	3.58	2.40	.06	-1.70	.64***
6. Shouting at a child that age.	1.0	7.0	5.92	1.36	-1.41	1.80	.43***
10. Screaming at a child that age.	1.0	7.0	6.54	1.00	-2.72	8.12	.33***
11. Threatening to spank a child that age.	1.0	7.0	5.18	2.08	-1.03	-.27	.50***
12. Threatening to withhold a meal from a child that age.	1.0	7.0	6.76	.82	-5.24	31.59	.20***
14. Threatening to hit a child that age.	1.0	7.0	6.78	.77	-4.86	28.22	.16**
15. Threatening to limit use of the favorite object for a child that age.	1.0	7.0	3.65	2.14	-.12	-1.51	.78***
18. Threatening to not let a child that age do anything until all of the food is eaten from his/her plate.	1.0	7.0	5.65	1.96	-1.48	.91	.48***
21. Threatening to make a child that age go to bed early.	1.0	7.0	3.57	2.33	.00	-1.68	.82***
24. Threatening to slap a child that age.	1.0	7.0	6.86	.68	-6.43	45.52	.23***
30. Threatening to not let a child that age watch his/her favorite television show.	1.0	7.0	3.22	2.13	.14	-1.62	.87***
33. Threatening to not let a child that age play or “hang out” with other children.	1.0	7.0	4.50	2.18	-.68	-1.01	.70***

* $p < .05$, ** $p < .01$, *** $p < .001$

The removal of 6 items reduced the overlap among the items of the scale by eliminating redundancy due to the inclusion of alternate ways of wording the same act of PVA. For example, the items that asked about shouting and screaming were eliminated, but the item that asked about yelling was retained. Additionally, the items about threatening to hit and threatening to slap were removed, while the item about threatening to spank remained part of the scale. The other two of the six items (i.e., “Threatening to make a child that age stay in his/her bedroom for several hours” and “Threatening to withhold a meal from a child that age”) removed from the scale represented distinct acts of PVA that were included to broaden the spectrum of acts considered for beliefs about ordinary PVA. Both of those items had significant nonzero skewness and kurtosis, and the item about threatening to withhold a meal had a $\beta < .30$.

The refined measurement model in Figure 3 was evaluated, and it was found to have adequate goodness-of-fit indices ($\chi^2 = 71.680$, $df = 20$, $p < .001$, CFI = .955, RMSEA = .083). All retained items had a $\beta \geq .30$, which meets the standard set prior to the analyses, and the Cronbach’s alpha for the refined scale was .86.

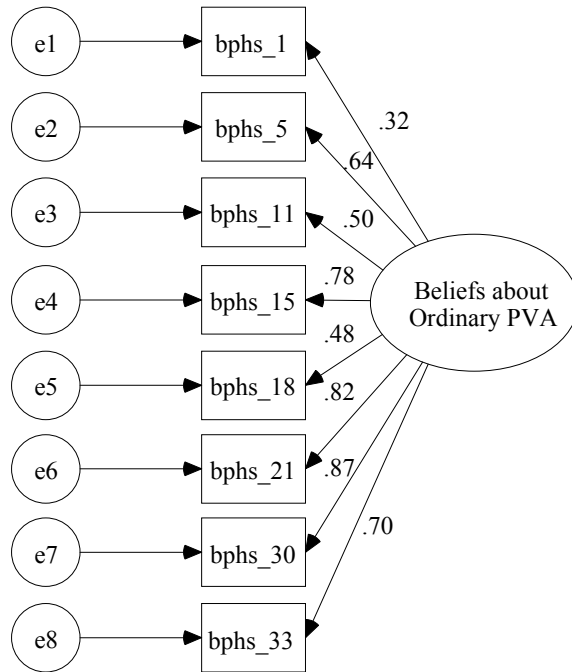


Figure 3. *Standardized model of the Beliefs about Ordinary PVA Scale (Fit indices: Chi-square = 71.680, df = 20, p < .001, CFI = .955, RMSEA = .083)*

The factor structure was further assessed for the four referent child age groups in order to identify items that did not have significant loadings for the age groups. The goodness-of-fit indices for the 4 referent child age groups are listed in Table 3. In examining the factor structure for these age groups, it was determined that items 21 and 30 were highly intercorrelated across all four age groups. In addition, items 5 and 21 were highly intercorrelated for the middle childhood group. The associated error terms were correlated to account for those associations. For the early childhood, middle childhood, and early adolescence groups, all of the items had a $\beta \geq .30$. For the mid-adolescence group, there was one item (“Yelling at a child that age”) that had a $\beta < .30$, and it was the only nonsignificant parameter found when examining the factor structure by the age groups. It was determined that this particular item would remain part of the scale for two reasons. First, elimination of the item would remove an item that is key to

the theoretical makeup of the construct. Second, even with this item included for the mid-adolescence group, the model demonstrated acceptable fit for the age group in question.

Table 3

Goodness-of-Fit Indices for Revised Beliefs about Ordinary PVA Scale for the 4 Referent Child Age Groups

	<i>N</i>	χ^2	<i>df</i>	<i>p</i>	CFI	RMSEA
Early Childhood (Age 2 – 5)	158	32.004	19	.031	.970	.066
Middle Childhood (Age 6 – 9)	80	25.521	18	.111	.975	.073
Early Adolescence (Age 10 – 12)	64	31.314	19	.037	.954	.101
Mid-Adolescence (Age 13 – 15)	71	27.886	19	.086	.950	.082

Beliefs about Severe PVA. The initial CFA for the Beliefs about Severe PVA construct would not run using the Maximum Likelihood estimator that had been used for the CFAs with the Beliefs about Ordinary PVA construct. A closer examination of the descriptive statistics for this measurement model revealed that all 20 items for this scale had tremendous violations of normal distribution assumptions. Specifically, these items had significant negative skewness and nonzero kurtosis. Several methods were employed to resolve the issues encountered. Based on the recommendations of Tabachnick and Fidell (2001), the first method utilized in an attempt to correct the nonnormal distributions involved data transformations. These transformations were undertaken with caution since the transformation of variables can make analyses harder to interpret. Tabachnick and Fidell (2001) recommend log transformations for data with substantial

negative skewness and inverse transformations for data with severe negative skewness. Since the skewness was negative in all instances, the transformations involved reflecting the variables before transforming the data. Both log and inverse transformations were undertaken, but neither type of transformation was successful in normalizing the data from the 20 items of the scale.

The next method utilized in an attempt to resolve the issues of nonnormal data distributions involved trying alternate estimators for the CFAs. Based on a review of the other estimator options, both the asymptotically-distribution free and the unweighted least squares estimators were selected; however, the CFA would not run with either estimator.

The third method utilized involved coupling the Maximum Likelihood estimator with the bootstrapping technique. Bootstrapping involves the creation of multiple subsamples drawn with replacement from the original sample, and the resulting bootstrap sampling distribution is free from the assumptions of normality (Byrne, 2001). This method did permit testing with the initial CFA for the Beliefs about Severe PVA construct, but the results indicated inadequate goodness-of-fit indices.

Further examination of the frequencies of participants' responses across the 20 items of the scale revealed that an average of only 19 people gave a response other than that the act was 'always harmful' to a child in the specific referent child age group. Consequently, 95% of the sample indicated that the acts were 'always harmful.' It was determined that the use of the bootstrapping technique had produced misleading results. Essentially, the subsamples randomly selected through that technique could exclude enough of the cases where participants' responses differed from the typical response, and

make the method appear to resolve previous issues with the nonnormal distributions of the data (A. T. Vazsonyi, personal communication, October, 2008).

Based on the above information, it was determined that the *Beliefs about Severe PVA Scale* did not have psychometric properties. Instead, it had to be treated as an index of parents' beliefs about severe PVA. Since CFAs and reliability assessments no longer could provide relevant information, the items could not be narrowed, and the factor structure could not be assessed for the four referent child age groups. Consequently, all 20 items remained part of this scale. The items were recoded into dichotomous variables with '1' representing the 'always harmful' response and '0' representing all other possible responses. This recoding maintains the reverse scoring of BPHS items that occurred prior to conducting the CFAs (i.e., higher scores indicate the belief that the use of PVA causes harm at lower thresholds). The descriptive statistics of the 20 dichotomous items are presented in Table 4. While the *Beliefs about Severe PVA Scale* had to be treated as an index, rather than a scale with psychometric properties, its construct validity still could be assessed through comparisons to other measures through Pearson correlations, and its concurrent validity could be evaluated by examining it as a manifest variable (A. T. Vazsonyi, personal communication, October, 2008). This mirrors the use of measures of extreme behaviors in linear tests (e.g., the CTS-PC assessments of severe PVA and severe PPA – Straus, Hamby, & Warren, 2003).

Table 4

Descriptive Statistics of the 20 Items on the Beliefs about Severe PVA Scale (N = 373)

	Min	Max	M	SD	Skew	Kurtosis
2. Threatening to make a child that age stay outside for several hours.	0	1.0	.87	.34	-2.16	2.67
3. Calling a child that age dumb.	0	1.0	.97	.16	-5.88	32.78
7. Threatening to send a child that age away from home.	0	1.0	.95	.22	-4.23	16.00
8. Telling a child that age he/she will not succeed at anything.	0	1.0	.99	.10	-9.54	89.47
9. Threatening to destroy the favorite object of a child that age.	0	1.0	.93	.25	-3.48	10.14
13. Swearing at a child that age.	0	1.0	.93	.25	-3.48	10.14
16. Telling a child that age he/she is not wanted.	0	1.0	.99	.09	-11.06	120.97
17. Threatening to punch a child that age.	0	1.0	.99	.10	-9.54	89.47
19. Calling a child that age crazy/insane.	0	1.0	.94	.24	-3.66	11.45
20. Cursing at a child that age.	0	1.0	.94	.23	-3.87	13.01
22. Threatening to kick a child that age out of the house.	0	1.0	.97	.17	-5.59	29.35
23. Telling a child that age that he/she is ugly/unattractive.	0	1.0	.99	.09	-11.06	120.97
25. Threatening to make a child that age sleep outside.	0	1.0	.97	.17	-5.59	29.35
26. Insulting a child that age.	0	1.0	.97	.17	-5.59	29.35
27. Threatening to “knock the lights out” of a child that age.	0	1.0	.97	.17	-5.59	29.35
28. Threatening to leave a child that age on the side of the road.	0	1.0	.95	.21	-4.38	17.24
29. Calling a child that age lazy.	0	1.0	.69	.47	-.81	-1.36
31. Threatening to kill a child that age.	0	1.0	.99	.09	-11.06	120.97
32. Calling a child that age worthless.	0	1.0	.99	.12	-8.50	70.57
34. Threatening to kill the pet of a child that age.	0	1.0	.99	.12	-8.50	70.57

Beliefs about PVA Harm. Given the nature of the *Beliefs about Severe PVA* Scale described above, it was not possible to assess the two factor structure of the BPHS using CFAs. Furthermore, the two BPHS scales had to be treated separately in all subsequent analyses, rather than as indicators of the latent construct, Beliefs about PVA Harm. Mean scores were computed for the refined *Beliefs about Ordinary PVA* Scale and the complete *Beliefs about Severe PVA* Scale, and these scores were used in tests of construct validity and concurrent validity.

Evaluation of the Construct Validity of the BPHS

Research Questions 1 and 2: Is there evidence of convergent validity for the BPHS? Is there evidence of discriminant validity for the BPHS? Specifically, are the BPHS scales highly correlated with measures of other parenting belief constructs and moderately correlated with measures of parental aggression indicating relationship to theoretically similar constructs? Furthermore, are the BPHS scales sufficiently divergent from measures of other parenting beliefs, parental aggression, and general aggression, as well as unrelated to parental stress and social desirability, according to the pattern of expected relationships with these constructs? Evidence of convergent validity and discriminant validity are both required in order to establish construct validity, and they are assessed by investigating the pattern of relationships among conceptually related constructs (Campbell & Fiske, 1959; DeVellis, 2003; Spector, 1992).

Prior to assessing construct validity, alpha was computed for each of the measures of each construct (i.e., beliefs, parental aggression, general aggression, parental stress, and social desirability). To have sufficient power to detect expected relationships, the standard was set for each measure to have an alpha of at least .60 (DeVellis, 2003). The

item contributions within each measure were examined to determine the impact removal of an item would have upon the reliability of the measure. As indicated in Table 5, the alphas for five of the ten measures exceeded .70, and, based upon a review of item contribution, it was determined that all items would be retained within these measures. For the other five measures, it was determined that items would be deleted in order to improve reliability of the measures, and the scores were recomputed for these measures prior to assessing construct validity for the two BPHS scales.

For the CAP—Rigidity Scale, the decision was made to drop three of the items in order to improve its reliability. While the alpha was .634 prior to removing those items, the three items (i.e., “People expect too much from me,” “My telephone number is unlisted,” and “A good child keeps his toys and clothes neat and orderly.”) were not critical to the theoretical relationship of rigid expectations of children with beliefs about ordinary PVA or beliefs about severe PVA. Their removal improved the alpha of this scale to .667, thereby strengthening the power to detect expected relationships with this measure.

For the CTS-PC—Psychological Aggression Scale, one item was deleted from the score for this scale because its deletion would increase the alpha of the scale from .595 to .614, which improved the acceptability of the scale’s reliability. Similarly, for the Parenting Scale—Overreactivity measure, one item (i.e., “When my child does something I don’t like, I insult my child, say mean things, or call my child names... never/rarely or most of the time.”) was deleted to improve the alpha from .746 to .775. While the alpha was already at an acceptable level, the scale was believed to be a better measure of PVA use with that item deleted.

Table 5

Coefficient Alphas for Measures of Constructs

Construct	Measure	α	Items Deleted	Recomputed α
Beliefs	AAPI-2—Strong Belief in the Use and Value of Corporal Punishment Scale	.894	None	
	CAP—Rigidity Scale	.634	1, 5, and 11	.667
Parental Aggression	CTS-PC—Psychological Aggression Scale	.595	21	.614
	Ordinary and Severe PVA	.281	24, 26, 28	.321
	Parenting Scale—Overreactivity	.746	6	.775
	CTS-PC—Physical Assault Scale	.399	7, 9, 11, 13, 15, 19, 20	.400
General Aggression	Deffenbacher Driving Anger Scale—Short Form	.898	None	
Parental Stress	PSI-SF—Parental Distress Scale	.843	None	
	Perceived Stress Scale	.890	None	
Social Desirability	Marlowe-Crowne Social Desirability Scale—Short Form	.736	None	

The Ordinary and Severe PVA items were developed for this study in order to increase the number of items utilized to assess use of PVA. The initial alpha for the six items combined was .281, which fell far below the minimum goal. The item contribution to alpha was explored, along with the frequencies of each item. It was determined that the three items about severe acts of PVA had essentially no variance. Consequently, those three items were dropped from the measure, and the alpha was recalculated for the three

remaining items about ordinary acts of PVA (i.e., “Threatened to slap him/her but did not actually do it;” “Threatened to withhold a meal;” and “Threatened to limit use of his/her favorite object”). The resulting alpha was .321, which still did not meet the standard for minimum alpha level. It is possible that the alpha level is so low due to these acts of PVA tapping distinct dimensions of this category of PVA. It was determined that the score from the ordinary items would be utilized in tests of construct validity with the acknowledgement that there might not be sufficient power to detect the expected relationships.

For the CTS-PC—Physical Assault Scale, the initial alpha level was .399 when including all thirteen items on the scale. This scale consists of items at different levels of severity, specifically minor, severe, and extreme. Seven of the thirteen items on the scale are part of the severe or extreme subscales. Less than 2% of the sample reported using any of these seven acts in the past month. Consequently, it was determined that the scale should be narrowed to the six items on the minor (corporal punishment) subscale. For these six items, the percentage of the sample that reported using these acts of PPA in the past month ranged from 1.5% to 27%, depending on the act. The alpha level for the revised scale was .400, which essentially did not differ from the initial alpha. However, the narrowing of the items to the minor subscale provided more clear interpretation with regard to level of severity of PPA use. Alpha levels lower than standard values for inferring adequate scale consistency are considered acceptable for the CTS-PC due to its scales containing relatively independent behaviors grouped together into categories (Straus, Hamby, & Warren, 2003). Therefore, this revised scale was utilized in tests of

construct validity with the acknowledgement that there might not be sufficient power to detect the expected relationships.

Tests of construct validity involved assessing both convergent validity and discriminant validity by examining Pearson correlations computed separately for beliefs about ordinary PVA and beliefs about severe PVA for each of the constructs, namely beliefs, parental aggression, general aggression, parental stress, and social desirability. As described in the previous chapter, the measures of constructs that should be most closely related to the two BPHS scales (i.e., belief in corporal punishment and rigid expectations of children) were expected to have the highest correlations. Modest correlations were expected between measures of different constructs that are theoretically related (i.e., parental aggression and general aggression). Nonsignificant correlations were expected between measures of unrelated constructs (i.e., parental stress and social desirability). For the results presented in Table 6, the measures of each construct are listed according to the order of expected pattern of relationships described in detail in the previous chapter. (See Appendix F for the descriptive statistics for each measure.)

The results from Pearson correlations showed that scores from the *Beliefs about Ordinary PVA Scale* and the *Beliefs about Severe PVA Scale* correlated with each other ($r = .227, p < .01$) at a level that indicates the scales are assessing distinct, yet related, constructs. Furthermore, beliefs about severe PVA correlated most closely with beliefs about ordinary PVA, while beliefs about ordinary PVA correlated most closely with related beliefs (i.e., belief in corporal punishment and rigid expectations of children).

Table 6

Correlations of Other Constructs Among Beliefs about Ordinary PVA and Beliefs about Severe PVA in Order of Expected Relatedness

Construct	Expected Order of Relationships for Beliefs about Ordinary PVA Scale	<i>r</i>	Expected Order of Relationships for Beliefs about Severe PVA Scale	<i>r</i>
Beliefs	AAPI-2—Strong Belief in the Use and Value of Corporal Punishment Scale	-.356**	CAP—Rigidity Scale	-.109*
	CAP—Rigidity Scale	-.239**	AAPI-2—Strong Belief in the Use and Value of Corporal Punishment Scale	-.125*
Parental Aggression	CTS-PC—Psychological Aggression Scale	-.212**	CTS-PC—Psychological Aggression Scale	-.199**
	Ordinary PVA Parenting Scale—Overreactivity	-.198**	Ordinary PVA Parenting Scale—Overreactivity	-.103
	CTS-PC—Physical Assault Scale (Minor)	-.239**	CTS-PC—Physical Assault Scale (Minor)	-.117*
		-.154**		-.070
General Aggression	Deffenbacher Driving Anger Scale—Short Form	-.033	Deffenbacher Driving Anger Scale—Short Form	-.025
Parental Stress	PSI-SF—Parental Distress Scale	.115*	PSI-SF—Parental Distress Scale	.023
	Perceived Stress Scale	.044	Perceived Stress Scale	-.019
Social Desirability	Marlowe-Crowne Social Desirability Scale—Short Form	.025	Marlowe-Crowne Social Desirability Scale—Short Form	-.001

* $p < .05$, ** $p < .01$, *** $p < .001$

With regard to related beliefs, the results for the *Beliefs about Ordinary PVA* Scale and the *Beliefs about Severe PVA* Scale are similar to what was expected. Both beliefs about ordinary PVA and beliefs about severe PVA had a statistically significant

inverse relationship with belief in corporal punishment and rigid expectations of children. Additionally, as expected, the results provide evidence that beliefs about ordinary PVA harm are more highly correlated with belief in corporal punishment ($r = -.356, p < .01$) than with rigid expectations of children ($r = -.239, p < .01$). Contrary to expectations, beliefs about severe PVA were more highly correlated with belief in corporal punishment ($r = -.125, p < .05$) than rigid expectations of children ($r = -.109, p < .05$).

