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Multidisciplinary Child Protection Decision Making About Physical Abuse: Determining Substantiation Thresholds and Biases

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Abstract

The current study examined the threshold at which multidisciplinary child protection team (CPT) professionals substantiate physical abuse allegations and the extent that they utilize potentially biased constructs in their decision making when presented with the same case evidence. State legal definitions of child maltreatment are broad. Therefore, the burden of interpretation is largely on CPT professionals who must determine at what threshold physical acts by parents surpass corporal discipline and constitute child physical abuse. Biased or subjective decisions may be made if certain case-specific characteristics or CPT professionals' personal characteristics are used in making physical abuse determinations. Case vignettes with visual depictions of inflicted injuries were sent to CPT professionals in Florida and their substantiation decisions, personal beliefs about corporal discipline, and coercive discipline were collected. Results of the study demonstrated relatively high agreement among professionals across vignettes about what constitutes physical abuse. Further, CPT professionals strongly considered their perceptions of the severity of inflicted injuries in substantiation decisions. Although case specific characteristics did not bias decisions in a systematic way, some CPT professional characteristics influenced the substantiation of physical abuse. Practice implications and future directions of research are discussed.

Keywords

Multidisciplinary child protection assessment; physical abuse; decision making; substantiation; bias

1. Introduction

The decision to substantiate child abuse allegations requires simultaneous consideration of a specified level of evidence of maltreatment, the severity of harm a child experienced, and in some jurisdictions, the risk of harm to a child (Cross & Casanueva, 2009; Drake, 1996). The decision making process is complex and the resultant recommendations multidisciplinary child protection team (CPT) professionals make about services or court involvement may have significant implications for the immediate and long term functioning and safety of a family (Lindsey, 1992; Slep & Heyman, 2006). Given the considerable impact, it is critical

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that CPT professionals' substantiation decisions are driven by legal statutes and objective standards. Within Florida, child abuse is legally defined as "any willful act or threatened act that results in any physical, mental, or sexual injury or harm that causes or is likely to cause the child's physical, mental, or emotional health to be significantly impaired" (Fla. Stat. § 39.01, 2009). While a significant body of research has supported that CPT professionals' substantiation decisions are in fact influenced by objective constructs generally reflected in state statutes (e.g., level of evidence and severity of harm), professional decisions also appear to be influenced by a number of other factors not guided by state laws (Cross & Casanueva, 2009; English, Marshall, Coghlan, Brummel, & Orme, 2002; King, Trocmé, & Thatte, 2003). This raises concerns regarding unreliability of decisions and the possible presence of substantiation bias in child protection evaluations (Baird & Wagner, 2000; Slep & Heyman, 2006).

1.1. Bias in abuse substantiation decisions

The presence of substantiation bias, defined as any tendency of a child protection professional to base a decision on inappropriate factors such as the demographic characteristics of those involved in the allegations, certain child characteristics or the professional's own socioeconomic status, race, or personal beliefs, is particularly concerning as it may result in unnecessary adverse effects on families' lives (e.g., the prosecution of the alleged perpetrator, failure to protect children from harm, the recommendation of unneeded services, and/or unnecessary placement of children in alternative care; Drake & Zuravin, 1998).

Numerous studies have demonstrated that statute driven constructs including professionals' perceptions of the severity of harm and evidence (e.g., medical evidence, perpetrator disclosure, child disclosure) significantly influence substantiation decisions (e.g., Craft, Epley, & Clarkson, 1981; Cross & Casanueva, 2009; Drake, 1995; English et al., 2002; Giovannoni, 1989; Trocmé, Knoke, Fallon, & MacLaurin, 2009; Trocmé, Tam, & McPhee, 1995; Winefield & Bradley, 1992). However, case-specific factors such as family socioeconomic status (King et al., 2003), children's sex (Cross & Casanueva, 2009), race (King et al., 2003; Trocmé et al., 2009), and behavior of the child (Scannapieco & Connell-Carrick, 2005) as well as child protection professional characteristics including professional age, sex (Rossi, Schuerman, & Budde, 1999), and perceptions of the parents (Alter, 1985; English et al., 2002) have also been found to influence substantiation decisions.

How such case-specific and child protection professionals' personal characteristics systematically represent valid or objective constructs that should influence decision-making is less clear, as is the extent of their impact on substantiation decisions. Other studies have found that some case factors and child protection professional characteristics have minimal or no impact on substantiation decisions (e.g., Ards et al., 2003; Drake & Zuravin, 1998; Rossi et al., 1999; Wells, Fluke, & Brown, 1995). Given that it remains unclear whether systemic bias exists in substantiation decisions, continued research in this area is warranted to ensure that child protection evaluations are as objective as possible.

1.2. Substantiation decisions for physical abuse

The professional community has had long standing concerns about the lack of uniform or clear definitions regarding child physical abuse (Kellogg & the Committee on Child Abuse and Neglect, 2007). Specifically, difficulties may arise when differentiating between physical or corporal discipline of a child, a legal act which continues to be utilized in the United States (Straus & Stewart, 1999), and the use of physical force to cause harm, which is illegal and constitutes abuse. Florida State Statutes differentiate corporal discipline from physical abuse stating: "Corporal discipline of a child by a parent or legal custodian for

disciplinary purposes does not itself constitute abuse when it does not result in harm to the child” (Fla. Stat. § 39.01, 2009). Based on these intentionally broad legal definitions, CPT professionals are charged with differentiating whether a specific act by a caregiver or responsible adult is below the threshold for abuse and constitutes corporal discipline, or if it constitutes physical abuse and a basis for substantiation.

