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Predicting Filipino Mothers' and Fathers' Reported Use of Corporal Punishment From Education, Authoritarian Attitudes, and Endorsement of Corporal Punishment

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Abstract

The relations of education, authoritarian childrearing attitudes, and endorsement of corporal punishment to Filipino parents' reported use of corporal punishment were examined using two waves of data. Structured interviews using self-report questionnaires were conducted with 117 mothers and 98 fathers from 120 families when their children were 8 years old, and when their children were 9 years old. Path analyses showed that, among mothers, higher education predicted lower authoritarian attitudes, which in turn predicted lower reports of corporal punishment use. Among fathers, higher education predicted lower endorsement of corporal punishment, which in turn predicted lower reports of its use. Results suggest that education has an indirect relation to use of corporal punishment through parenting cognitions, and highlight distinctions in Filipino mothers' and fathers' parenting roles.

Keywords

Filipino parenting; corporal punishment; parent cognitions; childrearing attitudes; education

The predictors and consequences of parents' use of corporal punishment have been studied extensively with North American families. Among the factors that have been related to parents' use of corporal punishment are sociodemographic variables, such as education, age, occupation, and income (Day, Peterson, & McCracken, 1998; Giles-Sims, Straus, & Sugarman, 1995); and cognitive factors, such as attitudes about children, attributions for child behavior, and beliefs about the use of corporal punishment (Holden, Miller, & Harris, 1999; Pinderhughes, Zelli, Dodge, Bates, & Pettit, 2000). Whereas several studies have generated interesting findings regarding the independent influence of sociodemographic and cognitive determinants of corporal punishment use, only a few have addressed how these factors interact or combine to shape parenting behavior (Kotchick & Forehand, 2002). As most of these studies involved Western samples, there is also the question of whether the findings are applicable to other ethnic and cultural groups.

In the Philippines, corporal punishment is widely used as a discipline strategy. In a recent study, 74% of Filipino parents reported that corporal punishment (e.g., spanking with a bare hand, shaking the child, hitting with an object) has been used in their household in the past month to deal with child misbehavior (Lansford et al., 2010). Discipline is viewed by both parents and children as a manifestation of parents' love and concern, given the culturally recognized responsibility and authority of adults in molding and shaping their children's

characteristics and personalities (Ramiro, Madrid, Lozada, & Perez, 2005). However, inequality of power in parent-child relationships in the context of harsh discipline may lead to potentially abusive situations (De la Cruz, Protacio-Marcelino, Balanon, Yacat, & Francisco, 2001). Moreover, a body of research suggests that corporal punishment leads to a range of undesirable outcomes such as negative parent-child relationships; aggression and other antisocial behaviors; and poorer psychological adjustment in children (Berlin et al., 2009; Gershoff, 2002; Mulvaney & Mebert, 2007). In view of the potential negative outcomes of corporal punishment, it is important to understand the factors that lead to its use, which have yet to be investigated among Filipino parents. In this study, we examine how sociodemographic and cognitive factors are associated with reported use of corporal punishment among Filipino mothers and fathers. We focus on the roles of education, authoritarian attitudes, and endorsement of corporal punishment as predictors of parental reports of corporal punishment use.

Relations Among Parents' Education, Childrearing Attitudes, Endorsement of Corporal Punishment, and Use of Corporal Punishment

Models of parenting suggest that sociocultural settings shape parents' cognitions about childrearing, and that these, in turn, organize and guide parents' style of childrearing (Kohn, 1963; LeVine, 1974; Super & Harkness, 1997). In their integrative framework, Super and Harkness (1997, 2002) argued that the childrearing experience is a coordinated system of settings, cognitions, and behaviors rather than a result of disconnected influences. Sociocultural environments define a child's "developmental niche" by influencing the psychology of the caregiver, as manifested in parental ethnotheories. These parental ethnotheories include attitudes and beliefs about children and childrearing and have a strong motivational role in directing parental practices (Harkness & Super, 2006; Harkness et al., 2010). Drawing from this framework, this study focuses on education as a key indicator of the sociocultural environment that influences childrearing strategies via its role in shaping parenting cognitions. As presented in Figure 1, we proposed that parents' completed education is related to parents' use of corporal punishment through its associations with authoritarian attitudes and endorsement of corporal punishment.