In terms of parental aggression, the results for the *Beliefs about Ordinary PVA* Scale indicate that beliefs about ordinary PVA were negatively correlated with use of PVA and use of PPA. Contrary to expectation, the highest correlation of the PVA measures was found with the Parenting Scale—Overreactivity measure ($r = -.239, p < .01$), as compared to the CTS-PC—Psychological Aggression Scale ($r = -.212, p < .01$) and the Ordinary PVA items ($r = -.198, p < .01$). These latter two measures were expected to be more highly correlated with beliefs about ordinary PVA than the Parenting Scale—Overreactivity measure only because of method variance. All three measures of use of PVA were similarly correlated with beliefs about ordinary PVA. Consistent with expectations, use of PPA was significantly correlated with beliefs about ordinary PVA at a lower level than all three measures of use of PVA ($r = -.154, p < .01$).

Consistent with the findings for the *Beliefs about Ordinary PVA* Scale, the results for the *Beliefs about Severe PVA* Scale provide evidence of negative correlations between beliefs about severe PVA and use of PVA, as measured by the CTS-PC—Psychological Aggression Scale ($r = -.199, p < .01$) and the Parenting Scale—Overreactivity ($r = -.117, p < .05$). However, in this instance, the CTS-PC—Psychological Aggression Scale was more highly correlated with the scale than the Parenting Scale—Overreactivity measure

of PVA use. Beliefs about severe PVA were not significantly correlated with the other measure of PVA use, Ordinary PVA items, or the use of PPA.

Since the measure of general aggression involved a different type of aggression than the aggression experienced in a parent-child relationship, it was expected to be less highly correlated to beliefs about ordinary PVA and beliefs about severe PVA than parental aggression. The results indicated that general aggression was not significantly correlated with either beliefs about ordinary PVA or beliefs about severe PVA. Parental stress, as measured by the PSI-SF—Parental Distress Scale and the Perceived Stress Scale, was not expected to be related to either beliefs about ordinary PVA or beliefs about severe PVA. The results supported this expectation in three of the four correlations. Beliefs about ordinary PVA were significantly correlated with the PSI-SF—Parental Distress Scale ($r = .115, p < .05$). Finally, as expected, neither beliefs about ordinary PVA nor beliefs about severe PVA were correlated with social desirability.

To summarize, convergent validity was supported through evidence of expected relationships to theoretically similar constructs. Beliefs about severe PVA correlated most closely with beliefs about ordinary PVA. Both beliefs about ordinary PVA and beliefs about severe PVA were correlated with related beliefs about parental aggression (i.e., belief in corporal punishment and rigid expectations of children). For beliefs about ordinary PVA, the highest correlations were found for the related beliefs construct. Furthermore, beliefs about ordinary PVA and beliefs about severe PVA were correlated with parental aggression. Beliefs about ordinary PVA were significantly related to all four measures of parental aggression and, comparatively, most closely related to use of

PVA. Beliefs about severe PVA were significantly correlated with only two of the three measures of use of PVA, but not use of PPA.

Discriminant validity was supported through evidence of the scales being sufficiently divergent from measures of other parenting beliefs, parental aggression, general aggression, parental stress, and social desirability. With regard to other parenting beliefs, beliefs about ordinary PVA were more closely related to beliefs about corporal punishment than rigid expectations of children. For beliefs about ordinary PVA, use of PVA was more closely related than use of PPA. Beliefs about severe PVA only were correlated with measures of parental aggression that included PVA acts, while they were not related to use of PPA. Neither beliefs about ordinary PVA nor beliefs about severe PVA were correlated with general aggression or social desirability. Beliefs about severe PVA were not correlated with parental stress. Beliefs about ordinary PVA were modestly related to the Parental Distress Scale ($r = .115, p < .05$), but were unrelated to parental stress as measured by the Perceived Stress Scale ($r = .044, ns$).

Upon completion of the construct validity tests, further exploratory analyses were conducted to assess whether there were differences in the scores for the two BPHS scales based upon child age group, child gender, family type, race, SES, and parent gender. The results from a series of ANOVAs are presented in Table 7. In interpreting the findings, adjusted alpha levels were computed for child age group ($\alpha = .0125$), child gender ($\alpha = .025$), family type ($\alpha = .0125$), race ($\alpha = .007$), and parent gender ($\alpha = .025$). The significance levels meeting these criteria are in boldface in the table. Examination of a priori tests confirmed differences in mean scores between the groups being compared were not due to chance. Correlations were computed to determine whether the scores of

either BPHS scale were associated with SES. It was determined that neither the *Beliefs about Ordinary PVA* Scale ($r = -.045, ns$) nor the *Beliefs about Severe PVA* Scale ($r = .050, ns$) were significantly correlated with SES.

Table 7

One-Way ANOVA Results for Beliefs about Ordinary and Severe PVA

	Sum of Squares	df	Mean Square	F	p
<i>Beliefs about Ordinary PVA</i>					
Child Age Group – Between Groups	3.489	3	1.163	.524	.666
Within Groups	818.431	369	2.218		
Total	821.920	372			
Child Gender – Between Groups	6.198	1	6.198	2.770	.097
Within Groups	749.689	335	2.238		
Total	755.887	336			
Family Type – Between Groups	4.602	3	1.534	.692	.557
Within Groups	811.071	366	2.216		
Total	815.673	369			
Race – Between Groups	15.026	6	2.504	1.136	.341
Within Groups	806.894	366	2.205		
Total	821.920	372			
Parent Gender – Between Groups	5.474	1	5.474	2.487	.116
Within Groups	812.217	369	2.201		
Total	817.691	370			
<i>Beliefs about Severe PVA</i>					
Child Age Group – Between Groups	.144	3	.048	5.172	.002
Within Groups	3.416	369	.009		
Total	3.560	372			
Child Gender – Between Groups	.003	1	.003	.325	.569
Within Groups	2.938	335	.009		
Total	2.941	336			
Family Type – Between Groups	.039	3	.013	1.348	.259
Within Groups	3.516	366	.010		
Total	3.555	369			
Race – Between Groups	.182	6	.030	3.295	.004
Within Groups	3.377	366	.009		
Total	3.560	369			
Parent Gender – Between Groups	.053	1	.053	5.539	.019
Within Groups	3.502	369	.009		
Total	3.555	370			

The results of these analyses indicated that there were no differences in mean scores for the *Beliefs about Ordinary PVA* Scale based upon child age group, child gender, family type, race, SES, or parent gender. With regard to the *Beliefs about Severe PVA* Scale, there were no mean differences in scores based upon child gender, family type, or SES. Consequently, these demographic variables were not controlled with regard to beliefs about ordinary PVA or beliefs about severe PVA, respectively, during subsequent concurrent validity testing. Mean differences in scores were indicated for the *Beliefs about Severe PVA* Scale for child age group, race, and parent gender. These three variables were controlled when beliefs about severe PVA were examined during concurrent validity testing.

Evaluation of the Concurrent Validity of the BPHS

The refined *Beliefs about Ordinary PVA* Scale and the complete *Beliefs about Severe PVA* Scale were used in concurrent validity tests of parental stress as a moderator of the relationship between beliefs about PVA harm and use of PVA. The initial plan for these analyses was to utilize scores from each of the measures as indicators for the respective latent constructs, namely Beliefs about PVA Harm, Parental Stress, and Use of PVA. As described earlier, the *Beliefs about Severe PVA* Scale serves as an index, rather than a scale with psychometric properties, and, thus, the two BPHS scales could not be utilized as indicators of the latent construct, Beliefs about PVA Harm. Consequently, the revised plan was to utilize scores from each of the measures as depicted in Figure 4.

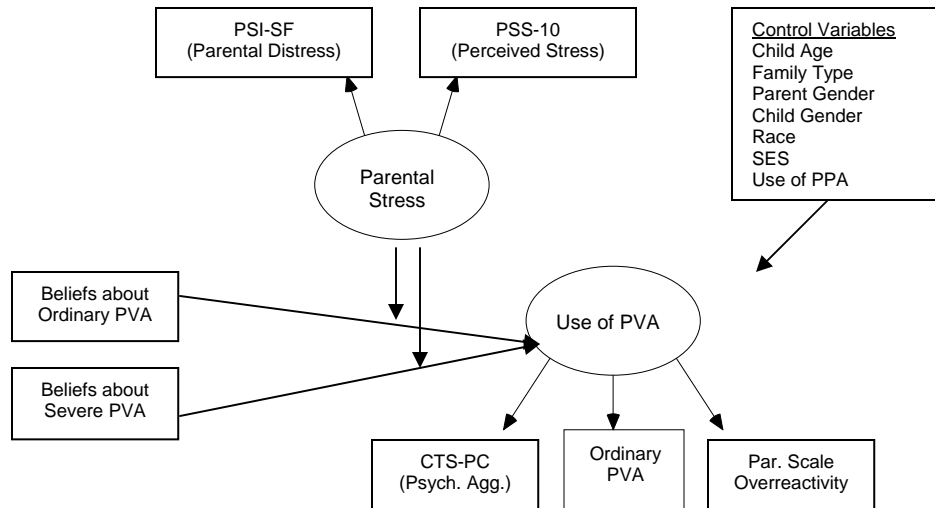


Figure 4. *The revised planned empirical model of the key constructs*

CFAs were conducted to assess whether the three revised measures of use of PVA could serve as indicators of the latent construct, Use of PVA, as well as to assess whether the two measures of parental stress could be modeled as indicators of the latent construct, Parental Stress. The results from these CFAs indicated that use of the Ordinary Items to assess PVA use in concurrent validity tests was not supported, so that measure was not utilized in subsequent analyses. Findings from further CFAs confirmed the need to drop one item, as described above in relation to construct validity tests, from the CTS-PC—Psychological Aggression Scale and the Parenting Scale—Overreactivity, respectively, to improve the assessments of use of PVA from those two measures. However, when examined as indicators of ‘Use of PVA,’ the use of that latent construct was not supported by fit indices (CFI = 1.000; RMSEA = .166). Similarly, the use of the latent construct, Parental Stress, indicated by the two measures of parental stress was not supported (CFI = 1.000; RMSEA = .393). Consequently, assessments of concurrent

validity for the two BPHS scales involved path analyses, rather than structural equation modeling.

Prior to conducting these path analyses, further exploratory analyses involved examining the two measures of use of PVA to determine the need to control for the effect of demographic variables (e.g., child age group, child gender, family type, race, SES, and parent gender), as well as use of PPA. The results from a series of ANOVAs are presented in Table 8. In interpreting the findings, adjusted alpha levels were computed for child age group ($\alpha = .0125$), child gender ($\alpha = .025$), family type ($\alpha = .0125$), race ($\alpha = .007$), parent gender ($\alpha = .025$). The significance levels meeting these criteria are in boldface in the table. Examination of a priori tests confirmed differences in mean scores between the groups being compared were not due to chance.

Correlations were computed to determine whether the scores of either measure of use of PVA were associated with SES and/or use of PPA. It was determined that the CTS-PC—Psychological Aggression Scale was significantly correlated with SES ($r = -.124, p < .05$), but the Parenting Scale—Overreactivity measure ($r = .012, ns$) was not. Further, both the CTS-PC—Psychological Aggression Scale ($r = .438, p < .01$) and the Parenting Scale—Overreactivity measure ($r = .193, p < .01$) were significantly correlated with use of PPA.

The findings supported the need to control for SES, parent gender, and use of PPA on scores from the CTS-PC—Psychological Aggression Scale, and to control for use of PPA on scores from Parenting Scale—Overreactivity. These variables were controlled for these measures of use of PVA during concurrent validity testing.

Table 8

One-Way ANOVA Results for Use of PVA Measures

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
<i>CTS-PC—Psychological Aggression</i>					
Child Age Group – Between Groups	30.415	3	10.138	2.618	.051
Within Groups	1304.822	337	3.872		
Total	1335.237	340			
Child Gender – Between Groups	5.232	1	5.232	1.324	.251
Within Groups	1311.666	332	3.951		
Total	1316.899	333			
Family Type – Between Groups	14.489	3	4.830	1.226	.300
Within Groups	1319.447	335	3.939		
Total	1333.936	338			
Race – Between Groups	56.537	6	9.423	2.461	.024
Within Groups	1278.700	334	3.828		
Total	1335.237	340			
Parent Gender – Between Groups	35.578	1	35.578	9.237	.003
Within Groups	1298.000	337	3.852		
Total	1333.578	338			
<i>Parenting Scale—Overreactivity</i>					
Child Age Group – Between Groups	2.811	3	.937	.901	.441
Within Groups	348.383	335	1.040		
Total	351.195	338			
Child Gender – Between Groups	.234	1	.234	.223	.637
Within Groups	346.329	330	1.049		
Total	346.563	331			
Family Type – Between Groups	2.303	3	.768	.737	.531
Within Groups	346.836	333	1.042		
Total	349.139	336			
Race – Between Groups	11.806	6	1.968	1.925	.076
Within Groups	339.389	332	1.022		
Total	351.195	338			
Parent Gender – Between Groups	1.093	1	1.093	1.047	.307
Within Groups	349.710	335	1.044		
Total	350.803	336			

Hypothesis 2: After controlling for the effects of potential confounds (e.g., child age, race, SES, use of PPA, and parent gender), it is expected that beliefs about PVA harm will explain variance in the use of PVA. Parental beliefs about PVA harm were expected to be inversely related to reported levels of use of PVA. Specifically, parents who express belief that harm comes from PVA at a lower threshold of use, thereby indicating they have a higher degree of belief about harm, were expected to report lower levels of PVA use with their children. Those expectations were the same for both beliefs about ordinary PVA and beliefs about severe PVA with regard to any measure of use of PVA. Based upon findings from earlier phases of the analyses, the confounding influences of child age, race, and parent gender were controlled in the *Beliefs about Severe PVA* Scale. SES, parent gender, and use of PPA were controlled in use of PVA, as measured by the CTS-PC—Psychological Aggression Scale. Use of PPA was controlled in use of PVA, as measured by Parenting Scale—Overreactivity. These variables were controlled by residualizing scores of the manifest variables that have control variable effects.

Initially, path analyses involved assessing the relationships for beliefs about ordinary PVA and beliefs about severe PVA, as measured by the two BPHS scales, with use of PVA, as measured by the CTS-PC—Psychological Aggression Scale. The estimates for the relationship between ‘beliefs about ordinary PVA’ and ‘use of PVA’ are as follows: $B = -.093$, $SE B = .036$, $\beta = -.140$, $Critical Ratio = -2.613$, $p < .01$. The estimates for the relationship between ‘beliefs about severe PVA’ and ‘use of PVA’ are as follows: $B = -.169$, $SE B = .053$, $\beta = -.169$, $Critical Ratio = -3.168$, $p < .01$. Therefore, as depicted in Figure 5, the paths from both ‘beliefs about ordinary PVA’ and ‘beliefs

about severe PVA’ to ‘use of PVA’ were significant and in the expected direction. They explain 4.8% of the variance in ‘use of PVA,’ when it is measured by the CTS-PC— Psychological Aggression Scale.

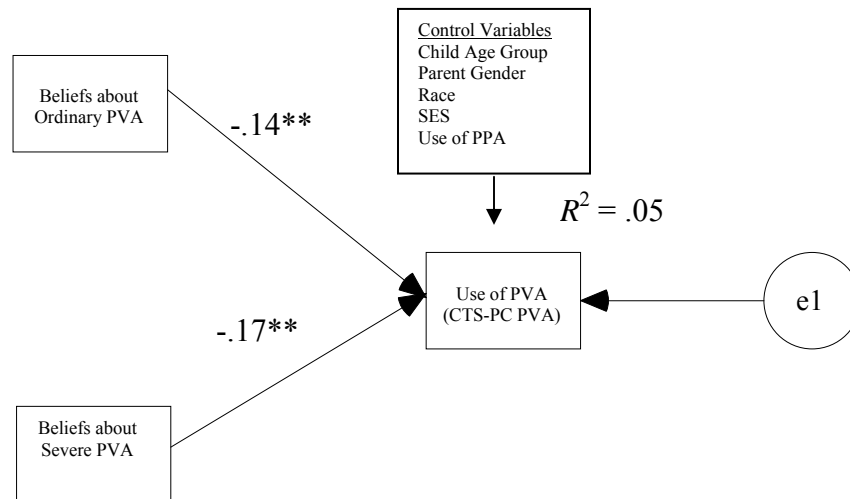


Figure 5. Standardized path coefficients for the path analysis of the belief-behavior link with the CTS-PC Psychological Aggression Scale as the measure of use of PVA (Note. * $p < .05$, ** $p < .01$, *** $p < .001$)

A subsequent path analysis involved assessing these relationships when use of PVA is measured by the Parenting Scale—Overreactivity. This second model was part of the analyses to permit assessment of whether the relationships of beliefs about ordinary PVA and beliefs about severe PVA with use of PVA were dependent upon the measure of PVA use. As described in prior chapters, the CTS-PC items and response format were closely linked to the development of the BPHS. Tests of this alternative model were conducted to rule out the possibility of shared measure variance inflating the findings. The estimates for the relationship between ‘beliefs about ordinary PVA’ and ‘use of PVA’ are as follows: $B = -.132$, $SE B = .036$, $\beta = -.198$, $Critical Ratio = -3.719$, $p < .001$. The estimates for the relationship between ‘beliefs about severe PVA’ and ‘use of PVA’ are as follows: $B = -.080$, $SE B = .053$, $\beta = -.080$, $Critical Ratio = -1.509$, $p = .131$.

Therefore, the path from ‘beliefs about ordinary PVA’ to ‘use of PVA’ was significant and in the expected direction. The path from ‘beliefs about severe PVA’ to ‘use of PVA’ was not significant. The model depicted in Figure 6 explains 4.6% of the variance in ‘use of PVA,’ when measured by Parenting Scale—Overreactivity.

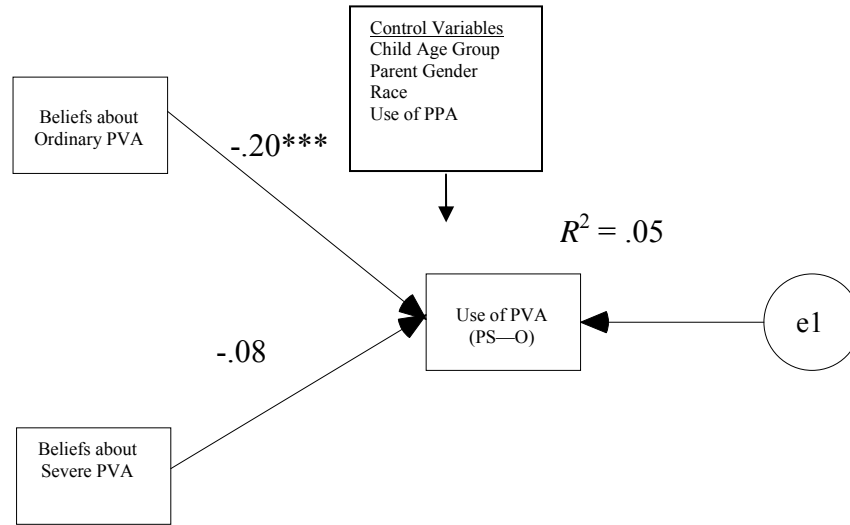


Figure 6. Standardized path coefficients for the path analysis of the belief-behavior link with the Parenting Scale—Overreactivity as the measure of use of PVA

Hypothesis 3: It is expected that the level of parental stress moderates the relationship between beliefs about PVA harm and use of PVA, such that level of parental stress changes the nature of the belief-behavior link. Under conditions of high stress, it is expected that the association between beliefs about PVA harm and use of PVA will be smaller than when there are low levels of stress. To test for moderation, four interaction terms were created in SPSS for each possible combination of the two BPHS scales with the two measures of parental stress. The direct effects of beliefs about ordinary PVA, beliefs about severe PVA, and the two parental stress measures, along with the interaction effects, on use of PVA were estimated with the total sample through a series of path analyses.