While Florida statutes provide broad definitions of physical abuse and corporal discipline, the American Academy of Pediatrics (AAP; American Academy of Pediatrics [AAP] Committee on Psychosocial Aspects of Child and Family Health, 1998) provides a detailed definition of spanking which may assist child protection professionals in distinguishing corporal discipline from physical abuse. The AAP defines spanking as “striking a child with an open hand on the buttocks or extremities with the intention of modifying behavior without causing physical injury” (p. 723). The AAP also provides further guidelines for the “acceptability” of the use of implements (i.e., open hand versus closed hand/objects), location (i.e., buttocks or extremities versus other parts of the body), intensity (i.e., marks lasting less than a few minutes versus marks lasting more than a few minutes), and parent affect during corporal discipline (i.e., calm versus angry; p. 725-726). However, the extent that child protection professionals consider this definition in their decision-making about substantiation is not known. If child protection professionals are not provided with specific concrete guidelines for case disposition decisions, such as those provided by AAP, it may increase the probability of variability in substantiation decisions and that their own schemas and personal views of discipline influence their decisions. Therefore, the primary focus of this study is to gain a better understanding of the degree to which child protection professionals agree regarding substantiation decisions when considering the same evidence about different types of inflicted injuries. The extent that biases influence substantiation decisions will also be explored.

1.3. Methodological considerations

The lack of consensus in research findings on the presence of a substantiation bias could also be due in part to data collection methods (e.g., national data sets, case vignettes) across studies (Egede, 2006). For example, previous studies that have utilized case vignette research designs to examine factors related to child protection decisions and perceptions typically only include written information (e.g., Bolton & Lennings, 2010; Bornstein, Kaplan, & Perry, 2007; Craft et al., 1981). However, in practice, the evaluation of acute physical abuse allegations is largely dependent upon the collection of medical evidence which requires visual examination of injuries. Therefore, written case vignettes may be limited in their ability to capture the decision making process about physical abuse allegations. This study seeks to improve upon previous case vignette methodology by including visual depictions of inflicted injuries in addition to written information within each case vignette.

1.4. The present study

While a considerable body of research has examined the extent that statute-driven constructs, case-specific factors, and CPT professional characteristics influence substantiation decisions, the following remains unclear: (a) At what level of intensity (e.g., marks lasting more than a few minutes) do inflicted injuries represent physical abuse? (b) How are different types of inflicted injuries (e.g., implement used, location, number of marks) viewed by child protection professionals with respect to their decision making? (c) When CPT professionals are presented with the same visual and written evidence about physical abuse allegations, to what extent does bias influence substantiation decisions above and beyond statute driven constructs?

Specifically, it was hypothesized that when presented with the same evidence about inflicted injuries:

1. CPT professionals would vary in case disposition decisions (i.e., physical abuse versus corporal discipline) regarding inflicted injuries that resulted in a bruise(s) or mark(s).
2. Potentially non-objective characteristics of the case (i.e., child age, race, ethnicity, behavior preceding inflicted injury, parent affect, history of corporal discipline use) would predict physical abuse substantiation decisions above and beyond perceptions of severity of harm.
3. Personal characteristics of the CPT professional (i.e., age, sex, race, educational level, case experience, and perceptions of the acceptability of discipline practices) would predict physical abuse substantiation decisions above and beyond perceptions of severity of harm.

The examination of these questions will provide a better understanding of the reliability of physical abuse substantiation decisions and whether there is substantiation bias in Florida child protection assessments. Findings will clearly inform areas of relative strength and weakness in Florida CPT assessment practices.

2. Method

2.1. Child Protection Team

In Florida, a medically directed, multidisciplinary statewide CPT program was developed to provide expertise during child protection investigations of complex cases of child abuse and neglect (Children's Medical Services, 2009). All reports of alleged child maltreatment are reviewed by CPTs within Florida. Upon review and acceptance of a referral from child protective services, CPTs determine the appropriateness and necessity of one or more of the following assessment activities: forensic medical evaluations, specialized and forensic interviews, and/or psychological evaluations (Children's Medical Services, 2009). CPTs provide these assessment services to all children in the state of Florida meeting criteria for referral in approximately 51 locations across the state.

2.2. Participants

All CPT professionals in Florida who conduct physical abuse assessment activities (e.g., interviews, medical evaluations) with valid mailing addresses from a statewide database (Child Protection Team Information System; $N = 257$) were invited to participate in the current study. The study was conducted in accordance with the approvals of the Florida Department of Health Institutional Review Board (IRB) and a university-based IRB. To increase participation, a preliminary invitation to participate was emailed to all CPT professionals prior to mailing research packets to prospective participants. Of individuals invited to participate, 138 participants returned completed study protocols resulting in a participation rate of 54% which is comparable to other child maltreatment survey research (e.g., Kalichman, Craig, & Follingstad, 1990; Khan, Rubin, & Winnick, 2005; Zellman, 1992). However, fewer than the expected amount of physicians and nurse practitioners, who are responsible for forensic medical evaluations, participated in the study. Personal and professional characteristics of CPT personnel are provided in Table 1. All respondents who completed and returned the study protocol were compensated with a \$20 gift card.