Education and authoritarian attitudes

Parental (particularly maternal) educational attainment is arguably the most robust sociodemographic predictor of parental behavior and child outcomes (Bornstein, Hahn, Suwalsky, & Haynes, 2003). Education has been consistently related to different aspects of parenting such as cognitive and verbal interactions (Bornstein et al., 2003); supportiveness, nurturance, and responsiveness (Lugo-Gil & Tamis-LeMonda, 2008); and provision of a quality home environment (Benasich & Brooks-Gunn, 1996). With regard to discipline, higher education has been linked to more effective and child-centered discipline practices (Bluestone & Tamis-LeMonda, 1999; Simons, Whitbeck, Conger, & Melby, 1990), and negatively related to corporal punishment use (Day et al., 1998; Dodge, Pettit, & Bates, 1994; Giles-Sims et al., 1995). Such effects have been attributed to the more effective modes of interaction, enhanced cognitive resources, and higher competence and self-efficacy that are brought about by experiences in formal education, which are then transferred to the childrearing context (Bornstein et al., 2003; Duncan & Magnuson, 2003).

More pertinent to the developmental niche framework, education may predict the type of setting in which parents function, and this may explain its key role in influencing childrearing cognitions and practices. For example, parents with lower education are expected to function in highly structured environments where obedience and respect for authority are necessary traits for success, whereas highly educated parents function in

contexts where self-direction is valued (Kelley, Power, & Wimbush, 1992). Education may therefore be seen as an indicator of a social environment that shapes parents' degree of modernity in childrearing attitudes. Schaefer and Edgerton (1985) described parents with authoritarian attitudes as those who possess traditional beliefs about parenting and educating children. Such parents assert that children must conform to their parents' wishes, and should respect and obey authority at all times. On the other hand, parents with progressive attitudes are described as those who encourage self-direction, initiative, curiosity, and imagination in children.

Whether variability in educational levels influences authoritarian attitudes is especially interesting to examine in the Philippine context, where values of parental authority and child obedience are highly revered (Alampay & Jocson, 2011; De la Cruz et al., 2001). Parents make decisions for children, and children are expected to respect and obey parents because of the cultural notion that parents know best and would never wish harm on their children. Studies on parents with similar cultural values have found support for the significant influence of education despite this prevailing parental attitude. For example, education has been negatively associated with endorsement of authoritarian beliefs and strategies in Mexican mothers (Frias-Armenta & McCloskey, 1998) and in Mainland Chinese mothers (Chen et al., 2000). Such results are related to the tendency of education to increase information about alternative strategies in childrearing and to promote appreciation of inductive and democratic parenting techniques and attitudes (Bornstein et al., 2003; Chen et al., 2000). In view of the foregoing, we predicted that education is indirectly related to Filipino parents' use of corporal punishment via its negative association with authoritarian attitudes (Arrow A, Figure 1).

Authoritarian attitudes and corporal punishment

Childrearing attitudes and beliefs are part of parental ethnotheories that guide parenting practices (Super & Harkness, 1997, 2002). Whereas researchers in the past have struggled to obtain a robust and significant attitude-behavior link, a growing body of literature suggests that parents' attitudes and beliefs do relate to their behavior, especially if the type of parenting cognitions are relevant to the particular context of the parent-child relationship (Murphey, 1992). We expected that authoritarian attitudes predict the use of corporal punishment (Arrow B, Figure 1). In general, parents' childrearing strategies are expected to be consistent with attitudes, goals, and values that they endorse. Authoritarian attitudes may thus predict use of power-assertive and restrictive strategies such as corporal punishment, because this is a strategy that elicits behaviors that are consistent with respect and obedience to authority (Luster, Rhoades, & Haas, 1989). Engaging in strategies consistent with attitudes also increases the likelihood of instilling that attitude in the child; hence, it also has an adaptive function especially if the parent expects the child to grow up in a similar environment where that attitude is highly valued (Kelley et al., 1992). Consistent with these arguments, studies have found that having authoritarian attitudes is associated with use of physical discipline, psychological control, or other prohibitory strategies in American and Chinese samples (Chen et al., 2000; Shears & Robinson, 2005).

Authoritarian attitudes, endorsement of corporal punishment, and use of corporal punishment

We proposed that parents' authoritarian attitudes are related to their use of corporal punishment via their endorsement of corporal punishment. Goodnow and Collins (1990) suggested that domain-specific beliefs, such as endorsement of discipline strategies, may derive from general parenting cognitions, such as childrearing attitudes. As found by Luster et al. (1989), high regard for self-direction was related to approval of supportive discipline strategies, whereas high regard for conformity was related to strategies emphasizing

restraint. They identified general attitudes as indicators of traits or outcomes parents strive to instill in their children, and specific discipline beliefs as their ideas on how to promote these valued traits. Thus, we expected that higher regard for authoritarian orientations predicts higher endorsement of corporal punishment (Arrow C, Figure 1). Higher endorsement, in turn, was expected to predict increased use of corporal punishment (Arrow D). Consonant with this hypothesis, a number of studies have found that higher endorsement, higher perceptions of effectiveness, and better outcome expectancies of corporal punishment are related to increased likelihood of its use (Holden et al., 1999; McLoyd, Kaplan, Hardaway, & Wood, 2007; Pinderhughes et al., 2000).