The first set of path analyses to assess the role of parental stress as a moderator of the relation between beliefs about PVA harm and use of PVA involved using the CTS-PC—Psychological Aggression Scale as the measure of use of PVA. A series of path analyses were conducted for beliefs about ordinary PVA with one interaction term at a time along with the corresponding stress measure, and then the same steps were taken for beliefs about severe PVA. For each of these four path analyses, none of the four interaction terms were significant. Two additional path analyses were conducted in this set of analyses to combine beliefs about ordinary PVA and beliefs about severe PVA into the same analyses. One involved beliefs about ordinary PVA and beliefs about severe PVA, along with the Perceived Stress Scale and the two corresponding interaction terms, and the other path analysis involved both sets of beliefs, the Parental Distress Scale, and the two corresponding interaction terms, as described below. For each model, there were high correlations between four of the five estimates involving the variables that were part of the respective interactions, and the covariance arrows for those highly correlated estimates are depicted within the models.

When examining the role of perceived stress, the paths to ‘use of PVA’ from ‘beliefs about ordinary PVA’ ($B = -.228$, $SE B = .093$, $\beta = -.343$, $Critical Ratio = -2.441$, $p < .05$) and ‘beliefs about severe PVA’ ($B = -.385$, $SE B = .177$, $\beta = -.387$, $Critical Ratio = -2.175$, $p < .05$) were statistically significant. The path from ‘perceived stress’ to ‘use of PVA’ ($B = -.140$, $SE B = .271$, $\beta = -.083$, $Critical Ratio = -.517$, $p = .605$) was not significant. When considering interaction effects, the paths to ‘use of PVA’ from the two interaction terms (Beliefs about Ordinary PVA X Perceived Stress: $B = .087$, $SE B = .059$, $\beta = .304$, $Critical Ratio = 1.476$, $p = .140$; Beliefs about Severe PVA X

Perceived Stress: $B = .157$, $SE B = .117$, $\beta = .239$, $Critical Ratio = 1.342$, $p = .180$) were not significant. The model accounts for 7.9% of the variance in ‘use of PVA.’ Figure 7 depicts the results for assessments of perceived stress as a moderator of the belief-behavior link when use of PVA is measured by the CTS-PC—Psychological Aggression Scale.

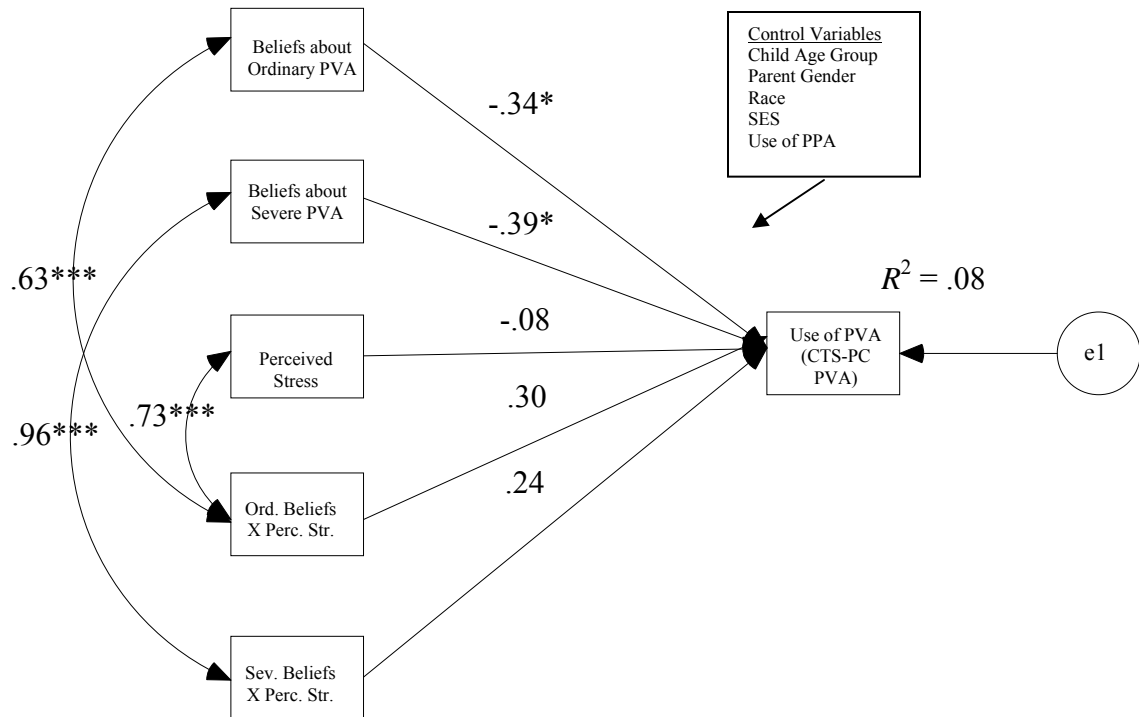


Figure 7. Standardized path coefficients for the path analysis of perceived stress moderating the link of beliefs about ordinary PVA and beliefs about severe PVA with the use of PVA as measured by the CTS-PC Psychological Aggression Scale

When examining the role of parental distress, the results of the path analysis indicate a trend towards significance for the paths of both sets of beliefs. Specifically, the estimates for the path from ‘beliefs about ordinary PVA’ to ‘use of PVA’ are as follows: $B = -.216$, $SE B = .126$, $\beta = -.323$, $Critical Ratio = -1.707$, $p = .088$. For the path from ‘beliefs about severe PVA’ to ‘use of PVA,’ the estimates are: $B = -.360$, $SE B = .198$,

$\beta = -.361$, *Critical Ratio* = -1.820, $p = .069$. The remaining paths were not statistically significant. The path from ‘parental distress’ to ‘use of PVA’ had the following estimates: $B = .064$, $SE B = .285$, $\beta = .039$, *Critical Ratio* = .226, $p = .821$. When considering interaction effects, the estimates for the paths to ‘use of PVA’ from the two interaction terms are the following: Beliefs about Ordinary PVA X Parental Distress $\rightarrow B = .053$, $SE B = .061$, $\beta = .219$, *Critical Ratio* = .875, $p = .381$; Beliefs about Severe PVA X Parental Distress $\rightarrow B = .110$, $SE B = .106$, $\beta = .207$, *Critical Ratio* = 1.042, $p = .297$. Figure 8 depicts the results for assessments of parental distress as a moderator of the belief-behavior link when use of PVA is measured by the CTS-PC—Psychological Aggression Scale. The model accounts for 9.1% of the variance in ‘use of PVA.’

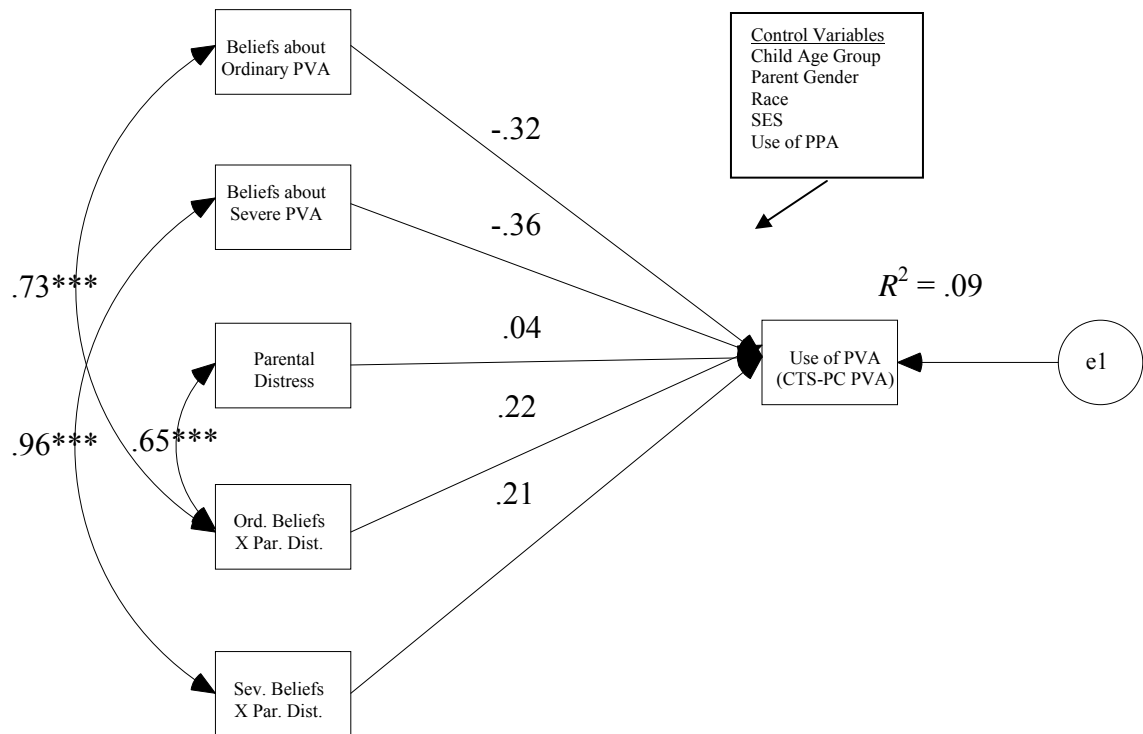


Figure 8. *Standardized path coefficients for the path analysis of parental distress moderating the link of beliefs about ordinary PVA and beliefs about severe PVA with the use of PVA as measured by the CTS-PC Psychological Aggression Scale*

As was done for H2, the second set of path analyses to assess the moderating role of parental stress involved using the Parenting Scale—Overreactivity as a measure of use of PVA. These analyses were planned in order to rule out the possibility of shared measure variance affecting the findings concerning the moderating role of parental stress. To be consistent with the steps taken in the first set of analyses, a series of path analyses were conducted for beliefs about ordinary PVA with one interaction term at a time along with the corresponding stress measure, and then the same steps were taken to examine beliefs about severe PVA. In all four path analyses, none of the interaction terms were statistically significant. As was done with the first set of analyses, two subsequent path analyses were conducted. One involved beliefs about ordinary PVA and beliefs about severe PVA, along with the Perceived Stress Scale and the two corresponding interaction terms, and the other path analysis involved both sets of beliefs, the Parental Distress Scale, and the two corresponding interaction terms. For each model, there were high correlations between four of the five estimates involving the variables that were part of the respective interactions, and the covariance arrows for those highly correlated estimates are depicted within the models. The results are described below.

In considering perceived stress, the results of the path analysis differ somewhat from the results of the path analysis utilizing the other measure for use of PVA. Specifically, the path from ‘beliefs about ordinary PVA’ to ‘use of PVA’ ($B = -.198$, $SE B = .088$, $\beta = -.296$, $Critical Ratio = -2.261$, $p < .05$) was statistically significant; however, the path from ‘beliefs about severe PVA’ to ‘use of PVA’ ($B = -.133$, $SE B = .166$, $\beta = -.133$, $Critical Ratio = -.798$, $p = .425$) was not significant. Additionally, the path from ‘perceived stress’ to ‘use of PVA’ ($B = .483$, $SE B = .254$, $\beta = .283$, $Critical$

Ratio = 1.899, $p = .058$) indicated a trend towards significance. When considering interaction effects, the paths to ‘use of PVA’ from the two interaction terms (Beliefs about Ordinary PVA X Perceived Stress: $B = .035$, $SE B = .055$, $\beta = .120$, *Critical Ratio* = .627, $p = .531$; Beliefs about Severe PVA X Perceived Stress: $B = .057$, $SE B = .110$, $\beta = .086$, *Critical Ratio* = .518, $p = .605$) were not significant. The model accounts for 19% of the variance in ‘use of PVA.’ Figure 9 depicts the results for assessments of perceived stress as a moderator of the belief-behavior link when use of PVA is measured by Parenting Scale-Overreactivity.

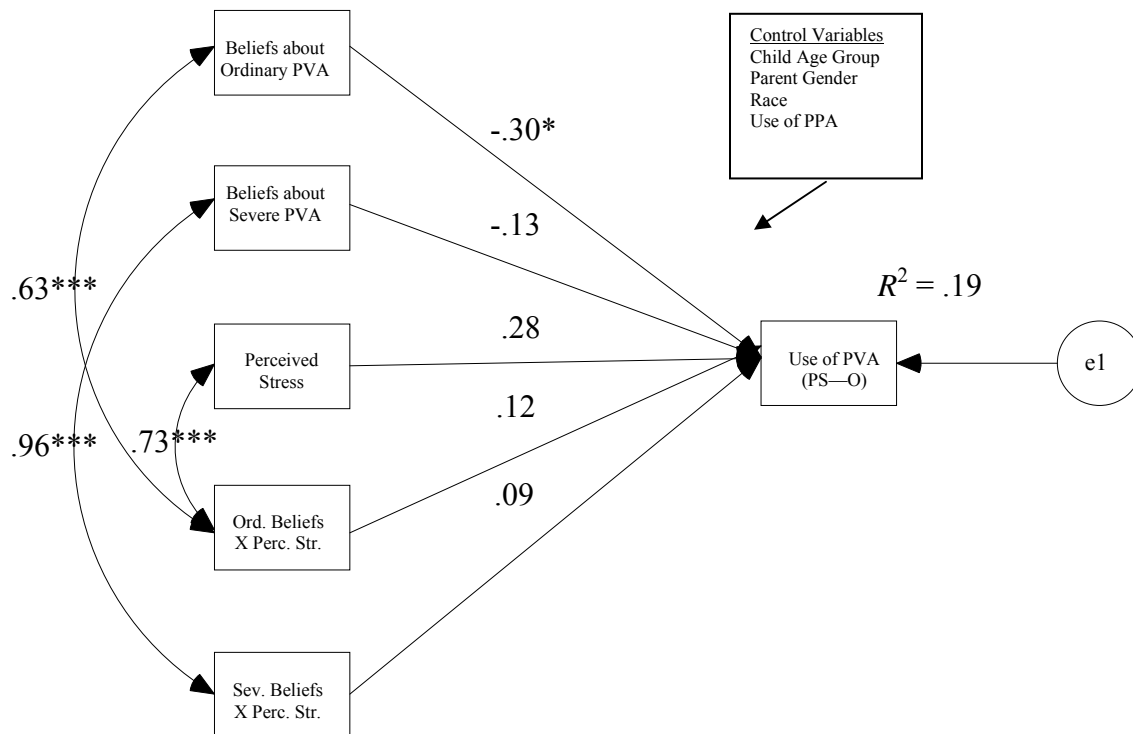


Figure 9. Standardized path coefficients for the path analysis of perceived stress moderating the link of beliefs about ordinary PVA and beliefs about severe PVA with the use of PVA as measured by Parenting Scale—Overreactivity

In considering parental distress with the Parenting Scale—Overreactivity measure of PVA use, the findings differ slightly from that of perceived stress described above. Specifically, the path from ‘beliefs about ordinary PVA’ to ‘use of PVA’ ($B = -.277$, $SE B = .125$, $\beta = -.412$, $Critical Ratio = -2.208$, $p < .05$) was statistically significant; however, the path to ‘use of PVA’ from ‘beliefs about severe PVA’ ($B = -.057$, $SE B = .197$, $\beta = -.057$, $Critical Ratio = -.290$, $p = .772$) was not. The path from ‘parental distress’ to ‘use of PVA’ ($B = .084$, $SE B = .283$, $\beta = .050$, $Critical Ratio = .296$, $p = .767$) also was not statistically significant. When considering interaction effects, the paths to ‘use of PVA’ from the two interaction terms (Beliefs about Ordinary PVA X Parental Distress: $B = .064$, $SE B = .061$, $\beta = .262$, $Critical Ratio = 1.064$, $p = .288$; Beliefs about Severe PVA X Parental Distress: $B = -.009$, $SE B = .105$, $\beta = -.016$, $Critical Ratio = -.083$, $p = .934$) were not significant. The model accounts for 10.6% of the variance in ‘use of PVA.’ Figure 10 depicts the results for assessments of parental distress as a moderator of the belief-behavior link when use of PVA is measured by Parenting Scale-Overreactivity.

To summarize the findings for H3, in the simplest path analyses, none of the interaction terms were statistically significant regardless of the measure of use of PVA or the measure of parental stress. When both sets of beliefs were considered within the same path analyses, the results confirmed the findings from earlier analyses. Consequently, it was concluded that these data do not support perceived stress or parental distress as a moderator of the relationship between either beliefs about ordinary PVA or beliefs about severe PVA with use of PVA, as measured by either scale.

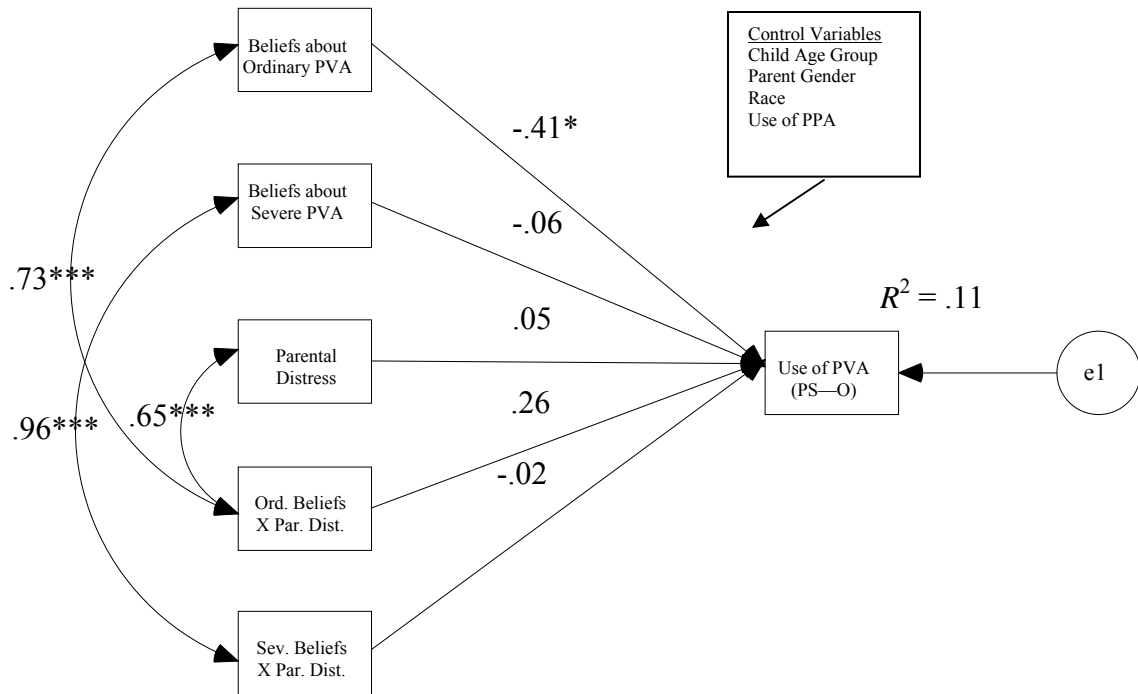


Figure 10. Standardized path coefficients for the path analysis of parental distress moderating the link of beliefs about ordinary PVA and beliefs about severe PVA with the use of PVA as measured by Parenting Scale—Overreactivity

Further efforts to evaluate the role of parental stress in relation to beliefs about PVA harm and use of PVA led to the evaluation of two additive models. The first path analysis involved using the CTS-PC—Psychological Aggression Scale as the measure of use of PVA. The findings from that path analysis indicated that three of the four paths were statistically significant. Specifically, the estimates for the path from ‘beliefs about ordinary PVA’ to ‘use of PVA’ are as follows: $B = -.107$, $SE B = .035$, $\beta = -.161$, $Critical Ratio = -3.064$, $p < .01$. For the path from ‘beliefs about severe PVA’ to ‘use of PVA,’ the estimates are as follows: $B = -.160$, $SE B = .052$, $\beta = -.161$, $Critical Ratio = -3.060$, $p < .01$. The path from ‘perceived stress’ to ‘use of PVA’ had the following estimates: $B = .077$, $SE B = .089$, $\beta = .046$, $Critical Ratio = .868$, $p = .385$. The path from ‘parental distress’ to ‘use of PVA’ had the following estimates: $B = .265$, $SE B = .087$,

$\beta = .160$, *Critical Ratio* = 3.047, $p < .01$. The significant paths for ‘beliefs about ordinary PVA,’ ‘beliefs about severe PVA,’ and ‘parental distress’ were in the expected direction. The model accounts for 8% of the variance in ‘use of PVA.’ Figure 11 depicts the results for assessments of this additive model when use of PVA is measured by the CTS-PC—Psychological Aggression Scale.