2.3. Measures

2.3.1. Professional demographics questionnaire—Demographic information was collected for all participants including age, gender, race, education, professional discipline, and estimation of exposure to child protection cases.

2.3.2. Parenting discipline practices (PDP)—The PDP is a 31-item Likert Scale self-report measure (0: Very Unacceptable to 5: Very Acceptable) that was designed to assess personal beliefs about the acceptability of corporal discipline (e.g., spanking, hitting, pulling, pinching, and slapping), coercive discipline techniques (e.g., bargaining, glaring at the child, scolding, raising voice, threatening punishment), and non-coercive discipline techniques (e.g., time-out, reasoning, restriction of privileges, verbal reprimand, and ignoring). The PDP has displayed adequate internal consistency in previous studies ($\alpha = .81$; Ibanez, Borrego, Pemberton, & Terao, 2006; Ibanez, Borrego, & Terao, 2003). The current study found adequate internal consistency for the total scale ($\alpha = .85$), the acceptability of corporal discipline scale ($\alpha = .85$), the acceptability of coercive discipline techniques ($\alpha = .78$), and the acceptability of non-coercive discipline techniques ($\alpha = .73$). All three subscales were explored as predictors of substantiation decisions.

2.4. Case vignettes

As a statewide program, CPT assessment reports are designed to be uniform and contain similar subject content across different CPT sites. Therefore, case vignettes depicting incidents involving parental use of physical punishment (e.g., hitting, spanking, hitting with an object such as a belt or clothes hanger) were developed to ensure that information provided was consistent with the CPT assessment report format. Case vignettes ($N = 8$) were developed by a multi-disciplinary child maltreatment research team comprised of representatives from medicine, law, and psychology. Each vignette included: a description of a boy seen by a CPT for a medical evaluation and interviews; demographic information about the boy; information about how and where the child was hit; an explanation of the child's behavior preceding the inflicted injury; a description of the parent's affect during the event; an admission by the parent with regard to inflicting the injuries on the child; a statement about the parent's tendency to use corporal discipline; and a medical confirmatory statement that the injuries were consistent with the history that the parent inflicted the injuries. Following a description of the incident, a medical description of the inflicted injuries was provided.

The eight case vignettes (See Appendix) were developed to include different types of inflicted injuries (whether injury was inflicted by an open hand [$n = 4$] or object [$n = 4$]) locations (buttocks or extremities [$n = 5$] or other parts of the body [$n = 3$]), and number of groupings of marks (singular grouping [$n = 6$] or multiple groupings [$n = 2$]). Different types of injuries were included to determine if type, location, and number of inflicted injuries influenced substantiation decisions. Beyond written case vignette information, medical research team members worked closely with a medical illustrator to create computer generated medical illustrations of the inflicted injuries (See Appendix). Illustrations were created to look as realistic as possible and to correspond with the medical description of the inflicted injuries. Computer generated medical illustrations were then attached to their corresponding vignettes so participants could utilize visual information in their decision-making. The presentation order of the eight case vignettes within each research packet was randomized to control for response bias.

2.4.1. Primary outcome—After reading each case vignette and viewing the corresponding medical illustration, participants decided whether the inflicted injury

represented *corporal discipline* or *physical abuse*. The respondents' case disposition decision served as the dichotomous dependent variable.

2.4.2. Predictor variables—All CPT professional characteristics (i.e., age, gender, race, education, professional discipline, and estimation of exposure to child protection cases) were examined as possible predictors of substantiation decisions. CPT professionals' perceptions of the acceptability of corporal discipline, coercive discipline, and non-coercive discipline were also explored to examine whether personal perceptions influence decision-making. Beyond CPT professional characteristics, case-specific characteristics including *child age* (6-12 years old), *child race* (Black or White), *child ethnicity* (Hispanic or non-Hispanic), *child behavior preceding inflicted injury* (normal developmental behavior or aggressive/destructive behavior), *parent affect* (angry or calm), and *parent typical use of corporal discipline* (regular or isolated) were randomized within vignettes to evaluate the relative effect of case characteristics on decision making. Regarding computer generated medical illustrations, depictions of inflicted injuries remained the same for each vignette but skin tone was systematically altered to represent the randomized child race (Black or White). The researchers recognized that two skin tones clearly do not represent the range of skin tones that are representative of different races. However, the number of potential participants for this study would not allow enough statistical power to include a wide range of skin tones for the current study. The randomization of case characteristics and the order of presentation of vignettes were completed using a random number generator in Microsoft Excel.

Following review of the case vignette and medical illustration, participants were asked to rate the overall severity of the inflicted injury on a 4 point Likert Scale (1: Not Severe to 4: Severe) to explore the influence of perceptions of severity of harm on case determination.

2.5. Statistical approach

All statistical analyses were conducted using Predictive Analytics SoftWare (PASW) Statistics Version 18. Frequency analyses were conducted for each vignette to determine the extent that child protection professionals agreed that inflicted injuries that left marks represented physical abuse versus corporal discipline. Frequency analyses also allowed qualitative exploration of how different types of inflicted injuries (e.g., implement used, location, number of grouping of marks) were viewed by CPT professionals with respect to their decisions making.