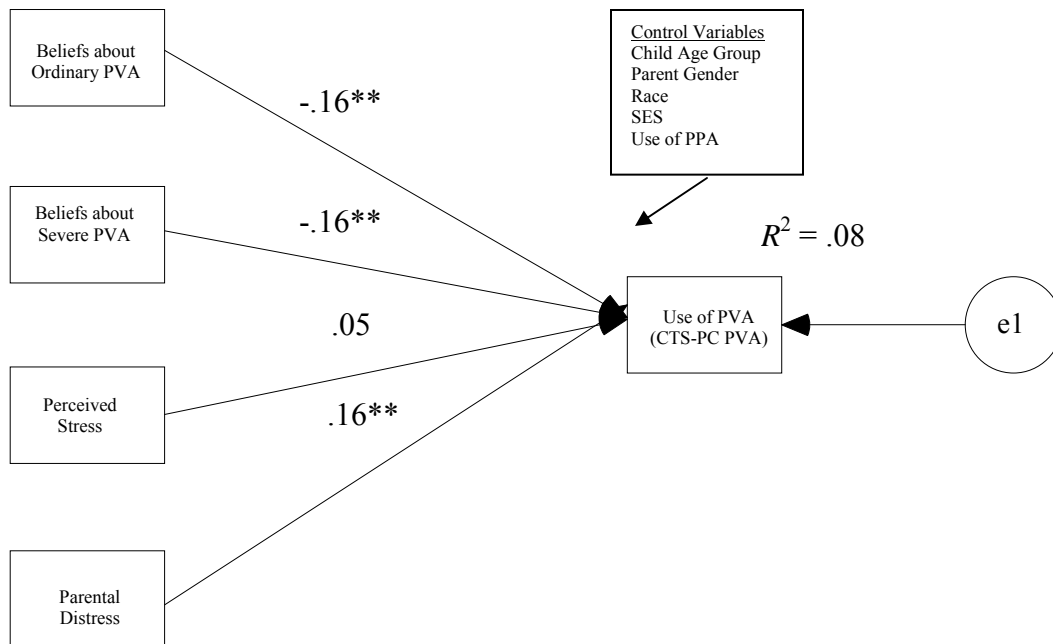


Figure 11. *Standardized path coefficients for the path analysis of the additive model with the use of PVA as measured by the CTS-PC Psychological Aggression Scale*

The second path analysis involved using the Parenting Scale—Overreactivity measure of use of PVA. The findings from that path analysis indicated that two of the paths were statistically significant. Specifically, the estimates for the path from ‘beliefs about ordinary PVA’ to ‘use of PVA’ are as follows: $B = -.146$, $SE B = .033$, $\beta = -.216$, *Critical Ratio* = -4.436, $p < .001$. For the path from ‘beliefs about severe PVA’ to ‘use of PVA,’ the estimates are as follows: $B = -.050$, $SE B = .049$, $\beta = -.050$, *Critical Ratio* = -1.014, $p = .310$. The path from ‘perceived stress’ to ‘use of PVA’ had the following

estimates: $B = .665$, $SE B = .084$, $\beta = .387$, $Critical Ratio = 7.945$, $p < .001$. The path from ‘parental distress’ to ‘use of PVA’ had the following estimates: $B = -.042$, $SE B = .082$, $\beta = -.025$, $Critical Ratio = -.509$, $p = .611$. The significant paths for ‘beliefs about ordinary PVA’ and ‘perceived stress’ were in the expected direction. Furthermore, these results contrast with the results from the other path analysis in that a different stress variable is significant. The model accounts for 19.9% of the variance in ‘use of PVA.’ Figure 12 depicts the results for assessments of this additive model when use of PVA is measured by the Parenting Scale—Overreactivity measure.

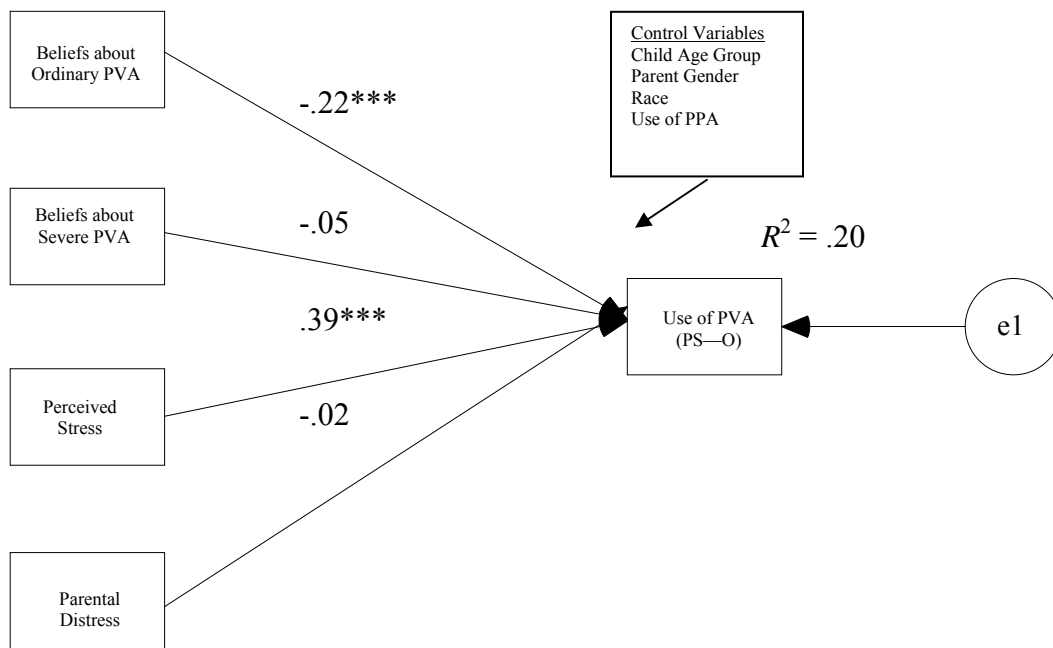


Figure 12. *Standardized path coefficients for the path analysis of the additive model with the use of PVA as measured by Parenting Scale—Overreactivity*

To summarize the results for concurrent validity, the concurrent validity of the two BPHS scales is supported by the demonstration of the statistically significant inverse relationship between beliefs about ordinary PVA and use of PVA, regardless of the measure of use of PVA. Additionally, there was evidence of a statistically significant

inverse relationship between beliefs about severe PVA and use of PVA, as measured by the CTS-PC Psychological Aggression Scale. The two models depicting the paths from both ‘beliefs about ordinary PVA’ and ‘beliefs about severe PVA’ to ‘use of PVA’ explained essentially the same amount of variance – 4.8% when ‘use of PVA’ was measured by the CTS-PC Psychological Aggression Scale versus 4.6% when ‘use of PVA’ was measured by Parenting Scale—Overreactivity. Furthermore, the additive models depicting the direct effects of beliefs about ordinary PVA, beliefs about severe PVA, perceived stress, and parental distress on use of PVA improved the percentage of variance explained in ‘use of PVA.’ The explained variance was as high as 19.9% for the model that involved the Parenting Scale—Overreactivity measure of use of PVA.

Research Question 3: Does the model operate differently for mothers than fathers? Past research on PVA tends to be carried out with mothers only, and, when both mothers and fathers are included, their information tends to be aggregated (Black et al., 2001; Higgins & McCabe, 2003). The integration of research findings from the PPA literature suggests that mothers use PPA more than fathers, but mothers have lower levels of approval for PPA than do fathers (e.g., Day et al., 1998; Douglas, 2006; Flynn, 1998; Straus & Mathur, 1996; Straus & Stewart, 1999), indicating that the belief-behavior link for PVA may operate differently based on gender and should be explored as a research question in the present study.

Analyses to assess gender differences involved repeating the same analytical procedures used for the total sample, but modifying them to compare mothers and fathers. Since the models utilized to test the moderating role of stress did not support perceived stress or parental distress as a moderator of the relationship between beliefs

about ordinary and/or severe PVA with use of PVA, only the two additive models were evaluated with regards to gender differences.

First, analyses to assess the existence of gender differences involved testing the additive model, in which ‘use of PVA’ was measured by the CTS-PC Psychological Aggression Scale, for mothers and fathers separately. As was found for the total sample, the path analysis for mothers shown in Figure 13 indicated three significant paths for ‘beliefs about ordinary PVA,’ ‘beliefs about severe PVA,’ and ‘parental distress.’ All three were in the expected direction. In stark contrast, the path analysis for fathers shown in Figure 14 indicated only one significant path, which was the one from ‘beliefs about severe PVA’ to ‘use of PVA.’ That path was in the expected direction. In comparison to 11.5% of explained variance for ‘use of PVA’ for mothers, 6% of variance for ‘use of PVA’ was explained for fathers, while 8% of the variance was accounted for ‘use of PVA’ with the total sample. These results suggest that the model explains more of the variance in ‘use of PVA’ for mothers.

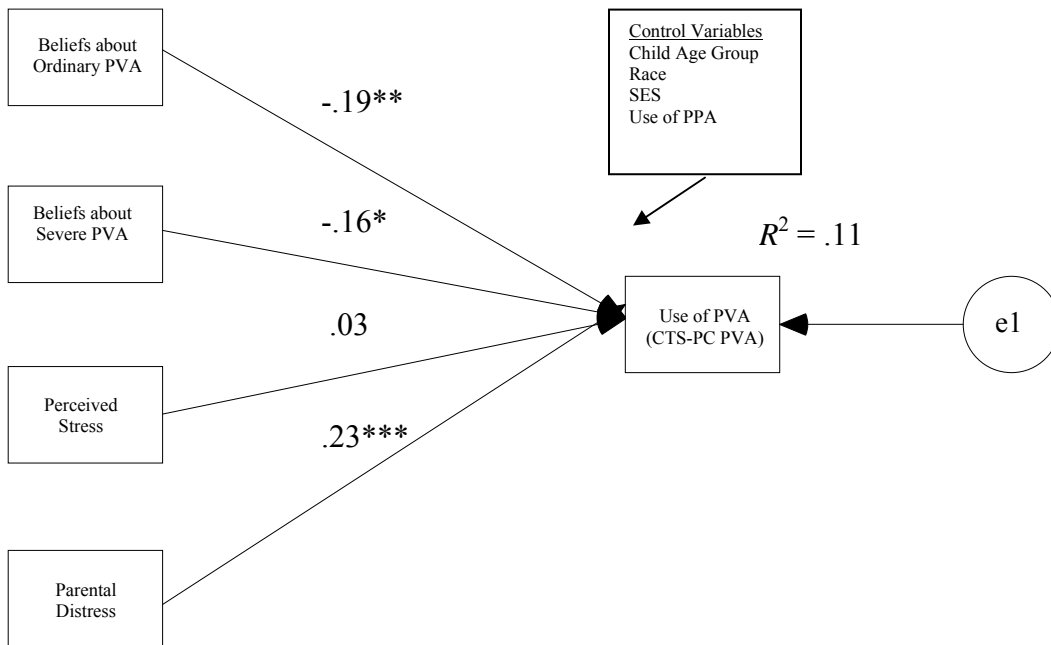


Figure 13. Standardized path coefficients for the path analysis of the additive model for mothers with the use of PVA as measured by the CTS-PC Psychological Aggression Scale

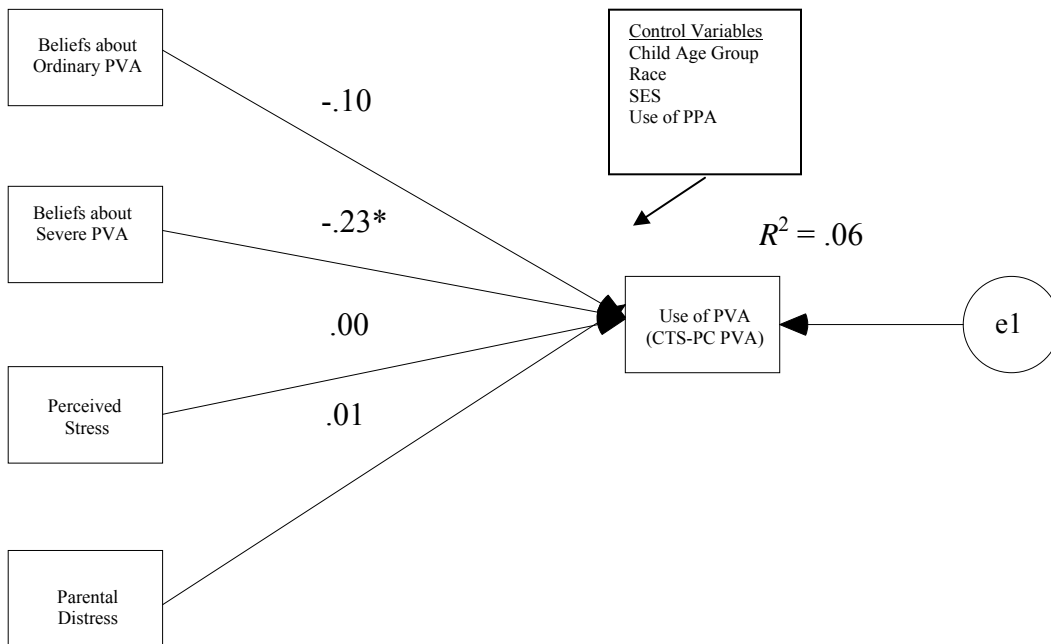


Figure 14. Standardized path coefficients for the path analysis of the additive model for fathers with the use of PVA as measured by the CTS-PC Psychological Aggression Scale

Second, gender differences were tested with the other additive model, in which ‘use of PVA’ was measured by Parenting Scale—Overreactivity. Similar to the analysis of this model with the total sample, the path analysis for mothers shown in Figure 15 indicated the same significant paths for ‘beliefs about ordinary PVA’ and ‘perceived stress.’ The two paths were in the expected direction. For fathers, the path analysis for fathers shown in Figure 16 indicated the same two significant paths as the path analysis with the total sample and the path analysis with mothers. Both were in the expected direction. In comparison to 21.3% of explained variance for ‘use of PVA’ for mothers, 16.7% of variance for ‘use of PVA’ was explained for fathers, while the model accounted for 19.9% of the variance in ‘use of PVA’ with the total sample. These results again suggest that the model explains more of the variance in ‘use of PVA’ for mothers.

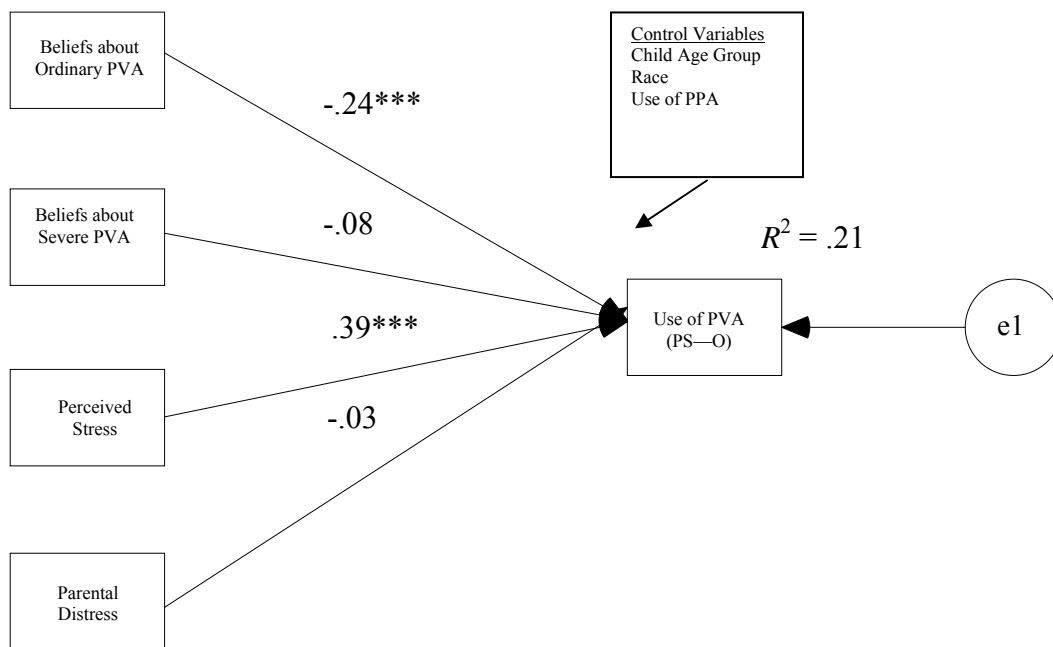


Figure 15. Standardized path coefficients for the path analysis of the additive model for mothers with the use of PVA as measured by Parenting Scale—Overreactivity

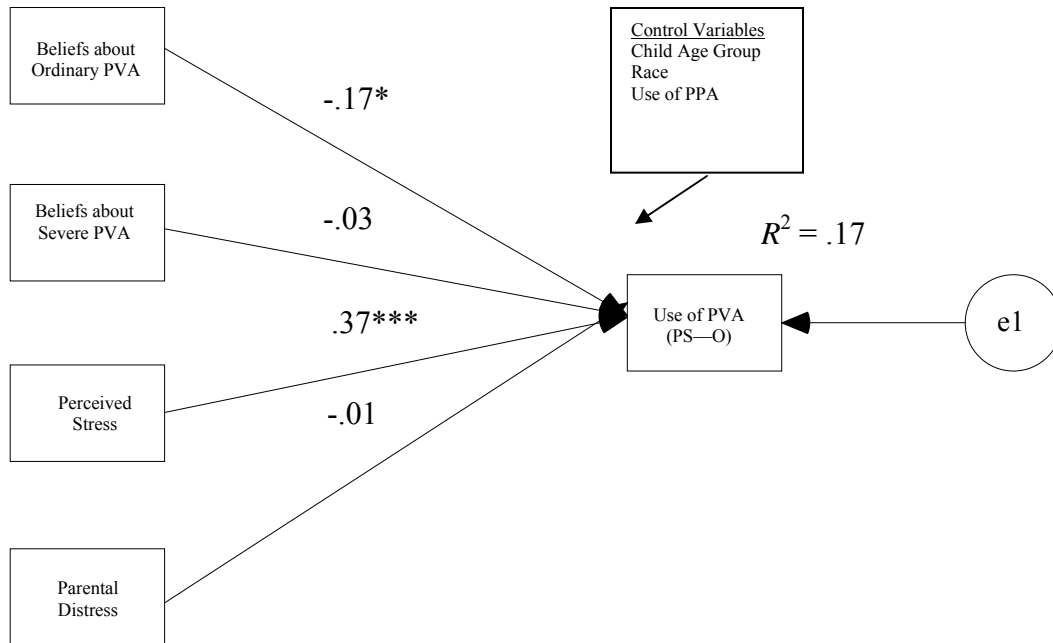


Figure 16. Standardized path coefficients for the path analysis of the additive model for fathers with the use of PVA as measured by Parenting Scale—Overreactivity

With regard to the findings for RQ3, the results from this second set of analyses combined with the first set of analyses suggest that the additive model operates differently for fathers, as compared to mothers, when ‘use of PVA’ is measured by the CTS-PC Psychological Aggression Scale; however, the model operates similarly for mothers and fathers when ‘use of PVA’ is measured by Parenting Scale—Overreactivity. For both models, more variance in ‘use of PVA’ was explained for mothers than for fathers, and the explained variance was slightly higher for mothers than for the total sample.

DISCUSSION

The primary purpose of the current study was to establish ‘beliefs about PVA harm’ as a distinct construct through the assessment of the factor structure, reliability, and validity of the Beliefs about PVA Harm Survey (BPHS) – an instrument developed to assess parents’ beliefs about the extent to which PVA causes harm to children. The rationale for this instrument development study centers on the need to deepen the understanding of what factors are related to the use of PVA given the potential for harm from use of PVA. In the literature on parental aggression, a focus on PVA apart from PPA is uncommon, even though evidence suggests they do not always occur concurrently and each can contribute uniquely to child outcomes (e.g., Claussen & Crittenden, 1991; Hart & Brassard, 1996; Kaplan et al., 1999; Thompson & Wyatt, 1999). In addition, predictors of PPA are not necessarily predictors of PVA (e.g., Jackson et al., 1999). The basis for the expectation that beliefs about PVA harm contribute to the explanation of PVA use lies in the application of social-cognitive-behavioral theory (Crosbie-Burnett & Lewis, 1993). Specifically, it is assumed that parents have beliefs about when harm could come from using PVA, and those beliefs are associated with the extent to which they use it with their own children.

The development of the BPHS began with a review of the applicable theories and empirical literature related to beliefs about parental aggression, including the content of existing measures of beliefs and use of PVA. This review resulted in the identification of

two distinct, yet related, content categories of beliefs about PVA harm, which are suggested to impact use of PVA. To test this assertion, the two content categories were built into an instrument on an a priori basis. Then, following data collection with the instrument, the constructs, beliefs about ordinary PVA and beliefs about severe PVA, were evaluated through a series of psychometric analyses.

Utilizing the data collected from the total sample of parents ($N = 373$), the measurement of the two constructs was assessed prior to assessing their relationship with and distinction from other relevant constructs, including belief in corporal punishment, rigid expectations of children, use of PVA, use of PPA, general aggression, parental stress, and social desirability. Following construct validity testing, the moderating role of parental stress on the relationship between beliefs about PVA harm and use of PVA was assessed.

The Factor Structure of the BPHS

In order to refine the original 34 item measure into a parsimonious, reliable, and valid instrument, procedures recommended for instrument development were employed (e.g., Byrne, 2001; DeVellis, 2003; Hair, 1998; Kline, 2005). Given the nature of the *Beliefs about Severe PVA Scale* (i.e., index rather than psychometric scale), it was not possible to assess the overall factor structure of the BPHS. However, the results from Pearson correlations showed that scores from the refined *Beliefs about Ordinary PVA Scale* and the *Beliefs about Severe PVA Scale* were correlated with each other ($r = .227$, $p < .01$) at a level that indicates the scales are assessing distinct, yet related, constructs. This support for the a priori conceptualization of the two sets of beliefs, beliefs about ordinary PVA and beliefs about severe PVA, as parallel to the conceptualization by

Straus and colleagues (e.g., Straus & Hamby, 1997; Straus et al., 1998; Straus & Field, 2003; Straus, 2006) of separate, yet related, categories of PVA acts demonstrates that the construct ‘beliefs about PVA harm’ has a severity dimension. While that severity dimension has been established for ‘use of PVA,’ this finding extends the dimensionality to the area of cognitions related to use of PVA. Importantly, the BPHS is structured so that the items about ordinary PVA and the items about severe PVA are mixed together, so respondents do not know that their responses are being measured in terms of two different dimensions of severity for beliefs about PVA harm. Consequently, they cannot easily manipulate their scores on the two scales. The presence of the severity dimension for beliefs about PVA harm will make it possible for future research to involve closer examinations of how beliefs about ordinary PVA relate to use of ordinary PVA and how beliefs about severe PVA relate to use of severe PVA. It could be that findings from these more specific examinations will have clearer implications for our understanding of the use of PVA than do examinations of how beliefs about ordinary PVA and beliefs about severe PVA relate to use of PVA overall. Furthermore, it will facilitate examination of moderators and mediators of these more specific belief-behavior links.

In terms of the nature of beliefs about ordinary PVA, the refinement of the *Beliefs about Ordinary PVA* Scale resulted in the retention of 8 of the 14 original items, and the overall Cronbach’s alpha for the scale was .86. The 8 retained items showed variability across the sample for beliefs about ordinary PVA, and the items tap beliefs about 8 distinct acts of ordinary PVA. Of the 8 retained items, only 2 of them were developed based upon acts listed on the CTS-PC Psychological Aggression Scale (i.e., “Yelling at a child that age” and “Threatening to spank a child that age”). The other items represent a

range of verbally aggressive behaviors that include: threatening to not let the child do anything until chores are finished, threatening to limit the use of the child's favorite object, threatening to not let the child do anything until all of his/her food is eaten, threatening the child with an early bedtime, threatening to not let the child watch a favorite television show, and threatening to not let the child play or "hang out" with other children. These acts represent parental behaviors that people may consider commonplace. However, it is important to assess parents' beliefs about when harm would result from the use of these ordinary acts of PVA because, especially when used in combination and/or frequently, these commonly accepted parenting practices could still be harmful to children/youth. More research is needed to assess the extent of harmful child outcomes resulting from use of ordinary PVA. Importantly, the refined scale provides a means for assessing parents' beliefs about ordinary PVA. The ability to measure these beliefs permits comparisons of beliefs about ordinary PVA to use of ordinary PVA and, in the future, to findings about harm from use of ordinary PVA.

While efforts to refine the *Beliefs about Ordinary PVA* Scale were successful, the evaluation of the *Beliefs about Severe PVA* Scale led to the retention of all 20 original items. Rather than discard the scale, it was determined that the scale would be transformed into an index of beliefs about severe PVA, and the 20 items were recoded into dichotomous variables. The scale had to be examined as a manifest variable in concurrent validity tests, but, otherwise, analyses involving this scale could be conducted as planned. It was important to maintain this scale within the BPHS in order to have a measure of beliefs about severe PVA. In terms of the nature of beliefs about severe PVA, severe PVA acts may be more readily considered 'always harmful' than ordinary PVA

acts, but beliefs about severe PVA could still differ between individuals. The index of beliefs about severe PVA taps what respondents' believe about acts of severe PVA, and the measurement of these beliefs allows the identification of erroneous beliefs about severe PVA. When inaccurate beliefs can be identified early enough, then it could be possible to help the parents to correct those beliefs in order to decrease the likelihood of them using severe PVA with their children.

Further support for maintaining the *Beliefs about Severe PVA* Scale within the BPHS comes from assessments that involve similar nonnormal distribution issues. In research on parental aggression, assessments of "extreme" behaviors tend to be skewed similarly to the assessments of beliefs about severe PVA, as parents typically indicate that they have not used those behaviors during the referent time period. The reports in the current study showed further evidence of this occurrence in that severe PVA acts and severe PPA acts were rarely reported. In other research conducted with the CTS-PC, respondents have been less likely to report the use of severe acts of PVA and PPA, as compared to ordinary acts, and were even less likely to report the combined use of several different severe acts of parental aggression (Straus, Hamby, & Warren, 2003).

Throughout the research conducted over the last thirty years, Straus and colleagues (e.g., Straus & Hamby, 1997; Straus et al., 1998; Straus & Field, 2003; Straus, 2006) have maintained the need to include these rarely endorsed items in the CTS-PC. They do not consider the nonnormal distributions for these items as justification for eliminating them from the CTS-PC because it is important to be able to assess those acts specifically, as well as to include a broad range of acts on each scale (Straus, Hamby, & Warren, 2003).

The difference in response variability between the two scales provides further evidence of the nature of beliefs assessed by each scale, as well as emphasizes the distinctions between the two scales. Specifically, responses for beliefs about ordinary PVA demonstrated a wide range of variability across participants in the sample (Minimum = 1.00, Maximum = 7.00, M = 4.35, SD = 1.49). This variability is consistent with the subjective nature of the judgment of harmfulness of ordinary acts of PVA, which can vary widely among parents based on familial culture, background, and community context. In contrast, the responses regarding beliefs about severe PVA did not vary as widely (Minimum = 0, Maximum = 1.00, M = .95, SD = .10). Most participants tended to respond that they believed the severe acts would be harmful at the lowest frequency of use. The resulting nonnormal distributions were not surprising given that most items refer to acts that parents who are socialized in the United States would consider child abuse and, therefore, harmful at any level (e.g., “Telling a child that age he/she will not succeed at anything,” “Threatening to make a child that age sleep outside,” “Threatening to kill a child that age”). In addition, this sample was highly educated, with 81% of participants reporting their highest level of education was a college degree. Consequently, given the American socialization of parents and the use of a highly educated sample, finding evidence of beliefs that harm results at only moderate to high frequency of severe PVA use would have been disturbing at the very least, as it would indicate erroneous beliefs that might be associated with use of severe PVA.

Because of the variability in beliefs about ordinary PVA, the *Beliefs about Ordinary PVA* Scale likely will be more critical than the *Beliefs about Severe PVA* Scale for future studies of the causes and consequences of PVA. The ability to measure beliefs

about ordinary PVA will be particularly important as research efforts are broadened to place more emphasis on deepening the understanding of the use of ordinary PVA.

Previously, the use of ordinary acts of PVA has not been the focus of research to a large extent because it was presumed that they did not cause harm to children. However, there is some indication that harm can occur from PVA even when it is not severe enough to warrant investigation (e.g., Claussen & Crittenden, 1991; Hart & Brassard, 1991; Kaplan et al., 1999; Thompson & Wyatt, 1999).

Furthermore, the variability in beliefs about ordinary PVA found in the current study suggests that there are differences among parents about beliefs concerning the point at which harm could result from use of specific acts of PVA. It will not be possible to know the implications of this variability in beliefs about ordinary PVA until more extensive examinations are conducted to assess the harmful consequences of ordinary PVA use overall or specific acts of ordinary PVA. It is important for future studies to include examinations of the nature of ordinary PVA in order to determine its association with harmful child outcomes. It also is important to examine the extent to which beliefs about ordinary PVA are accurate in order to extract practical implications. Until such examinations are conducted, beliefs about possible harm from use of ordinary PVA remain subjective.

Based on the results of the present study, the two scales of the BPHS may be used individually or concurrently in future studies of beliefs about PVA harm. The evaluation of the two BPHS scales indicates the need to treat the scales separately in analyses, rather than as indicators of a higher-order latent construct. This separation of scores also permits

the closer examination of distinctions between beliefs about ordinary PVA and beliefs about severe PVA.

The Construct Validity of the BPHS

Evaluation of the construct validity of the two BPHS scales provides support for the validity of these scales. Based upon the procedures for establishing construct validity (e.g., Anastasi & Urbina, 1997; Campbell & Fiske, 1959; DeVellis, 2003), both convergent validity and discriminant validity were assessed by examining Pearson correlations computed separately for beliefs about ordinary PVA and beliefs about severe PVA for each of the constructs, namely related beliefs, parental aggression, general aggression, parental stress, and social desirability. Convergent validity was hypothesized to be demonstrated through the scales being highly correlated with measures of other parenting belief constructs and moderately correlated with measures of parental aggression, thereby indicating relationship with theoretically similar constructs instead of redundancy in measurement. Discriminant validity was hypothesized to be demonstrated through the BPHS scales being sufficiently divergent from measures of other parenting beliefs, parental aggression, and general aggression, as well as unrelated to parental stress and social desirability. While these hypothesized relations were described in terms of high, moderate, and low correlations, the findings revealed that the highest absolute value correlation was .356. Consequently, the interpretation of the correlations mainly involves how the findings relate to the expected order of the relationships, rather than the high/moderate/low levels of the correlations. The findings are discussed below in terms of the similarities and contradictions with the expected pattern of relationships.

With regard to related beliefs, the results provide support for convergent validity in terms of beliefs about ordinary PVA being most closely related to other beliefs about parental aggression. Specifically, beliefs about ordinary PVA were negatively correlated with belief in corporal punishment ($r = -.356, p < .01$) and rigid expectations of children ($r = -.239, p < .01$). The negative correlations were expected due to the nature of the constructs involved. For both belief in corporal punishment and rigid expectations of children, higher scores indicate higher tolerance or endorsement of the use of parental aggression, whereas the opposite is true for the BPHS scales. Since BPHS responses were reverse scored, higher scores on BPHS scales indicate belief that the use of ordinary or severe PVA causes harm at lower thresholds (i.e., stronger belief that harm will result), whereas lower scores indicate belief that the use of ordinary or severe PVA causes harm at higher thresholds.

The two belief constructs (i.e., belief in corporal punishment and rigid expectations of children) measured in this study were identified in the review of literature about beliefs about PPA (e.g., Holden et al., 1995; Jackson et al., 1999; Socolar & Stein, 1995; Vittrup et al., 2006). Since PVA and PPA are correlates (e.g., Claussen & Crittenden, 1991; Hart et al., 1996; Schneider et al., 2005; Thompson & Wyatt, 1999), beliefs about these two forms of parental aggression are conceptually related. The findings of the expected relationships between beliefs about PPA and beliefs about PVA in the current study provide support that beliefs about ordinary PVA and beliefs about severe PVA are valid constructs of beliefs about parental aggression. The findings also provide evidence of the distinction among the constructs based on the magnitude of the relationships. Discriminant validity is evidenced by moderate to low correlations with the

belief constructs. That is, parents who endorse corporal punishment and hold more rigid expectations for children may not necessarily indicate belief that the use of ordinary or severe PVA causes harm only at higher frequencies of use. Additionally, beliefs about ordinary PVA and beliefs about severe PVA were conceptualized as analogous to the differences between beliefs related to corporal punishment and rigid expectations of children since parents who tend towards more highly aggressive parenting practices are likely to hold highly rigid expectations for children's behavior (e.g., Milner, 1994; Smith Slep & O'Leary, 2001). As expected, beliefs about ordinary PVA were more highly correlated with beliefs about milder forms of parental aggression (i.e., belief in corporal punishment) than beliefs about harsher forms (i.e., rigid expectations of children).

Support for the convergent validity of beliefs about severe PVA also is indicated by these beliefs being most closely correlated with related beliefs about parental aggression. Findings for beliefs about severe PVA were similar to beliefs about ordinary PVA in terms of negative correlations with belief in corporal punishment and rigid expectations of children. However, contrary to expectations, beliefs about severe PVA were more highly correlated with belief in corporal punishment ($r = -.125, p < .05$) than rigid expectations of children ($r = -.109, p < .05$), just as was the case for beliefs about ordinary PVA. In addition, comparatively, the correlation between beliefs about severe PVA and rigid expectations of children was lower than the correlation between beliefs about ordinary PVA and rigid expectations of children ($r = -.239, p < .01$).

Given these findings, rigid expectations of children did not adequately demonstrate the discriminant validity of beliefs about severe PVA harm as involving beliefs about harsher forms of parental aggression. The construct 'rigid expectations of

children' may be too specific, and it may not necessarily be endorsed more so by parents who tend towards more severe aggression. It is possible that a measure that more clearly and more broadly assesses beliefs about harsher forms of PPA would be correlated more highly with beliefs about severe PVA than both beliefs about ordinary PVA and belief in corporal punishment. Unfortunately, no other published measure of beliefs about harsher forms of parental aggression currently existed.

Importantly, finding a higher correlation for beliefs about ordinary PVA with belief in corporal punishment than with reported use of parental aggression provides evidence that the *Beliefs about Ordinary PVA Scale* is measuring beliefs rather than serving as a proxy for use of parental aggression. The findings that all three measures of use of PVA had a similar inverse relationship with beliefs about ordinary PVA were consistent with expectations about how beliefs about PVA harm would relate to use of PVA. An inverse relationship was expected due to the nature of the constructs involved. Specifically, parents who express belief that harm comes from ordinary PVA at a lower threshold of use, thereby indicating stronger belief that harm will result (i.e., high BPHS score), would be expected to report lower levels of PVA use with their children. Importantly, the magnitude of these relationships (i.e., Parenting Scale—Overreactivity: $r = -.239, p < .01$); CTS-PC—Psychological Aggression Scale: $r = -.212, p < .01$; Ordinary PVA items: $r = -.198, p < .01$) provides the clearest evidence of the distinction between beliefs and behavior, such that it can be argued that the beliefs about ordinary PVA are discriminant from use of PVA.

Beliefs about ordinary PVA are theoretically related to use of PVA due to the belief-behavior link proposed in cognitive-behavioral theory (Crosbie-Burnett & Lewis,

1993) and supported in empirical research about PPA (e.g., Holden et al., 1995; Jackson et al., 1999; Socolar & Stein, 1995; Vittrup et al., 2006). The CTS-PC—Psychological Aggression Scale and the Ordinary PVA items were expected to be more highly correlated with beliefs about ordinary PVA than the Parenting Scale—Overreactivity due to method variance. The development of BPHS items and response format in connection with those two measures was anticipated to slightly inflate the relationship between beliefs and behaviors when use of PVA was assessed by those two measures. However, the highest correlation between beliefs about ordinary PVA and use of PVA was found with the Parenting Scale—Overreactivity measure. While these findings did not follow the expected pattern of relationships across the three measures of use of PVA, they actually provide a more favorable outcome by demonstrating that method variance did not play a significant role for the *Beliefs about Ordinary PVA* Scale. They also provide evidence that parents' reports distinguish between beliefs about potential harm from specific acts of PVA and the use of those specific acts. Furthermore, the finding that use of PPA ($r = -.154, p < .01$) correlated with beliefs about ordinary PVA at a lower level than use of PVA indicates beliefs about ordinary PVA relate more closely to use of PVA than use of a different form of parental aggression. That indication is supported by Jackson et al.'s (1999) finding that predictors of PPA are not necessarily predictors of PVA. It was important to include assessments of both use of PVA and use of PPA in order to verify the notion that the belief-behavior link is better examined with beliefs that are specific to the behavior. Overall, these findings provide support for both convergent and discriminant validity in that parental aggression is related to, yet distinct from, beliefs about ordinary PVA.

Similar to the findings for beliefs about ordinary PVA, beliefs about severe PVA were negatively correlated with use of PVA, but the relationships were significant only for two of the measures (i.e., CTS-PC—Psychological Aggression Scale: $r = -.199$, $p < .01$; Parenting Scale—Overreactivity: $r = -.117$, $p < .05$). These findings provide further support for the theoretical relationship between beliefs about PVA harm and use of PVA. Specifically, parents who express belief that harm comes from severe PVA at a lower threshold of use, thereby indicating stronger belief that harm will result, would be expected to report lower levels of PVA use with their children.

The finding of a slightly higher correlation for the CTS-PC—Psychological Aggression Scale than the Parenting Scale—Overreactivity measure of PVA use may partly be a function of method variance. Similar to the *Beliefs about Ordinary PVA* Scale, the validity of the *Beliefs about Severe PVA* Scale was threatened by method variance since belief items were purposefully connected to behavior items on the CTS-PC—Psychological Aggression Scale and the Ordinary PVA items. However, apart from explanations involving method variance, these results make sense due to distinctions between the two measures. The Parenting Scale—Overreactivity measure has items that involve ordinary acts of PVA only. In contrast, the scale from the CTS-PC includes items about both ordinary and severe acts of PVA. It appears that beliefs about severe PVA are more highly correlated with the CTS-PC scale due to the latter containing items referencing acts at the level of severity upon which those beliefs are based. The *Beliefs about Severe PVA* Scale was not correlated with the Ordinary PVA items. It is most likely that the lower alpha of the Ordinary PVA items resulted in insufficient power to detect a relationship with beliefs about severe PVA.