In order to examine the extent bias impacted case disposition decisions, binomial logistic regression analyses were conducted. Prior to regression analyses, case vignettes with more than 90% agreement on case disposition decisions were excluded from further analyses due to insufficient cell size. Of the original eight vignettes, three vignettes were excluded from further analyses: Vignette D: 91.9% agreement; Vignette E: 91.2% agreement; Vignette H: 96.3% agreement. Preliminary bivariate correlations were conducted for the remaining five vignettes (Vignettes A, B, C, F, G) with all case-specific factors (child's age, race, ethnicity, and behavior preceding physical injury, parent's affect during the event, family's tendency to use physical punishment as a form of discipline), CPT professionals' perceived severity of inflicted injury ratings, and CPT professional characteristics (child protection professional's age, gender, race, education status, professional discipline, case exposure, parental status, beliefs about the acceptability of corporal discipline, coercive discipline techniques, and non-coercive discipline techniques) on the dependent variable (case disposition decision) for each vignette to determine entry in the final model. All categorical variables were re-coded into binary values prior to preliminary bivariate correlation analyses. In particular, CPT professional race was collapsed into a binary categorical variable differentiating between "White" and "Other Race" because fewer than expected

Black/African American, Asian, American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, or Some Other Race child protection professionals responded to the questionnaires ($n_{\text{White}} = 115$; $n_{\text{Other}} = 23$; $N = 138$).

No case specific characteristics were significantly correlated with case disposition decisions and therefore were excluded from the final regression model (see Table 2). Perceived severity of inflicted injury ratings were significantly correlated with all case disposition decisions (see Table 2). Of CPT professionals' characteristics, race, education, and personal beliefs about acceptability of corporal discipline and coercive discipline were significantly correlated with case disposition decisions (see Table 2). All other child protection professional characteristics were excluded from the final regression model.

The final binomial logistic regression analyses were then conducted to examine the impact of perceived severity of inflicted injuries, child protection professional's race, education status, beliefs about corporal discipline, and beliefs about coercive discipline techniques on the dependent variable (case disposition decision) for each of the five remaining vignettes. The odds ratios (*OR*) were examined for each predictor, with alpha values ≤ 0.05 indicating significance.

3. Results

3.1. CPT professional case disposition decisions about inflicted injuries

CPT professionals rated the severity of inflicted injuries in all case vignettes as between minor to moderate severity (Vignette A: $M = 2.53$, $SD = .67$; B: $M = 2.67$, $SD = .68$; C: $M = 2.45$, $SD = .74$; D: $M = 2.82$, $SD = .69$; E: $M = 2.81$, $SD = .66$; F: $M = 2.72$, $SD = .74$; G: $M = 2.39$, $SD = .75$; and H: $M = 2.92$, $SD = .69$). Overall, CPT professionals displayed relatively high agreement in that any inflicted injury that left a mark was substantiated as child physical abuse. That is, in 6 of the 8 vignettes CPT professionals displayed high inter-rater agreement ($> 80\%$) in classifying inflicted injuries as physical abuse when presented with the same evidence (Vignette A = 81%, B = 88.4%, D = 91.9%, E = 91.2%, F = 85.7%, and H = 96.3%). Of the six vignettes that were classified as physical abuse at least 80% of the time, multiple grouping of marks were present in 5 of the 6 vignettes and a belt was used to inflict the injuries in 4 out of the 6 vignettes. Finally, agreement was highest for the classification of physical abuse in Case Vignette H, which depicted a child who was hit in the face with an open hand that resulted in a bruise to the child's cheek. This result suggests that CPT professionals consider the location of injuries in their decision-making process (i.e., because injuries to the head have the potential for greater harm). In the two remaining case vignettes, at least 70% of CPT professionals agreed that inflicted injuries represented physical abuse (Vignette C = 76.5%, G = 73.5%). In Case Vignette C, the parent hit the child on the buttocks with an open hand and left a singular mark. It is possible that this injury was classified less frequently as physical abuse because the location (i.e., buttocks) and implement (i.e., hand) are very similar to common corporal discipline methods with the only difference being an injury classified as a mark. In Case Vignette G, the parent scratched the child on the neck, which resulted in abrasions consistent with fingernail marks. Of the eight case vignettes, CPT professionals perceived the severity of this inflicted injury as less severe than any of the other injuries.

3.2. The extent that bias influences substantiation decisions

The results of the binomial logistic regression analyses are displayed in Table 3. Chi-square analyses were significant across all five models suggesting that there is adequate fit of the data to the models. CPT professionals' perceptions of the severity of inflicted injuries significantly predicted respondents' decisions to classify inflicted injuries as physical abuse

across all five case vignettes. Specifically, for a 1-unit increase in perceived severity of inflicted injury, odds were approximately four times greater that respondents would decide that inflicted injuries represented physical abuse across all five case vignettes (average *OR* of 3.96).

CPT professionals' race significantly predicted substantiation decisions in three out of the five case vignettes. That is, the odds of classifying inflicted injuries as physical abuse rather than corporal discipline are reduced by an average factor of .19 if the respondent was Other race rather than White in Case Vignettes A, B, and F.