An important conclusion from these findings is that the correlations between use of PVA measures and beliefs about severe PVA were low enough to demonstrate that beliefs about severe PVA are distinct from reported use of PVA. Furthermore, the findings that beliefs about ordinary PVA were more related to use of PVA than use of PPA and that use of PPA did not correlate with beliefs about severe PVA further emphasize the need to assess the relationship between beliefs and behaviors with beliefs that are specific to the behavior (Jackson et al., 1999). Overall, these findings provide support for both convergent and discriminant validity in that parental aggression is related to, yet distinct from, both beliefs about ordinary PVA and beliefs about severe PVA.

Another variable that was assessed permitted consideration of whether the measurements of parents' beliefs about ordinary and severe PVA were simply tapping beliefs about general aggression. The Deffenbacher Driving Anger Scale—Short Form served as a measure of general aggression tendency because it provides a measure of a different type of aggression than aggression towards a child. It essentially assesses a person's aggressive tendencies when encountering frustration or provocation with regards to driving specifically. Research findings indicate driving anger is associated with general aggressive behavior, regardless of whether the behavior occurred within the context of driving (Deffenbacher et al., 2001). General aggression tendency was not significantly correlated with either beliefs about ordinary PVA or beliefs about severe PVA. These findings allow us to conclude that the beliefs assessed through the BPHS are conceptually specific to the parent-child relationship and not simply a measure of beliefs about general aggression. The consideration of these findings in combination with the findings about

parental aggression strengthens the evidence of the validity of the BPHS as a measure of beliefs about PVA harm.

While parental stress was expected to be related to use of PVA (e.g., Coohy & Braun, 1997; Farrington, 1980; Hillson & Kuiper, 1994; Pinderhughes et al., 2000; NRC, 1993), there was no initial expectation that parental stress would be related to beliefs about PVA harm. Parental stress was expected to moderate the belief-behavior link based on the integration of stress theory (Farrington, 1980) with social-cognitive-behavioral theory (Crosbie-Burnett & Lewis, 1993) and some empirical evidence (Schellenbach et al., 1991; Vittrup et al., 2006) that higher levels of stress disrupt the belief-behavior link. Consequently, neither measure of parental stress was expected to be related either to beliefs about ordinary PVA or beliefs about severe PVA. The results supported this expectation in three of the four tested relationships. Beliefs about ordinary PVA were significantly correlated with parental stress, as measured by the PSI-SF—Parental Distress Scale. However, the correlation was the lowest statistically significant correlation found for beliefs about ordinary PVA, and it could be considered an artifact due to the nonsignificant correlation between beliefs about ordinary PVA and the other measure of parental stress. It also may be that the two measures of parental stress tap different aspects or dimensions of stress. The PSI-SF—Parental Distress Scale contains items that more directly relate to stress experienced as the result of the parenting role. In contrast, the Perceived Stress Scale deals with respondents' feelings/thoughts that reflect perceptions of stress in general. The two measures correlated with each other ($r = .633$, $p < .01$); however, this correlation likely indicates that parental stress is subsumed under assessments of general stress. The discriminant correlations with beliefs about ordinary

PVA may indicate that general stress does not necessarily indicate high parental stress, which is more closely related to beliefs about ordinary PVA. Therefore, nonshared variance between parental stress and general stress explains the difference in correlations with beliefs about ordinary PVA. It could be that beliefs about ordinary PVA are related to stress experienced as the result of the parenting role. It could be that a parent experiencing a higher level of stress through parenting has been using more aggressive parenting methods (i.e., ordinary acts of PVA) with their child and may be somewhat justifying this behavior by assessing that harm will not come until a higher level of parental aggression use is reached.

The last correlations examined involved a measure of socially desirable response patterns, which was included based upon recommendations for instrument development (Paulhus, 1991; Straus, 2006). As expected, both beliefs about ordinary PVA and beliefs about severe PVA did not correlate with social desirability. These findings indicate that participants responded truthfully to the items on the BPHS scales measuring the respective constructs. These findings are particularly important given the nature of beliefs about PVA harm. In assessing beliefs about PVA harm, it is important to be mindful of the fact that parents could report their beliefs about when PVA would become harmful according to what they think would be acceptable beliefs, rather than what they truly believe. The evidence that there is no indication that either scale is influenced by a socially desirable response set provides more confidence in the assessments of beliefs about PVA harm in the current study.

The Concurrent Validity of the BPHS

Upon completion of construct validity tests, the refined *Beliefs about Ordinary PVA Scale* and the complete *Beliefs about Severe PVA Scale* were used in concurrent validity tests to examine the direct effects of beliefs about ordinary PVA, beliefs about severe PVA, perceived stress, and parental distress, along with the belief-stress interaction effects, on use of PVA. Based on theoretical assumptions and some empirical evidence, child age, child gender, family type, race, SES, parent gender, and use of PPA were examined for their effects on the BPHS scales and the measures of use of PVA. It was determined that the confounding influence of child age group, race, and parent gender needed to be controlled for the *Beliefs about Severe PVA Scale*. Also, SES, parent gender, and use of PPA should be controlled for use of PPA, as measured by the CTS-PC—Psychological Aggression Scale, and use of PPA should be controlled for use of PVA, as measured by Parenting Scale—Overreactivity. Controlling for the effects of these contextual variables allowed for more confidence in the results of validity tests by reducing the likelihood that the findings resulted from the influence of other contextual factors.

It was expected that beliefs, particularly regarding ordinary PVA, might be age dependent based on prior research by Flynn (1998) and Mize et al. (1995) on the belief-behavior link for other areas, as well as the evidence that use of specific types of PVA varies by child age (e.g., Straus & Field, 2003). The current investigation included an examination of how beliefs about ordinary and severe PVA are affected by child age through the use of different referent child age groups. First, the factor structure underlying beliefs about ordinary PVA was similar across groups. Second, differences

among mean scores were examined, and, interestingly, mean scores did not differ as a function of child age group for beliefs about ordinary PVA. This finding indicates that parents in this sample view level of harm for a specific ordinary PVA act as comparatively equally harmful across age groups. While differences across age groups were not found for beliefs about ordinary PVA in the current study, it is still important to assess beliefs about PVA harm using referent child age groups. Specifying the age group the respondent is referencing when answering items provides conceptual internal consistency when the respondent is answering items pertaining to the use of PVA with a specific child in that age group. If a respondent were to answer about children/youth in general and report on use of PVA with a child in a specific age range, the connection between beliefs and behaviors is less likely to be found. The conceptual internal consistency is useful in closer examinations of the congruence between parents' beliefs about PVA harm and their use of PVA. Identification of incongruent beliefs and behavior could be useful in modifying inaccurate beliefs or inconsistent behaviors.

In contrast to the findings for beliefs about ordinary PVA, scores for beliefs about severe PVA did differ by child age group. Specifically, parents responding to the *Beliefs about Severe PVA* Scale for the early childhood group indicated harm occurred at lower thresholds (i.e., stronger belief that harm would result) than parents responding for the mid-adolescence group. For example, swearing at or insulting a two-year-old may be believed to always cause harm, whereas such acts may be believed to be less harmful towards a fifteen-year-old if done at a relatively low frequency. While parents tend to view severe PVA acts as harmful at lower thresholds, comparatively, for younger children than for older children, there was low variability overall in responses about

beliefs about severe PVA, which means that, overall, participants believed harm would result from severe acts of PVA at lower frequency of use. The age group differences could be explained by more participants selecting a response other than ‘always harmful’ for the mid-adolescence group, as compared to the early childhood group, due to a consistent perception of vulnerability of young children to any acts of severe PVA.

The failure to find differences by child age group for use of PVA may be due to the assessment of differences based on overall use of PVA for the two measures. Prevalence studies, such as the one by Straus and Field (2003), indicate age group differences with regard to specific acts of PVA use. Consequently, it is plausible that differences in the overall level of PVA use do not vary as a function of child age group because the overall use of PVA is relatively consistent, whereas the use of specific acts of PVA varies.

Prior research on the influence of child gender on the use of PVA is inconclusive (e.g., Black et al., 2001; Claussen & Crittenden, 1991; Sedlak, 1997; Straus & Field, 2003; Vissing et al., 1991). No evidence was found in the current study to support the presence of differences by child gender for beliefs about ordinary PVA, beliefs about severe PVA, or use of PVA, as measured by either scale. Given mixed findings in prior research, it is plausible that child gender does not play a role in parents’ beliefs about PVA harm or use of PVA overall. Furthermore, in light of the findings about age group differences for beliefs about severe PVA, it could be that parents’ beliefs about PVA harm are based upon what is developmentally appropriate, rather than what is appropriate for males versus females.

While examinations of propensity for aggression use by family type are inconclusive (e.g., Adler-Baeder, 2006; Gershoff, 2002; Hashima & Amato, 1994; Higgins & McCabe, 2003; Loeber et al., 2000; Thompson & Wyatt, 1999), the unique family environments across different family types may very well produce contexts that could influence use of PVA. However, the results from exploratory analyses did not support controlling for the influence of family type on use of PVA or beliefs about ordinary and/or severe PVA. Consequently, the families in this sample do not appear to differ on use of PVA or on either set of beliefs, regardless of family type (i.e., two parent biological family, two parent stepfamily, one parent biological family, and partnered family). This finding could be due to 73% of the sample representing two-parent nuclear families, which may have limited the ability to detect family type differences. It will be important to consider the influence of family type in future studies that have a more diverse sample.

There is mixed evidence concerning the existence of racial differences in use of parental aggression (e.g., Day et al., 1998; Hemenway et al., 1994; Pinderhughes et al., 2000; Straus & Stewart, 1999; Straus & Field, 2003). Furthermore, there are conflicting findings concerning racial differences in the approval of parental aggression (Flynn, 1994; Markowitz, 2001). In the current study, the need to control for the effect of race was only supported for beliefs about severe PVA. Specifically, Caucasian parents responding to the *Beliefs about Severe PVA* Scale indicated harm occurred at lower thresholds (i.e., stronger belief that harm would result) than African-American parents. Research findings have indicated that African-Americans are more likely to use severe parental aggression (Pinderhughes et al., 2000; Straus et al., 1998). If they are more likely

to use severe parental aggression, then it is plausible that they are more likely to support the use of severe parental aggression (i.e., weaker belief that harm would result).

Consequently, the beliefs about severe PVA for African-American parents would indicate a weaker belief than Caucasian parents that harm would result from use of severe PVA. Perhaps racial differences were not detected for use of PVA in the current study due to the ordinary and severe acts being combined in the CTS-PC Psychological Aggression Scale. Further investigation is warranted in order to determine whether this finding is an artifact of the data and, therefore, not meaningful.

Some evidence suggests that the use of parental aggression may differ according to SES (e.g., Claussen & Crittenden, 1991; Hashima & Amato, 1994; Herrenkohl et al., 1995). Based on the exploratory analyses, SES was controlled for use of PVA, as measured by the CTS-PC Psychological Aggression Scale, due to the finding of a significant correlation between the two measures ($r = -.124, p < .05$). For the parents in this sample, as level of SES decreased, the use of PVA reported on the CTS-PC Psychological Aggression Scale increased. SES differences were not found for use of PVA, as measured by Parenting Scale—Overreactivity. Part of the reason for the differential influence could be the inclusion of severe acts of PVA on the CTS-PC Psychological Aggression Scale. While ordinary acts of PVA are used throughout the general population, it could be that severe acts of PVA are more likely to occur in families with lower SES. This possibility could be better explored with a sample that is more socioeconomically diverse.

This study also included the examination of how parent gender affected variables in tests of validity (e.g., Black et al., 2001; Douglas, 2006; Holden et al., 1999; Holden &

Zambarano, 1992; Straus & Mathur, 1996; Straus & Stewart, 1999). While beliefs about ordinary PVA did not differ by parent gender, the effects of this variable were controlled for beliefs about severe PVA and use of PVA, as measured by the CTS-PC Psychological Aggression Scale. Specifically, mothers responding to the *Beliefs about Severe PVA* Scale indicated harm occurred at lower thresholds than fathers, thereby indicating stronger belief that harm would result from use of severe PVA. Mothers also reported more overall use of PVA, as measured by the CTS-PC Psychological Aggression Scale, than fathers. An examination of the reported frequency of the specific acts of PVA for the CTS-PC Psychological Aggression Scale revealed that at least 42% of the mothers in the sample reported using ordinary PVA acts; however, less than 11% reported using severe PVA acts. Consequently, while mothers had stronger belief than fathers that harm would result from use of severe PVA, mothers' higher frequency of use of PVA relates mainly to reports of use of ordinary PVA.

The finding of gender differences for use of PVA in the current study is consistent with findings from PPA research that indicate corporal punishment is used more by mothers than fathers (e.g., Day et al., 1998; Straus & Stewart, 1999). Furthermore, the gender differences found for beliefs about severe PVA are consistent with PPA research that has shown fathers are more likely to support the use of parental aggression (e.g., Flynn, 1998; Straus & Mathur, 1996). Given that gender differences only were present for one set of beliefs, further exploration of gender differences is needed in future studies in order to learn more about how gender differences affect these variables.

The literature review highlighted the need to increase confidence that results from studies about PVA use are not influenced by PPA use, so as to disentangle knowledge

about PVA use from use of other forms of parental aggression (Higgins & McCabe, 2001). Vissing et al. (1991) and McGee et al. (1997) statistically controlled the influence of other maltreatment to demonstrate PVA's detrimental impact on participants in their samples. The exploratory analyses conducted for the current study included assessments of whether use of PPA influenced use of PVA, as measured by both scales utilized in the study. The findings indicated both the CTS-PC—Psychological Aggression Scale ($r = .438, p < .01$) and the Parenting Scale—Overreactivity measure ($r = .193, p < .01$) were significantly correlated with use of PPA. Therefore, the use of PPA was controlled for both measures. Use of PPA almost always includes use of PVA, but use of PVA does not necessarily coincide with use of PPA. The use of PPA was more highly correlated with the CTS-PC—Psychological Aggression Scale, which includes severe acts of PVA. Consequently, it is possible that use of PPA is more connected to a higher degree of severity of PVA. This possibility is evidenced in a greater degree of overlap in use of PPA and use of PVA in studies with clinical samples, as compared to studies with general population samples (e.g., Claussen & Crittenden, 1991; Hart et al., 1996; Kaplan et al., 1999; Thompson & Wyatt, 1999).

Concurrent validity tests initially involved assessing the relationships of both beliefs about ordinary PVA and beliefs about severe PVA with use of PVA. As described previously, both sets of parental beliefs about PVA harm were expected to be inversely related to reported levels of use of PVA. Empirical evidence supports the link between beliefs and behaviors for PPA (e.g., Holden et al., 1995; Jackson et al., 1999; Socolar & Stein, 1995; Vittrup et al., 2006). That empirical evidence combined with social-cognitive-behavioral theory (Crosbie-Burnett & Lewis, 1993) suggests a parent's use of

PVA with their children flows out of the beliefs the parent has about PVA. Specifically, if parents believe that harm comes from only a very high level of PVA use, then they would be more likely to use PVA. On the other hand, if parents believe that even a low level of PVA use is harmful, then they would be less likely to use PVA. While the belief-behavior link is described in terms of how beliefs influence behavior, this study does not provide evidence of causality in the belief-behavior link for PVA. The analyses conducted in concurrent validity tests for the present study only provide evidence of an association, rather than a causal link. Therefore, it is important to acknowledge that parents' use of PVA also may influence parents' beliefs about PVA harm. It could be that beliefs influence behavior, and that behavior influences beliefs, so that reciprocal influence occurs over time. It also could be that the causal link is unidirectional. Based on research findings regarding factors related to use of PPA (e.g., Jackson et al., 1999; Vittrup et al., 2006), it is expected that future evidence should support at least a unidirectional causal link such that beliefs about PVA harm influence the use of PVA. In order to establish evidence of a causal link, it will be important to examine whether or not beliefs about PVA harm predict use of PVA over time, as well as whether or not use of PVA predicts beliefs about PVA harm.

In the current study, the results from tests of the belief-behavior link provided support for the hypothesized inverse relationship between beliefs about ordinary PVA and use of PVA, regardless of the measure of use of PVA. Further, the findings supported an inverse relationship between beliefs about severe PVA and use of PVA, as measured by the CTS-PC Psychological Aggression Scale. That measure of use of PVA includes items to assess severe acts of PVA. It makes sense that the link would be present between

a beliefs measure and a behavior measure that include items about the same level of severity. It could be that a relationship does not exist with the other measure of use of PVA, Parenting Scale—Overreactivity, due to its only including acts of ordinary PVA. Consequently, future studies assessing the causal link between beliefs about PVA harm and use of PVA might need to include measures of PVA use containing both ordinary and severe PVA acts in order to fully examine the relationship between beliefs about PVA harm and use of PVA.

Based on the findings, it can be concluded that parents have beliefs about when harm could come from using PVA, and those beliefs are associated with the extent to which they use it with their own children. The support for the inverse belief-behavior relationship for three of the four relationships examined extends empirical evidence of the belief-behavior link for PPA to research on PVA, and demonstrates the need for further examinations of the belief-behavior link for PVA. Specifically, support for the belief-behavior link in the current study emphasizes the need demonstrated by Jackson et al. (1999) to examine the belief-behavior link with beliefs and behaviors that involved the same form of parental aggression. This connection is further evidenced in the current study by the lack of a relationship between beliefs about severe PVA and use of PVA when only involving ordinary PVA acts.

Subsequent concurrent validity tests involved assessing whether or not parental stress (i.e., perceived stress and parental distress) moderates the relationship between beliefs about PVA harm (i.e., beliefs about ordinary PVA and beliefs about severe PVA) and use of PVA, as measured by the CTS-PC Psychological Aggression Scale and Parenting Scale—Overreactivity. Support for the moderation hypothesis was grounded in

an integration of social-cognitive-behavioral theory and general stress theory. It was expected that parental stress levels affect the parents' ability to act in ways consistent with their beliefs. High stress would override beliefs about PVA harm associated with lower use of PVA (Bugental & Goodnow, 1998). Furthermore, Schellenbach et al. (1991) found evidence of stress interacting with cognitive evaluations of children's behavior to produce negative parental behavior, and the findings of Vittrup et al. (2006) suggest that stress can interrupt the belief-behavior link to lead to use of parental aggression by parents who do not believe it to be appropriate. In all instances across the path analyses conducted, none of the interaction terms were statistically significant regardless of the measure of use of PVA or the measure of parental stress. Consequently, these data do not support perceived stress or parental distress as a moderator of the relationship between either beliefs about ordinary PVA or beliefs about severe PVA with use of PVA, as measured by either scale.

While parental stress did not serve as a moderator of the belief-behavior link, it is not possible to determine whether or not parental stress moderates this link based solely upon the findings of this study. This study represents the first empirical study of beliefs about PVA harm. Further research is warranted before definitive conclusions are made as to whether parental stress does not moderate the belief-behavior link for PVA or the findings were artifacts of this study. On one hand, it is possible that parental stress, indeed, does not moderate the relationship since the hypothesis was largely based upon theoretical support, given limited empirical evidence (Schellenbach et al., 1991; Vittrup et al., 2006). However, on the other hand, it also is possible that the moderating role would be evident in replications of this study with another sample experiencing higher

degrees of parental stress. While the present sample exhibited variability in parental stress levels, the average level of stress was low across both measures of parental stress.

Further efforts to evaluate the role of parental stress in relation to the belief-behavior link led to evaluation of two additive models to assess the direct effects of beliefs about ordinary PVA, beliefs about severe PVA, perceived stress, and parental distress on use of PVA. When use of PVA was measured by the CTS-PC Psychological Aggression Scale, both sets of beliefs about PVA harm and parental distress were significantly related to use of PVA. In contrast, only beliefs about ordinary PVA and perceived stress were significantly related to use of PVA, as measured by Parenting Scale—Overreactivity. The lack of a significant relationship between beliefs about severe PVA and use of PVA in the second model again can be explained by the Parenting Scale—Overreactivity measure not having items at the same level of severity. It is interesting that the significant relationships between use of PVA and the two stress constructs differed by the measure of use of PVA included in the path analyses. These findings provide more evidence that the two parental stress measures may be tapping different dimensions of stress; however, there is no clear indication as to why each was associated with a different measure of use of PVA. Overall, the findings extend theoretical and empirical support for parental stress serving as a major determinant of other forms of parental aggression (e.g., Hillson & Kuiper, 1994; Holden & Banez, 1996; Kotch et al., 1995; Kotch et al., 1997; Pinderhughes et al., 2000; Rodriguez & Green, 1997), thereby showing that it also contributes to the explanation of use of PVA. The explained variance in use of PVA by these factors was as high as 19.9% for the model that involved the Parenting Scale—Overreactivity measure of use of PVA.

Considering the findings as a whole, evidence from the additive models strengthens the support for the concurrent validity of the BPHS by demonstrating the usefulness of beliefs about ordinary PVA, beliefs about severe PVA, parental distress (i.e., parental stress), and perceived stress (i.e., general stress) in contributing to the explanation of use of PVA. Furthermore, the findings suggest the importance of examining different dimensions of beliefs, stress, and use of PVA in order to fully understand how beliefs and stress relate to use of PVA. Parents' use of PVA does not happen in a vacuum. It is associated with parents' beliefs about the harm that could result from using PVA, the experience of stress in parents' lives, and, given the large percentage of unexplained variance, other factors not directly assessed in this study.

The relationships between these factors and use of PVA were further examined to explore differences between mothers and fathers for the two additive models representing the influences of beliefs about PVA harm and parental stress on the use of PVA. The results suggest that the additive models have more explanatory value for mothers than for fathers, and the explained variance in 'use of PVA' was slightly higher for mothers than for the total sample. The model in which 'use of PVA' was measured by Parenting Scale—Overreactivity indicated similar findings in general for mothers and fathers. However, the additive model operates differently for fathers, as compared to mothers, when 'use of PVA' is measured by the CTS-PC Psychological Aggression Scale. Specifically, for fathers, only beliefs about severe PVA were significantly related to use of PVA. In contrast, for mothers, both sets of beliefs about PVA harm and parental distress were significantly related to use of PVA.

The findings for mothers in both additive models are consistent with the ones for the total sample. However, it is not clear why fathers would be similar to mothers when Parenting Scale—Overreactivity serves as the measure of use of PVA, and, then, be different from one another when the CTS-PC Psychological Aggression Scale serves as the measure of use of PVA. The lone similarity between mothers and fathers in that model was that beliefs about severe PVA related to use of PVA. Further exploration of parent gender differences is needed in future studies.

Limitations

The limitations of the current study primarily relate to the following: (1) sample recruitment, (2) child age group subsamples, and (3) evaluation of the *Beliefs about Severe PVA* Scale. At the time of data collection, there were fewer new participants entering CTF-funded programs due to it being near the end of the CTF funding year. The requirement for the participants to be voluntarily attending the program further limited the potential pool of participants. Of the seventeen CTF-funded programs whose staff members were asked to assist with sample recruitment, only four programs became part of the data collection process due to: (1) the willingness of program staff to permit recruitment within their programs, (2) the timing of when new participants entered their programs, and (3) the presence of voluntary participants in their programs. Only two of these four programs were successful in recruiting new, non-mandated participants ($n = 4$) to complete the survey for the current study.

The small number of participants from the CTF programs limited the study in two primary ways. For example, it was not possible to cross-validate the BPHS by analyzing the data from the CTF sample and the online sample separately. Cross-validation would

have increased confidence in the ability to generalize the findings from this study when results were replicated across samples. For results that differed across samples, the research findings would have contributed to a deeper understanding of the complexity of beliefs about PVA harm.

Furthermore, the study also was limited by the reduction in variability of the overall sample with regard to racial background, educational background, marital status, income level, employment status, and use of PVA. Specifically, the sample was largely Caucasian (85%), highly educated (81% had a college degree), married (87%), employed full-time (76%), and part of a two-parent nuclear family (73%). Furthermore, over half (56%) of the sample reported a gross household income level of more than \$75,000. Based upon who is more likely to use the internet frequently (Dillman, 2000), the characteristics of the sample are typical of people who would be likely to complete an online survey, particularly with regard to education and income level. In the current study, the sample reported a low incidence of use of severe PVA, and the rare use of severe PVA was consistent with beliefs that severe PVA almost always could be harmful to children, regardless of the referent child age group. While such low incidence rates are common in research that involves assessments of extreme behaviors, variability in usage, as well as beliefs, would improve the ability to deepen the understanding of PVA through future studies. Furthermore, greater variability in the overall sample would permit the results of the study to generalize to a larger group of parents.

Limitations also were present with regard to child age group subsamples. Given that the data largely came from online survey completion, it was not possible to control the number of parents who completed the BPHS with regard to a particular referent child

age group. Participants were instructed to select one of the four age groups in which they had a biological child. Their choice was dependent upon the ages of their biological child(ren), as well as to their preference when choosing the group prior to beginning the actual survey. Despite the inability to control their selection, three of the four subsamples were surprisingly similar in size (early childhood: $n = 158$; middle childhood: $n = 80$; early adolescence: $n = 64$; mid-adolescence: $n = 71$); however, the small size of those three subsamples decreases confidence in the findings that there were no differences in factor structure across the four groups.

Finally, the limitation that had a major impact on the analyses of the study involved the evaluation of the *Beliefs about Severe PVA Scale*. The issues arising with this scale were described in the previous chapter. To summarize, the inability to treat the scale as having psychometric properties hindered efforts to refine it into a more parsimonious scale. The low variability in the scores for this scale limited the ability to detect expected relationships between beliefs about severe PVA and other constructs. Characteristics of the sample (i.e., higher education) may have influenced the distribution of scores on the *Beliefs about Severe PVA Scale*. The utilization of a more diverse sample would reveal whether or not more variability exists in beliefs about severe PVA. More variability in beliefs about severe PVA would strengthen relationships such that this construct is most closely related to other beliefs constructs, as well as correlated with Ordinary PVA items and use of PPA. Furthermore, it could be that increased variability in beliefs about severe PVA would permit the detection of significant relationships with use of PVA across all models, regardless of measure of use of PVA. The differences in the properties of the two scales also limited the ability to assess beliefs about PVA harm

as a latent construct in the analyses, thereby resulting in the scales being treated as manifest variables in analyses. That limitation prevented the examination of the broader construct, beliefs about PVA harm, in concurrent validity tests of the belief-behavior link.

Future Research Questions

The contributions of this instrument development study of the BPHS have implications for the empirical study of parenting and its consequences. This study provides initial evidence of ‘beliefs about PVA harm’ as a distinct construct and the two BPHS scales as valid, reliable measures of parents’ beliefs about ordinary PVA and beliefs about severe PVA. Future investigations of the belief-behavior link for PVA can build upon this first empirical study of beliefs about PVA harm. Findings from this research provide information about how beliefs are affected by several demographic variables. The findings from the current study indicate no differences exist in beliefs about ordinary PVA for the contextual factors examined (e.g., child age, child gender, family type, race, SES, and parent gender). For beliefs about severe PVA, differences did not exist for some of these factors (e.g., child gender, family type, and SES), but there were differences for others (e.g., child age group, race, and parent gender). These findings suggest the importance of examining demographic variables in future studies of beliefs about PVA harm and use of PVA. It will be particularly important for samples to include a sufficient number of both mothers and fathers, so that parent gender differences can be further explored.

The inclusion of parents from the general population extends knowledge about PVA based upon a sample of parents that shows some variability in beliefs about PVA harm and use of PVA. However, while the sample was recruited from the general

population, it is not necessarily representative of the general population given the sample characteristics already reported (i.e., largely Caucasian, highly educated, largely employed full-time, and largely two-parent nuclear families). It will be important in future studies to purposefully recruit a sample with more variability in racial background, educational background, marital status, income level, and employment status. The sample would be more likely to be representative across these demographic variables if participant recruitment included groups of parents who are mandated to attend child abuse prevention programs. These parents might express beliefs that harm comes from PVA at higher thresholds, as well as report using severe acts of PVA. When the characteristics are more representative of the general population, there is an increased likelihood of variability in beliefs about PVA harm and use of PVA, particularly in the incidence of severe PVA.

Future studies also could provide cross-validation of the two BPHS scales. This cross-validation could include adequate samples of parents from specific family types and cultures. Specifically, it will be important to examine the belief-behavior link for stepparents compared to biological parents. While there were stepfamilies in the current study, the focus of the responses provided by participants was on biological children. Other unique factors may be involved in the relationship between a stepparent's beliefs about harm from PVA and their use of PVA (e.g., the length of time in the stepfamily, involvement of the noncustodial parent, expectations for the stepparent role in discipline, etc.). Examining the belief-behavior link for stepchildren and biological children separately will provide knowledge about whether parents' beliefs about PVA harm differ

in the relationship to use of PVA based upon the parents' relationship to the child of focus.

In addition to cross-validation studies, it will be necessary to conduct further research to test the convergent and discriminant validity of the two BPHS scales, as well as the concurrent validity of the BPHS. Importantly, the findings from concurrent validity tests of the relationship of both beliefs about ordinary PVA and beliefs about severe PVA with use of PVA provide the first evidence of the belief-behavior link for PVA. Subsequent studies are needed to further examine the relationship between beliefs about PVA harm and use of PVA. Specifically, when data about beliefs about PVA harm and use of PVA are collected across time, it will be possible to conduct predictive validity tests to evaluate the causal direction of the belief-behavior link.

The examination of the moderating role of parental stress in this relationship through concurrent validity tests begins the inquiry of the complex processes that are likely involved in the belief-behavior link for PVA. Future studies not only should include further examinations of parental stress as a moderator, but also include other factors that may serve as potential moderators and mediators of the relationship between beliefs about PVA harm and use of PVA (e.g., attributions about children's behavior, parent characteristics, etc.).

Future studies also can extend the belief-behavior link one important step further through the examination of the links between beliefs, parenting behaviors, and outcomes for children. In addition to empirical knowledge of how beliefs about PVA harm influence use of PVA, it is important to empirically and prospectively assess the impact of use of PVA on children in order to determine thresholds at which different dimensions

and levels of harm result from its use. Knowledge of the actual harm from use of PVA could be compared to parents' beliefs about PVA harm in order to determine the accuracy of those beliefs, thereby permitting identification of beliefs that should be modified. Beliefs about PVA harm that inaccurately characterize the threshold at which harm occurs from specific acts of PVA could have detrimental impacts on children when the harm is significantly underestimated.

Furthermore, the BPHS may be utilized in future studies to understand processes involved in the etiology of differential beliefs about PVA harm. For example, future research could involve explorations of how childhood experiences with PVA, community culture, and/or preparation for the parenting role influence a parent's beliefs about PVA harm. Another important area to develop involves researchers utilizing a prospective study design to examine the stable vs. dynamic nature of parents' beliefs about PVA harm, particularly as related to child age, by examining the same parents' beliefs over time.

Practical Applications

In addition to the implications for empirical research, this study makes contributions to more informed practice. The BPHS can be used by educators in prevention and intervention programs to raise awareness of beliefs among parents. For example, it could be used as a starter activity in family-life education classes on parental aggression to explore beliefs about PVA harm. Such an activity could facilitate communication between partners and/or co-parents about their own beliefs about PVA harm.

While the current study provides evidence to suggest that beliefs about PVA harm are related to the level of use of PVA, much more research is needed before definitive prescriptions for prevention and intervention work can be offered. Not only does the causal link need to be determined, but also definitions of “inaccurate beliefs” need to be established. It also should be established that these beliefs about PVA harm are modifiable. Empirical evidence that parenting beliefs are dynamic and modifiable is found in Bugental and colleagues’ (2002) study that demonstrated participation in a home visitation program by mothers from families at risk for child maltreatment was associated with significantly lower prevalence of physical abuse when the program included a cognitive retraining component.

When integrating empirical knowledge about beliefs about PVA harm with education efforts, it will be imperative to examine the magnitude of the relationship with PVA for both beliefs about PVA harm and other related factors. Findings can guide decisions about target areas for prevention and intervention programs. This information would permit assessment of the feasibility of significantly reducing use of PVA through interventions focused solely on beliefs about PVA harm. For example, although parental stress was not found to moderate the belief-behavior link in the current study, it is possible that there are moderators of the belief-behavior link for PVA. Depending upon their potency, other more proximal intervening variables may be a better target than beliefs about PVA harm for prevention and intervention activities focused on reducing use of PVA.

Conclusion

As a result of this instrument development study, the BPHS consists of a parsimonious, 8-item *Beliefs about Ordinary PVA* Scale and a 20-item *Beliefs about Severe PVA* Scale, which provides an index of parents' beliefs about severe PVA. These two BPHS scales were developed, refined, and presented for (a) future research to elicit knowledge about parents' use of PVA, and (b) applied prevention and intervention programmatic work with parents. The results of this study are based upon data collected from a sample of 373 parents of children between the ages of 2 and 15. The evaluation of the factor structure for the *Beliefs about Ordinary PVA* Scale by the referent child age group utilized when responding to the BPHS did not indicate significant differences with regard to child age group; however, small subsample sizes make these results preliminary. Exploratory analyses for the *Beliefs about Severe PVA* Scale did indicate differences by referent child age group.

As measures of beliefs about other forms of parental aggression have aided researchers and practitioners, it is hoped that the BPHS will aid both researchers and practitioners who work with parents on issues related to PVA. While factors related to PPA have been well researched, knowledge of predictors and consequences of PVA is much more limited (e.g., Black et al., 2001; Kaplan et al., 1999). While there is empirical support for the belief-behavior link for PPA (e.g., Flynn, 1998; Markowitz, 2001; Pinderhughes et al., 2000), up until now little effort has been made to empirically define beliefs about PVA harm and to empirically examine the impact on use of PVA. This study is a first step towards addressing an important gap in the literature on parental

aggression and offers novel information on both the establishment of a distinct cognitive construct and its relation to specific parenting behaviors.

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APPENDICES

Appendix A

Information Letter for Paper Administration

INFORMATION LETTER
for a Research Study entitled
“The Beliefs about PVA Harm Survey: Testing the factor structure, validity, and relationship to use of parental verbal aggression and stress.”

If you are a parent of a child between the ages of 2 and 15, we invite you to participate in a research study on parents’ beliefs about harm from the use of parental verbal aggression (PVA). This study is being conducted by Melody M. Griffin, Doctoral Candidate, under the direction of Dr. Francesca Adler-Baeder, Associate Professor, in the Auburn University Department of Human Development and Family Studies. You were selected as a possible participant because of your participation in the parenting program funded by the Children’s Trust Fund of Alabama and are age 19 or older. From this study, we hope to learn about parents’ beliefs about PVA harm based upon different age groups of children. We also hope to learn more about how beliefs affect actual parenting behavior.

Participation in this study is voluntary. Your total time commitment will be approximately 25 minutes. Questions will include information about yourself, such as age, marital status, etc. Other questions will also be asked regarding your beliefs or opinions about certain parenting behaviors, stress you may be experiencing, and your use of certain parenting behaviors. Some of the questions may be sensitive in nature. You do not have to answer any question you do not want to answer. You may withdraw from participation at any time without penalty, and you may withdraw any identifiable data that has been collected about you. Your decision about whether or not to participate or to stop participating will not affect your current or future relations with the parenting program, Auburn University, the Department of Human Development and Family Studies, or the Children’s Trust Fund of Alabama.

All of the information that you provide in this survey will be treated as private and is being collected as anonymous data. Your name will not appear on your survey, and no code numbers will be assigned to connect you to your survey. If results of the study are published in a journal, no names of individuals will be included in these reports.

Program participants may recognize increased awareness of their beliefs about PVA harm, as well as their parental behavior. We cannot promise you that you will receive any or all of the benefits described. We hope you choose to participate as the responses you provide will assist researchers and family life educators in their efforts to strengthen the parent/child/family relationships you experience daily. If you have any questions, we invite you to ask them now. If you have questions later, contact Melody M. Griffin (334-353-4928, 334-844-3299, or griffmm@auburn.edu) or Dr. Francesca Adler-Baeder (francesca@auburn.edu).

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

Appendix B

Text of the Invitation Emails and Flyers

If you are a biological parent of a child between the ages of 2 and 15, you are invited to participate in a measurement development study for the Beliefs about PVA Harm Survey (BPHS). This study is focused on the beliefs that parents hold about the potential harm from the use of parental verbal aggression (PVA). It is being conducted by Melody M. Griffin, under the direction of Dr. Francesca Adler-Baeder from Auburn University. The online survey can be completed in 15 to 20 minutes.

Parenting has its challenges and rewards. While it is perhaps one of the most significant "crossroads" in a family, how the family receives this new "bundle of joy" will forever change the outlook of the family and each individual part of the family. The parenting patterns developed have a significant impact on children's outcomes. Currently, we do not know very much about the use of parental verbal aggression, what parents think about the use of verbal aggression, and how beliefs relate to actual behaviors. One of the reasons this hasn't been studied very much is due to the lack of a reliable, valid measure of beliefs. Once we can measure beliefs about harm from verbal aggression, then we can improve our ability to predict its use. This information and the developed measure have important implications for parent education.

If you decide to participate, please access the survey online at the following link:
(Password: wareagle)
http://www.surveymonkey.com/s.aspx?sm=FiIdD5bz8PwuJoJP8xKQnQ_3d_3d

Please answer each question as honestly and accurately as possible. There are no "right" or "wrong" answers. All responses will be anonymous. We hope you choose to complete our survey as the responses you provide will assist in the efforts to strengthen the parent/child/family relationships you experience daily. If you have any questions about this study, Melody (334-353-4928, 334-844-3299, or griffmm@auburn.edu) will be happy to answer them.

Appendix C

Text of the Reminder Emails

There is still time to participate in the "Beliefs about PVA Harm Survey" measurement development study! Biological parents of children between the ages of 2 and 15 are invited to participate. This study is the web-based research study on the beliefs that parents hold about the potential harm from the use of parental verbal aggression (PVA). It is being conducted by Melody M. Griffin, under the direction of Dr. Francesca Adler-Baeder from Auburn University. The anonymous online survey can be completed in 15 to 20 minutes.

Your participation will assist in the efforts to strengthen the parent/child/family relationships you experience daily. We are particularly grateful for your help because it is only by asking parents to share their beliefs and experiences that we can understand how beliefs predict the use of parental verbal aggression.

To participate, please access the survey online at the following link:
(Password: wareagle)

http://www.surveymonkey.com/s.aspx?sm=FiIdD5bz8PwuJoJP8xKQnQ_3d_3d

Please answer each question as honestly and accurately as possible. There are no "right" or "wrong" answers. If you have any questions about this study, Melody (334-353-4928, 334-844-3299, or griffmm@auburn.edu) will be happy to answer them.

Appendix D

Information Letter for Online Administration

INFORMATION LETTER
for a Research Study entitled
“The Beliefs about PVA Harm Survey: Testing the factor structure, validity, and
relationship to use of parental verbal aggression and stress.”

If you are a parent of a child between the ages of 2 and 15, we invite you to participate in a research study on parents’ beliefs about harm from the use of parental verbal aggression (PVA). This study is being conducted by Melody M. Griffin, Doctoral Candidate, under the direction of Dr. Francesca Adler-Baeder, Associate Professor, in the Auburn University Department of Human Development and Family Studies. From this study, we hope to learn about parents’ beliefs about PVA harm based upon different age groups of children. We also hope to learn more about how beliefs affect actual parenting behavior.

Participation in this study is voluntary. If you decide to participate, please click on the link below to complete the online survey. Your total time commitment will be approximately 25 minutes. Questions will include information about yourself, such as age, marital status, etc. Other questions will also be asked regarding your beliefs or opinions about certain parenting behaviors, stress you may be experiencing, and your use of certain parenting behaviors. Some of the questions may be sensitive in nature. You do not have to answer any question you do not want to answer. You do not have to submit your answers if you do not want them recorded.