Other CPT professional characteristics impacted decision-making in specific instances, but not across vignettes. For example, CPT professionals' education level significantly predicted the decision to classify inflicted injuries described as "two blue/purple strap marks and a nearby smaller bruise on the lateral aspect of the right arm" (Case Vignette B) as physical abuse. Professionals with advanced degrees (Master's degree or higher) were approximately 3.5 times more likely to classify these injuries as physical abuse as opposed to professionals with Bachelor's degrees. Also, respondents' beliefs about the acceptability of corporal discipline were predictive of the decision to classify Case Vignette C injuries, "patterned petechial bruising forming the negative partial imprint of a hand on the left buttock," as physical abuse. That is, professionals who rated the use of corporal discipline as more acceptable were less likely to classify the injury as physical abuse by an average factor of .37. Professionals' beliefs about the acceptability of coercive discipline failed to significantly impact decision making about physical abuse substantiation across all case vignettes.

4. Discussion

The current study sought to extend the child maltreatment decision-making literature by exploring the threshold at which professionals substantiate physical abuse allegations when an injury is present by varying the location, type of implement used, and number of grouping of markings presented. In addition, other case specific and CPT professional characteristics were explored as potential constructs introducing bias into physical abuse substantiation decisions. This study also sought to improve upon the methodology of previous child abuse case vignette studies by including visual depictions of inflicted injuries. In general, it is impressive that CPT professionals were in high agreement (>80% agreement in six vignettes, >70% agreement in two vignettes) that any inflicted injury that left a mark on a child represented physical abuse, given the vague state legal definitions of child abuse. The results of this study suggest that CPT professionals perceive that any inflicted injury that leaves a mark on a child results in "harm that causes or is likely to cause the child's physical, mental, or emotional health to be significantly impaired" (Fla. Stat. § 39.01, 2009).

Different types of inflicted injuries impacted the extent that professionals classified injuries as physical abuse, suggesting that child protection professionals consider (perhaps not consciously) the AAP's guidelines for "acceptable" spanking. Specifically, inflicted injuries were most frequently classified as physical abuse when (a) there were multiple injuries present, (b) when an object (e.g., belt) was used to inflict the injuries, and (c) when the location of the injury (e.g., head) was perceived as more severe.

The extent that CPT professional characteristics and case-specific factors predicted physical abuse substantiation decisions was also evaluated. The strongest predictor of substantiation decisions across all case vignettes was perceived severity of inflicted injuries. It is important that child protection professionals include severity of harm during the decision making process as existing child maltreatment research and policy have provided empirical support

for including ratings of severity during child abuse evaluations (Barnett, Manly, & Cicchetti, 1993; Cross & Casanueva, 2009; Drake, 1995; Litrownik et al., 2005).

Beyond perceived severity of inflicted injuries, CPT professional characteristics including professional race, education, and beliefs about the acceptability of corporal discipline impacted substantiation decisions in particular instances. It is less clear how these factors represent valid constructs that should influence decision-making. For example, when presented with the same visual and written evidence about inflicted injuries in three case vignettes, Other race respondents (i.e., Black/African American or Other race) were less likely to substantiate allegations with multiple inflicted injuries as physical abuse when compared to White respondents. It may be that Other race CPT professionals are less likely to classify particular inflicted injuries as physical abuse due to different cultural values and beliefs about children. It could also be in reaction to the over-representation of minority children within the context of child welfare statistics (e.g., King et al., 2003; Trocmé, et al., 2009). However, these findings and their interpretations should be interpreted with caution because the number of Other race respondents in the study was low and Other race categories were comprised of more than one racial classification that may not generalize to specific racial groups.

CPT professionals' education level and beliefs about the acceptability of corporal discipline also impacted decision-making in one case vignette each, suggesting that these constructs do not regularly impact child protection professionals' substantiation decisions. If there is truly a tendency for professionals with higher levels of education to substantiate physical abuse allegations more than those with bachelor's degrees, it may be due to differences in exposure to child maltreatment research and training; this additional training may systematically alter how they perceive injuries relative to professionals with less education.

CPT professionals who rated corporal discipline as more acceptable (e.g., view spanking as acceptable) were less likely to classify a singular injury that was a result of a parent hitting a child once on the buttocks with an open hand as physical abuse. This vignette captures, in a sense, more of the gray area delineating the threshold between corporal discipline and physical abuse. Recall the AAP definition of the "acceptable" use of spanking as "striking a child with an open hand on the buttocks or extremities with the intention of modifying behavior without causing physical injury" (p. 723). Although spanking a child on the buttocks with an open hand is legally and conventionally the most common form of corporal discipline, the only thing differentiating it from physical abuse is the presence of an injury. Legal statutes exclude corporal discipline from the physical abuse classification if it does not result in "harm to the child" (Fla. Stat. § 39.01, 2009). In these types of cases, CPT professionals who bring their own personal perceptions about corporal discipline into the evaluation process clearly reduce the objective nature of the child maltreatment evaluation, because they likely differ in their interpretation of "harm to the child" in these instances.

Despite the influence of CPT characteristics and beliefs on substantiation decisions in some instances, no case-specific demographic factors (e.g., child age, race, and ethnicity) or situation-specific factors (e.g., child behavior, parent affect, and family tendency to use corporal discipline) impacted CPT professionals' substantiation decisions related to the case vignettes. This is an important finding as it suggests that gross biases (e.g., child race/ethnicity, child sex, age) in CPT professionals' decision-making process were not evident. Further, concerns about overt gross bias in substantiation decisions are not entirely warranted.