All of the information that you provide in this survey will be treated as private and is being collected as anonymous data. You will NOT be asked for your name or your social security number.

Program participants may recognize increased awareness of their beliefs about PVA harm, as well as their parental behavior. We cannot promise you that you will receive any or all of the benefits described. We hope you choose to participate as the responses you provide will assist researchers and family life educators in their efforts to strengthen the parent/child/family relationships you experience daily. If you have any questions about this study, contact Melody M. Griffin (334-353-4928, 334-844-3299, or griffmm@auburn.edu) or Dr. Francesca Adler-Baeder (francesca@auburn.edu).

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. CLICKING ON THE BUTTON BELOW INDICATES YOU HAVE READ THIS PAGE AND ARE WILLING TO PARTICIPATE. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Appendix E

Survey Questions

[Demographic Questions]

Please tell us a little bit about yourself.

1. Your Age: _____
2. What is your marital status? Check one:
 Never Married Married Widowed
 Divorced Separated
3. Your Sex: Male or Female
4. What is your ethnic background? Check one:
 Caucasian/White African-American/Black Hispanic/Latino
 Asian-American Native-American Bi-racial
 Other (Please specify): _____
5. a. What is your work status? Check one:
 Full-time Part-time Not working for pay

b. If you are working for pay, what is your occupation? _____
6. Are you currently a student? Yes or No
7. What is the **highest** level of education that you have completed? Check one:
 Less than 7th grade Junior high school (9th grade)
 Partial high school (10th or 11th grade) Completed high school or GED
 Partial college or specified training 2-year college/Technical school degree
 4-year college degree Post-college degree (e.g., Master's, Ph.D., M.D.)
8. Please estimate your current **annual** household income (including child support received before taxes. Household income includes ALL money received by individuals who are 15 years or older. This money includes wages, self-employment income, pensions, social security, interest and dividends, and non-cash benefits, such as food stamps. *Feel free to estimate.*

<input type="checkbox"/> Less than \$15,000	<input type="checkbox"/> \$22,501 - \$25,000	<input type="checkbox"/> \$40,001 - \$45,000	<input type="checkbox"/> \$60,001 - \$65,000
<input type="checkbox"/> \$15,001 - \$17,500	<input type="checkbox"/> \$25,001 - \$30,000	<input type="checkbox"/> \$45,001 - \$50,000	<input type="checkbox"/> \$65,001 - \$75,000
<input type="checkbox"/> \$17,501 - \$20,000	<input type="checkbox"/> \$30,001 - \$35,000	<input type="checkbox"/> \$50,001 - \$55,000	<input type="checkbox"/> \$75,001 - \$85,000
<input type="checkbox"/> \$20,001 - \$22,500	<input type="checkbox"/> \$35,001 - \$40,000	<input type="checkbox"/> \$55,001 - \$60,000	<input type="checkbox"/> Over \$85,000
9. In what Alabama county do you live? _____
10. Who lives in your house with you? (Check all that apply.)
 your child(ren) your stepchild(ren)
 your boyfriend/girlfriend your husband/wife
 your father your mother
 your stepfather your stepmother
 your sister your brother
 Other (Please list): _____

11. Do you provide primary day-to-day parenting of your child(ren)? () Yes or () No

12. Please provide the following information about your children. Use the back of this page if more space is needed.

a. Are you expecting a child? YES or NO b. If yes, what is the due date? _____

Child	Sex	Age	How is this child related to you? (Check one)	Who does this child live with? (Check one)
Oldest	M F	_____	<input type="checkbox"/> Biological <input type="checkbox"/> Stepchild <input type="checkbox"/> Adopted <input type="checkbox"/> Grandchild <input type="checkbox"/> Foster child <input type="checkbox"/> Other: _____	<input type="checkbox"/> Just me <input type="checkbox"/> Other biological parent/guardian <input type="checkbox"/> On their own <input type="checkbox"/> Both biological parents <input type="checkbox"/> Me and partner/stepparent <input type="checkbox"/> Other biological parent and partner/stepparent <input type="checkbox"/> Joint Custody <input type="checkbox"/> Other: _____
2 nd to oldest	M F	_____	<input type="checkbox"/> Biological <input type="checkbox"/> Stepchild <input type="checkbox"/> Adopted <input type="checkbox"/> Grandchild <input type="checkbox"/> Foster child <input type="checkbox"/> Other: _____	<input type="checkbox"/> Just me <input type="checkbox"/> Other biological parent/guardian <input type="checkbox"/> On their own <input type="checkbox"/> Both biological parents <input type="checkbox"/> Me and partner/stepparent <input type="checkbox"/> Other biological parent and partner/stepparent <input type="checkbox"/> Joint Custody <input type="checkbox"/> Other: _____
3 rd to oldest	M F	_____	<input type="checkbox"/> Biological <input type="checkbox"/> Stepchild <input type="checkbox"/> Adopted <input type="checkbox"/> Grandchild <input type="checkbox"/> Foster child <input type="checkbox"/> Other: _____	<input type="checkbox"/> Just me <input type="checkbox"/> Other biological parent/guardian <input type="checkbox"/> On their own <input type="checkbox"/> Both biological parents <input type="checkbox"/> Me and partner/stepparent <input type="checkbox"/> Other biological parent and partner/stepparent <input type="checkbox"/> Joint Custody <input type="checkbox"/> Other: _____
4 th to oldest	M F	_____	<input type="checkbox"/> Biological <input type="checkbox"/> Stepchild <input type="checkbox"/> Adopted <input type="checkbox"/> Grandchild <input type="checkbox"/> Foster child <input type="checkbox"/> Other: _____	<input type="checkbox"/> Just me <input type="checkbox"/> Other biological parent/guardian <input type="checkbox"/> On their own <input type="checkbox"/> Both biological parents <input type="checkbox"/> Me and partner/stepparent <input type="checkbox"/> Other biological parent and partner/stepparent <input type="checkbox"/> Joint Custody <input type="checkbox"/> Other: _____
5 th to oldest	M F	_____	<input type="checkbox"/> Biological <input type="checkbox"/> Stepchild <input type="checkbox"/> Adopted <input type="checkbox"/> Grandchild <input type="checkbox"/> Foster child <input type="checkbox"/> Other: _____	<input type="checkbox"/> Just me <input type="checkbox"/> Other biological parent/guardian <input type="checkbox"/> On their own <input type="checkbox"/> Both biological parents <input type="checkbox"/> Me and partner/stepparent <input type="checkbox"/> Other biological parent and partner/stepparent <input type="checkbox"/> Joint Custody <input type="checkbox"/> Other: _____

[Beliefs about PVA Harm Survey (BPHS)]

Please indicate your beliefs about the use of the following parenting behaviors with children in the specified age group:

___ Age 2 – 5 ___ Age 6 – 9 ___ Age 10-12 ___ Age 13 – 15

Use the following scale to indicate the least amount of times over a 1-month period that you believe each parenting behavior could be harmful to a child in that age group. In other words, at what point would each behavior become harmful? Select the number of times to represent that point.

<p>Circle one number for each.</p> <p>How many times in <u>one month</u> could it be harmful to be...</p>	<p>Use the following scale: 0 = Always harmful 1 = 1-2 times 2 = 3-5 times 3 = 6-10 times 4 = 11-20 times 5 = More than 20 times 6 = Never harmful</p>
1. Yelling at a child that age.	0 1 2 3 4 5 6
2. Threatening to make a child that age stay outside for several hours.	0 1 2 3 4 5 6
3. Calling a child that age dumb.	0 1 2 3 4 5 6
4. Threatening to make a child that age stay in his/her bedroom for several hours.	0 1 2 3 4 5 6
5. Threatening to not let a child that age do anything until he/she has finished doing chores.	0 1 2 3 4 5 6
6. Shouting at a child that age.	0 1 2 3 4 5 6
7. Threatening to send a child that age away from home.	0 1 2 3 4 5 6
8. Telling a child that age he/she will not succeed at anything.	0 1 2 3 4 5 6
9. Threatening to destroy the favorite object of a child that age.	0 1 2 3 4 5 6
10. Screaming at a child that age.	0 1 2 3 4 5 6
11. Threatening to spank a child that age.	0 1 2 3 4 5 6
12. Threatening to withhold a meal from a child that age.	0 1 2 3 4 5 6
13. Swearing at a child that age.	0 1 2 3 4 5 6
14. Threatening to hit a child that age.	0 1 2 3 4 5 6

(Continued)	Use the following scale: 0 = Always harmful 1 = 1-2 times 2 = 3-5 times 3 = 6-10 times 4 = 11-20 times 5 = More than 20 times 6 = Never harmful
How many times in one month could it be harmful to be...	
15. Threatening to limit use of the favorite object for a child that age.	0 1 2 3 4 5 6
16. Telling a child that age he/she is not wanted.	0 1 2 3 4 5 6
17. Threatening to punch a child that age.	0 1 2 3 4 5 6
18. Threatening to not let a child that age do anything until all of the food is eaten from his/her plate.	0 1 2 3 4 5 6
19. Calling a child that age crazy/insane.	0 1 2 3 4 5 6
20. Cursing at a child that age.	0 1 2 3 4 5 6
21. Threatening to make a child that age go to bed early.	0 1 2 3 4 5 6
22. Threatening to kick a child that age out of the house.	0 1 2 3 4 5 6
23. Telling a child that age that he/she is ugly/unattractive.	0 1 2 3 4 5 6
24. Threatening to slap a child that age.	0 1 2 3 4 5 6
25. Threatening to make a child that age sleep outside.	0 1 2 3 4 5 6
26. Insulting a child that age.	0 1 2 3 4 5 6
27. Threatening to “knock the lights out” of a child that age.	0 1 2 3 4 5 6
28. Threatening to leave a child that age on the side of the road.	0 1 2 3 4 5 6
29. Calling a child that age lazy.	0 1 2 3 4 5 6
30. Threatening to not let a child that age watch his/her favorite television show.	0 1 2 3 4 5 6
31. Threatening to kill a child that age.	0 1 2 3 4 5 6
32. Calling a child that age worthless.	0 1 2 3 4 5 6

(Continued)	Use the following scale: 0 = Always harmful 1 = 1-2 times 2 = 3-5 times 3 = 6-10 times 4 = 11-20 times 5 = More than 20 times 6 = Never harmful
How many times in one month could it be harmful to be...	
33. Threatening to not let a child that age play or “hang out” with other children.	0 1 2 3 4 5 6
34. Threatening to kill the pet of a child that age.	0 1 2 3 4 5 6

[Marlowe-Crowne Social Desirability Scale—Short Form]

For each statement below, please circle whether the statement is TRUE (T) or FALSE (F) for you.

1. It is sometimes hard for me to go on with my work if I am not encouraged..... **T F**
2. I sometimes feel resentful when I don't get my way..... **T F**
3. On a few occasions, I have given up doing something because I thought too little of my ability..... **T F**
4. There have been times when I felt like rebelling against people in authority even though I knew they were right..... **T F**
5. No matter who I'm talking to, I'm always a good listener..... **T F**
6. There have been occasions when I took advantage of someone..... **T F**
7. I'm always willing to admit it when I make a mistake..... **T F**
8. I sometimes try to get even rather than forgive and forget..... **T F**
9. I am always courteous, even to people who are disagreeable..... **T F**
10. I have never been irked when people expressed ideas very different from my own..... **T F**
11. There have been times when I was quite jealous of the good fortune of others..... **T F**
12. I am sometimes irritated by people who ask favors of me..... **T F**
13. I have never deliberately said something that hurt someone's feelings..... **T F**

[Parenting Stress Index—Short Form (PSI-SF)—Parental Distress Subscale]

For each statement below, indicate your level of agreement or disagreement. Please fill in the blank with **a number**:

(1) Strongly Agree (2) Agree (3) Not Sure (4) Disagree (5) Strongly Disagree

[The 12 items from the PSI-SF—Parental Distress Subscale are protected by the copyright held by PAR, Inc.]

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[Child Abuse Potential Inventory (CAP)—Rigidity Scale]

The following questions include a series of statements which may be applied to yourself. Read each of the statements and determine whether you **AGREE (A)** or **DISAGREE (DA)** with the statement. Circle the letters corresponding with your response.

- A DA 1. People expect too much from me.
- A DA 2. Everything in a home should always be in its place.
- A DA 3. Little boys should never learn sissy games.
- A DA 4. Children should never disobey.
- A DA 5. My telephone number is unlisted.
- A DA 6. A child should never talk back.
- A DA 7. Children should stay clean.
- A DA 8. Children should be quiet and listen.
- A DA 9. A home should be spotless.
- A DA 10. Children should be seen and not heard.
- A DA 11. A good child keeps his toys and clothes neat and orderly.
- A DA 12. Children should always be neat.
- A DA 13. Children should never cause trouble.
- A DA 14. A child needs very strict rules.

[Deffenbacher Driving Anger Scale—Short Form]

Imagine that each situation described below was actually happening to you, and rate the amount of anger that would be provoked.

1. Someone is weaving in and out of traffic.

None At All A Little Some Much Very Much

2. A slow vehicle on a mountain road will not pull over and let people by.

None At All A Little Some Much Very Much

3. Someone backs right out in front of you without looking.

None At All A Little Some Much Very Much

4. Someone runs a red light or stop sign.

None At All A Little Some Much Very Much

5. You pass a radar speed trap.

None At All A Little Some Much Very Much

6. Someone speeds up when your try to pass him/her.

None At All A Little Some Much Very Much

7. Someone is slow in parking and is holding up traffic.

None At All A Little Some Much Very Much

8. You are stuck in a traffic jam.

None At All A Little Some Much Very Much

9. Someone makes an obscene gesture toward you about your driving.

None At All A Little Some Much Very Much

10. Someone honks at you about your driving.

None At All A Little Some Much Very Much

11. A bicyclist is riding in the middle of the lane and is slowing traffic.

None At All A Little Some Much Very Much

12. A police officer pulls you over.

None At All A Little Some Much Very Much

13. A truck kicks up sand or gravel on the car you are driving.

None At All A Little Some Much Very Much

14. You are driving behind a large truck and you cannot see around it.

None At All A Little Some Much Very Much

[Adult-Adolescent Parenting Inventory (AAPI-2)—

Strong Belief in the Use and Value of Corporal Punishment Scale]

For each statement below, indicate your level of agreement or disagreement. Please fill in the blank with a number:

(1) Strongly Agree (2) Agree (3) Uncertain (4) Disagree (5) Strongly Disagree

1. Spanking children when they misbehave teaches them how to behave: _____.
2. Children who bite others need to be bitten to teach them what it feels like: _____.
3. You cannot teach children respect by spanking them: _____.
4. Children learn violence from their parents: _____.
5. Children who are spanked usually feel resentful towards their parents: _____.
6. Strong-willed toddlers need to be spanked to get them to behave: _____.
7. Mild spankings can begin between 15 and 18 months of age: _____.
8. If a child is old enough to defy a parent, then he or she is old enough to be spanked: _____.
9. If you love your children, you will spank them when they misbehave: _____.
10. Never hit a child: _____.
11. Children who are spanked behave better than children who are not spanked: _____.

[Perceived Stress Scale (PSS-10)]

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Indicate the response that seems like a reasonable estimate.

In the last month, how often have you...

1. Been upset because of something that happened unexpectedly?

Never Almost Never Sometimes Fairly Often Very Often

2. Felt that you were unable to control the important things in your life?

Never Almost Never Sometimes Fairly Often Very Often

3. Felt nervous and “stressed”?

Never Almost Never Sometimes Fairly Often Very Often

4. Felt confident about your ability to handle your personal problems?

Never Almost Never Sometimes Fairly Often Very Often

5. Felt that things were going your way?

Never Almost Never Sometimes Fairly Often Very Often

6. Found that you could not cope with all the things that you had to do?

Never Almost Never Sometimes Fairly Often Very Often

7. Been able to control irritations in your life?

Never Almost Never Sometimes Fairly Often Very Often

8. Felt that you were on top of things?

Never Almost Never Sometimes Fairly Often Very Often

9. Been angered because of things that happened that were outside of your control?

Never Almost Never Sometimes Fairly Often Very Often

10. Felt difficulties were piling up so high that you could not overcome them?

Never Almost Never Sometimes Fairly Often Very Often

For the rest of the survey, respond with regard to YOUR child who is in the age group that you selected earlier. Please confirm once more which age group you selected.

___ Age 2 – 5 ___ Age 6 – 9 ___ Age 10-12 ___ Age 13 – 15

Please also confirm the following information about YOUR child:

Your Child’s Age: _____ Your Child’s Gender: () Male or () Female

**[Conflict Tactics Scales—Parent to Child Version (CTS-PC) (Items 1-22)]
[PVA Items (Items 23-28)]**

Children often do things that are wrong, disobey, or make their parents angry. We would like to know what you have done when this specific child did something wrong or made you upset or angry. Below is a list of things you may have done in the past month. Please indicate how often in the past month you have done each thing.

[The 22 items from the CTS-PC are protected by the copyright held by Western Psychological Services. Only the PVA Items are included below.]

Circle one number for each. How many times in the past month have you...	Use the following scale: 1 = Once 2 = Twice 3 = 3-5 times 4 = 6-10 times 5 = 11-20 times 6 = More than 20 times 7 = Not in the past month, but it happened before. 0 = Has never happened.
23. Threatened to slap him/her but did not actually do it.	1 2 3 4 5 6 7 0
24. Called him/her ugly or some other name like that.	1 2 3 4 5 6 7 0
25. Threatened to withhold a meal.	1 2 3 4 5 6 7 0
26. Said to him/her that he/she is not wanted.	1 2 3 4 5 6 7 0
27. Threatened to limit use of his/her favorite toy.	1 2 3 4 5 6 7 0
28. Threatened to leave him/her on the side of the road.	1 2 3 4 5 6 7 0

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[Parenting Scale—Overreactivity]

Please answer these questions for YOUR same child that you had in mind above. Rate your response on a scale of 1 to 7 – with 1 being that you completely agree with the response on the left and 7 being that you completely agree with the response on the right.

1. When I am upset or under stress...

I am picky and on my child's back. 1 2 3 4 5 6 7 I am no more picky than usual.

2. When my child misbehaves...

I usually get into a long argument with my child. 1 2 3 4 5 6 7 I ignore the pestering.

3. When my child misbehaves...

I raise my voice or yell. 1 2 3 4 5 6 7 I speak to my child calmly.

4. When there is a problem with my child...

things build up and I do things I don't mean to do. 1 2 3 4 5 6 7 things don't get out of hand.

5. When my child misbehaves...

I handle it without getting upset. 1 2 3 4 5 6 7 I get so frustrated or angry that my child can see I'm upset.

6. When my child does something I don't like, I insult my child, say mean things, or call my child names...

never or rarely. 1 2 3 4 5 6 7 most of the time.

Thank you for taking the time to complete this survey!

Appendix F

Descriptive Statistics on Measures

Descriptive Statistics on Measures

Measure	<i>N</i>	Min	Max	M	SD
Beliefs about Ordinary PVA Scale	373	1.00	7.00	4.35	1.49
Beliefs about Severe PVA Scale	373	0	1.00	.95	.10
AAPI-2—Strong Belief in the Use and Value of Corporal Punishment Scale	347	1.00	4.18	2.52	.79
CAP—Rigidity Scale	356	0	1.00	.17	.17
CTS-PC—Psychological Aggression Scale	341	0	18.25	1.24	1.98
Ordinary PVA	340	0	8.33	.48	.71
Parenting Scale—Overreactivity	339	1.00	6.40	3.41	1.02
CTS-PC—Physical Assault Scale (Minor)	341	0	2.54	.13	.30
Deffenbacher Driving Anger Scale—Short Form	350	1.00	4.43	2.62	.66
PSI-SF—Parental Distress Scale	360	1.00	4.25	2.03	.60
Perceived Stress Scale	344	0	3.50	1.48	.58
Marlowe-Crowne Social Desirability Scale—Short Form	367	0	1.00	.48	.23