Despite several strengths, there were some limitations of the current study. For example, this study utilized written case vignettes that could not possibly include the entire range of

information that a child protection professional would have for an actual evaluation. However, this study improved upon previous case vignette studies by including visual depictions of inflicted injuries. It is possible that CPT professionals responded to case vignettes in a socially desirable manner, which may have decreased the likelihood of discovering systemic bias. Given the high agreement among CPT professionals in decision-making, the variability in case disposition decisions may have been too limited to detect all of the effects of child protection characteristics and case-specific factors on decision making. This study was also limited to specific types of physical abuse allegations and findings may not generalize to the evaluation of other types of physical abuse, neglect, sexual abuse, and/or multiple maltreatment allegations. Clearly, the small sample of child protection professionals from minority backgrounds and the findings that race impacted decision making limits the generalization of these potentially important findings. In addition, fewer than expected medical professionals (i.e., physicians, nurse practitioners) participated in this study, which may limit the representativeness of the findings.

5. Conclusions

In conclusion, the results of the current study provide support for the notion that any inflicted injury that results in a mark is perceived as physical abuse by CPT professionals. In addition, it appears that child protection professionals consider the number of inflicted injuries, the implement used, and the location of the injury in their decision-making. The results also clearly demonstrate that child protection professionals' perception of the severity of inflicted injuries is a major indicator of the decision to classify inflicted injuries as physical abuse. In addition, CPT professionals' substantiation decisions do not appear to be influenced by overt biases when presented with case-specific factors (e.g., race, ethnicity).

However, CPT professional characteristics including race, educational level, and beliefs about the acceptability of corporal discipline impacted substantiation decisions in particular instances, suggesting that some substantiation bias exists in child protection evaluations. Substantiation bias may result in several unnecessary adverse effects on families' lives and it is important that CPT professionals are able to conduct as objective of an evaluation as possible. Given that it is unlikely that child protection professionals are cognizant of how these constructs may impact their decision-making and that substantiation bias is only present in particular instances, future research in this area is warranted. For example, future research should explore specific factors such as strength of ethnic identity and beliefs about the over-representation of minority children within child welfare as possible mediators of the relationship between child protection professional race and substantiation decisions. It will also be important to attempt to replicate the findings of this study with a more diverse sample of child protection professionals to determine if professional race does in fact, reliably impact substantiation decisions.

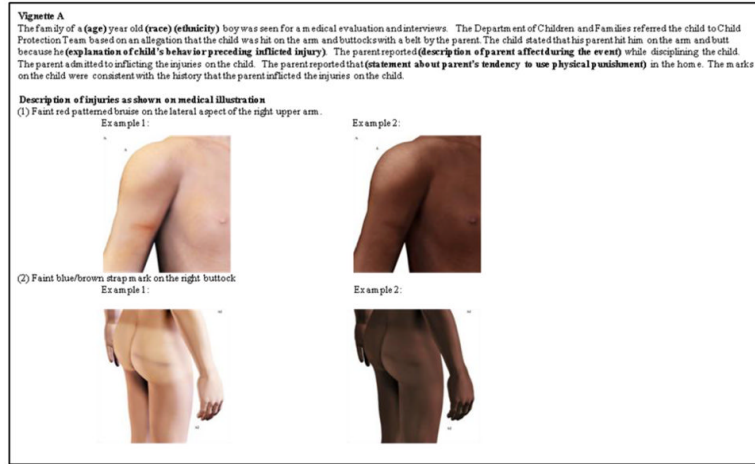
In applying these findings to better practice guidelines, additional training to increase the awareness of CPT professionals about potential sources of bias in physical abuse allegation evaluations is clearly needed. It is unlikely that CPT professionals are aware that their own race, education, and beliefs about corporal discipline may impact their substantiation decisions in particular instances. The development and evaluation of child protection training protocols designed to improve child protection professionals' knowledge of how these constructs may impact their decision making process, and how to guard against such biases may benefit families involved with CPT.

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Appendix

Case Vignette Examples



1. .
Note. For each vignette, the bold variables were randomized and inserted in the respective places. Age was randomized between 6-12 years old. Race was either White or Black. Ethnicity was either non-Hispanic or Hispanic. Explanation of child's behavior preceding inflicted injury was either a normal developmental behavior or aggressive/destructive behavior. Description of parent affect during the event was either calm or angry. Statement about parent's tendency to use corporal discipline was either regular or isolated. The visual depiction of the child's injury matched the child's randomized race.



2. .



3. .

4.

Vignette D
 The family of a (age) year old (race) (ethnicity) boy was seen for a medical evaluation and interviews. The Department of Children and Families referred the child to Child Protection Team based on an allegation that the parent hit the child on the leg with a belt. The child stated that his parent hit him on the leg because he (explanation of child's behavior preceding inflicted injury). The parent reported (description of parent affect during the event) while disciplining the child. The parent admitted to inflicting the injuries on the child. The parent reported that (statement about parent's tendency to use physical punishment) in the home. The marks on the child were consistent with the history that the parent inflicted the injuries on the child.

Description of injuries as shown on medical illustration
 Four red strap marks on the antero-lateral aspect of the left thigh.

Example 1:  Example 2: 

5.

Vignette E
 The family of a (age) year old (race) (ethnicity) boy was seen for a medical evaluation and interviews. The Department of Children and Families referred the child to Child Protection Team based on an allegation that the parent spanked the child on the buttocks with a belt. The child stated that his parent hit him on the buttocks because he (explanation of child's behavior preceding inflicted injury). The parent reported (description of parent affect during the event) while disciplining the child. The parent admitted to inflicting the injuries on the child. The parent reported that (statement about parent's tendency to use physical punishment) in the home. The marks on the child were consistent with the history that the parent inflicted the injuries on the child.

Description of injuries as shown on medical illustration
 Two palm-heel bruises on the left buttock.

Example 1:  Example 2: 

6.

Vignette F
 The family of a (age) year old (race) (ethnicity) boy was seen for a medical evaluation and interviews. The Department of Children and Families referred the child to Child Protection Team based on an allegation that the parent spanked the child on the buttocks with an open hand. The child stated that his parent hit him on the buttocks because he (explanation of child's behavior preceding inflicted injury). The parent reported (description of parent affect during the event) while disciplining the child. The parent admitted to inflicting the injuries on the child. The parent reported that (statement about parent's tendency to use physical punishment) in the home. The marks on the child were consistent with the history that the parent inflicted the injuries on the child.



Description of injuries as shown on medical illustration
 One large red-purple bruise with yellowish hue on the left buttock and one large red purple bruise on the right buttocks.

Example 1:  Example 2: 

7.

Vignette G
 The family of a (age) year old (race) (ethnicity) boy was seen for a medical evaluation and interviews. The Department of Children and Families referred the child to Child Protection Team based on an allegation that the parent spanked the child on the buttocks with an open hand. The child stated that his parent hit him on the buttocks because he (explanation of child's behavior preceding inflicted injury). The parent reported (description of parent affect during the event) while disciplining the child. The parent admitted to inflicting the injuries on the child. The parent reported that (statement about parent's tendency to use physical punishment) in the home. The marks on the child were consistent with the history that the parent inflicted the injuries on the child.



Description of injuries as shown on medical illustration
 Four large red-purple bruises on the right-hand side.

Example 1:  Example 2: 

8.

Vignette H
 The family of a (age) year old (race) (ethnicity) boy was seen for a medical evaluation and interviews. The Department of Children and Families referred the child to Child Protection Team based on an allegation that the parent slapped the child on the face with an open hand. The child stated that his parent hit him on the face because he (explanation of child's behavior preceding inflicted injury). The parent reported (description of parent affect during the event) while disciplining the child. The parent admitted to inflicting the injuries on the child. The parent reported that (statement about parent's tendency to use physical punishment) in the home. The marks on the child were consistent with the history that the parent inflicted the injuries on the child.

Description of injuries as shown on medical illustration
 One small red-purple bruise with yellowish hue on the left cheek.

Example 1:  Example 2: 

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Table 1
Respondent Characteristics

Characteristic	<i>n</i>	Weighted %
Age	138	
< 35 years of age		38
35 – 45 years of age		24
46 – 55 years of age		20
> 55 years of age		18
Gender	138	
Male		17
Female		83
Race	138	
Caucasian		83
Black or African-American		5
Some other race		12
Child protection professional background	138	
Other health professional		75
Medical health professional		25
Child protection professional education level	138	
Bachelors/nursing degree		41
Advanced degree (Ph.D./MD)		59
Case exposure	137	
Exposure to 0-500 cases		37
Exposure to 500+ cases		63

Note. The total sample size for the study was $N = 138$ participants. Weighted percentages are presented to account for missing data across respondent characteristics.

Table 2
Correlations Between Case-Specific and Professional Characteristics and Case Disposition Decisions

Characteristic	Vignette A disposition (n = 137)	Vignette B disposition (n = 138)	Vignette C disposition (n = 136)	Vignette F disposition (n = 133)	Vignette G disposition (n = 136)
Case characteristics					
Child's age	-.01 (n = 137)	-.13 (n = 138)	-.10 (n = 136)	-.05 (n = 133)	.04 (n = 136)
Race	-.04 (n = 137)	-.16 (n = 138)	-.13 (n = 136)	-.04 (n = 133)	.11 (n = 136)
Ethnicity	-.06 (n = 137)	-.05 (n = 138)	.10 (n = 136)	-.04 (n = 133)	.01 (n = 136)
Child behavior	.14 (n = 137)	-.07 (n = 138)	-.02 (n = 136)	-.04 (n = 133)	.08 (n = 136)
Parent affect	.15 (n = 137)	.09 (n = 138)	.01 (n = 136)	-.03 (n = 133)	.12 (n = 136)
Family's tendency to use physical punishment	-.02 (n = 137)	.01 (n = 138)	-.05 (n = 136)	.01 (n = 133)	.03 (n = 136)
Severity of inflicted injuries	.27*** (n = 137)	.22*** (n = 138)	.38*** (n = 136)	.31*** (n = 133)	.45*** (n = 136)
Professional characteristics					
Age	.05 (n = 135)	.02 (n = 137)	.07 (n = 135)	-.06 (n = 132)	< .01 (n = 135)
Gender	.03 (n = 137)	-.04 (n = 138)	-.10 (n = 136)	-.07 (n = 133)	-.12 (n = 136)
Race	-.18* (n = 137)	-.20* (n = 138)	.02 (n = 136)	-.10 (n = 133)	-.04 (n = 136)
Professional discipline	-.06 (n = 137)	-.05 (n = 138)	-.08 (n = 136)	.02 (n = 133)	.02 (n = 136)
Education	.05 (n = 136)	.16 (n = 138)	.22** (n = 136)	.14 (n = 133)	-.03 (n = 136)
Case exposure	.02 (n = 136)	-.04 (n = 137)	-.07 (n = 135)	< .01 (n = 132)	-.10 (n = 135)
Parental status	-.04 (n = 137)	-.01 (n = 138)	.10 (n = 136)	< -.01 (n = 133)	< -.01 (n = 136)
Beliefs about acceptability of corporal discipline	-.11 (n = 133)	-.04 (n = 134)	-.26*** (n = 133)	-.19* (n = 129)	-.02 (n = 132)
Coercive discipline techniques	-.18* (n = 133)	-.10 (n = 134)	-.10 (n = 133)	-.13 (n = 129)	-.11 (n = 132)
Non-coercive discipline techniques	-.11 (n = 132)	< -.01 (n = 133)	.01 (n = 132)	-.08 (n = 129)	-.09 (n = 131)

Note. The total sample size for the study was $N = 138$ participants. Binary variables were coded as follows (Child's race: White = 0, Other race = 1); Child's ethnicity: non-Hispanic = 0, Hispanic = 1; Child's behavior preceding physical injury: Normal developmental behavior = 0, Aggressive/destructive behavior = 1); Parent affect preceding physical injury: Calm = 0; Family's tendency to use physical

discipline: Atypical = 0, Typical = 1; Professional's gender: Male = 0, Female = 1; Professional's race: White = 0, Other race = 1; Other race = 1; Professional's discipline: Medical = 0, Behavioral health/other = 1; Professional's education level: Bachelor's = 0, Master's degree or higher = 1; Professional's case exposure: 0-500 cases = 0, > 500 cases; Professional's parental status: No children = 0, Children = 1).

* $p < .05$

** $p < .01$.

Table 3
Binomial Logistic Regression Analyses for Case Disposition Decision

Variables	df	χ^2	Nagelkerke R ²	OR	95% CI	p
Vignette A	5, 131	18.89	.21			.002***
Case-specific factors						
Severity of inflicted injury for Vignette A				2.98	[1.36, 6.51]	.006***
Professional characteristics						
Race				0.24	[0.08, 0.72]	.011*
Education				1.56	[0.60, 4.08]	.366
Acceptability of corporal punishment				0.57	[0.43, 2.34]	.999
Acceptability of coercive discipline				1.96	[0.26, 1.28]	.701
Vignette B	5, 133	19.01	0.26			.002***
Case-specific factors						
Severity of inflicted injury for Vignette B				3.47	[1.29, 9.36]	.014*
Professional characteristics						
Race				0.14	[0.04, 0.55]	.005***
Education				3.58	[1.05, 12.12]	.040*
Acceptability of corporal punishment				1.33	[0.42, 4.20]	.627
Acceptability of coercive discipline				0.65	[0.23, 1.78]	.400
Vignette C	5, 132	29.49	0.30			.000***
Case-specific factors						
Severity of inflicted injury for Vignette C				4.01	[1.88, 8.56]	.000***
Professional characteristics						
Race				0.65	[0.19, 2.21]	.489
Education				1.88	[0.75, 4.70]	.180

Variables	df	χ^2	Nagelkerke R ²	OR	95% CI	p
Acceptability of corporal punishment				0.37	[0.15, 0.90]	.029*
Acceptability of coercive discipline				1.16	[0.55, 2.47]	.698
Vignette F	5, 128	22.70	0.29			.000***
Case-specific factors						
Severity of inflicted injury for Vignette F				4.33	[1.86, 10.10]	.001**
Professional characteristics						
Race				0.20	[0.05, 0.84]	.024*
Education				1.96	[0.64, 6.01]	.241
Acceptability of corporal punishment				0.50	[0.19, 1.33]	.167
Acceptability of coercive discipline				0.81	[0.33, 2.00]	.648
Vignette G	5, 131	26.67	.27			.000***
Case-specific factors						
Severity of inflicted injury for Vignette G				5.03	[2.41, 10.49]	.000***
Professional characteristics						
Race				0.67	[0.20, 2.26]	.522
Education				1.01	[0.40, 2.56]	.989
Acceptability of corporal punishment				1.13	[0.50, 2.61]	.762
Acceptability of coercive discipline				0.78	[0.39, 1.55]	.478

Note: OR = odds ratio; CI = confidence interval; Nagelkerke R² = effect size; Professional's race: White = 0, Other race = 1; Professional's education level: Bachelor's = 0, Master's degree or higher = 1; Corporal discipline = professionals' beliefs about the acceptability of corporal discipline; Coercive discipline = professionals' beliefs about the acceptability of coercive discipline.

* $p < 0.05$

** $p < 0.01$

*** $p < .001$.