Differences Between Mothers and Fathers

Much of the literature in Filipino childrearing identifies role delineations between mothers and fathers, with mothers as the primary caregiver who takes the more active role in the day-to-day care of their children, and fathers figuring prominently in the specific domains of discipline and education (Liwag, De la Cruz, & Macapagal, 1999). A national survey revealed that mothers spend more time with their children in daily activities compared to fathers, although fathers reportedly spend more time with their children today than in past years (McCann-Erickson Philippines, 2006). While both parents take an active role in the discipline of their children, mothers primarily address disciplinary concerns as they are more often with their children. However, when children become too difficult, it is not unusual for fathers to take the necessary disciplinary measures (Liwag et al., 1999).

The maternal childrearing role thus spans a wider range of tasks, from managing the child's daily routines, to overseeing school and health concerns, to everyday discipline. The paternal childrearing role, on the other hand, seems to be more limited. Whereas perceptions of the mother-child relationship span various themes, from indulgence, nurturance, warmth, and responsiveness, to strictness, severity and power; the father-child relationship has been more coherently described along the themes of authority, restriction, obedience, and control (Espina, 1996; Lagmay, 1983; Liwag et al., 1999).

Given the foregoing, it is conceivable that there are differences between mothers and fathers in the relations between education, authoritarian attitudes, and endorsement of corporal punishment in predicting use of corporal punishment. For example, links between parental cognitions and behaviors depend on the relevance of the type of attitudes and beliefs to the childrearing context (Murphey, 1992). Because of mothers' and fathers' varying degrees of involvement in their children's daily care and discipline, their attitudes and beliefs may have differential relevance to their respective childrearing experiences, and this may contribute to dissimilar relations between cognitions and behaviors. To examine these potential differences, we tested the hypothesized model separately for mothers and fathers.

To summarize, this study tested the hypothesis that higher educational attainment predicts less authoritarian attitudes, which in turn predict lower endorsement and less frequent use of corporal punishment. Testing the model separately for mothers and fathers enabled the study to examine differences in parenting patterns that stem from distinct maternal and paternal roles.

Method

Participants

The study drew from the Philippine data set of the Parent Behavior and Child Adjustment Across Cultures (PAC) project. PAC is a longitudinal study conducted in nine countries, which aims to understand how aspects of parent-child relationships affect children's

development. Letters inviting parents to participate were sent to 1,810 parents via their second- and third-grade children enrolled in 11 schools in Quezon City, the most populous city in metropolitan Manila. Of the 664 families that responded to the letters, 236 (36%) declined permission for contact and 430 expressed interest in participating. Research assistants contacted and set interview schedules with these parents through telephone calls until the target number of 120 families was reached. Although not sizable, the sample displayed variability in socioeconomic levels, with the child's school (whether public or private) serving as a rough indicator of socioeconomic status. Low-income families typically enroll their children in public schools because the tuition is free, whereas private schools cater to middle- and high-income families. Fifty-one percent of the final sample consisted of families with children enrolled in public schools and 49% with children enrolled in private schools.

At the first wave of data collection (W1), 120 families with 8-year-old children ($M = 8.02$, $SD = 0.34$; 51% boys) participated. Data were provided by both parents in 95 families (79.2%), by the mother only in 22 families (18%), and by the father only in 3 families (3%), such that the sample consisted of 117 mothers or mother figures (age range = 25 to 55 years, $M = 37.94$, $SD = 6.23$) and 98 fathers or father figures (age range = 26 to 59 years, $M = 40.26$, $SD = 7.33$). Twenty-three percent of the mothers and 26% of the fathers completed 10 years of education or less (translating to some elementary or high school education); 61% of the mothers and 55% of the fathers completed 11-16 years of education (indicating some college education or vocational training); and 16% of the mothers and 19% of the fathers completed more than 16 years of education (translating to some education beyond college). Ninety-six percent of the male respondents and 94% of the female respondents were biological parents; the rest were adoptive parents or relatives who served as mother and father figures to the child. Ninety-two percent of the parents were married.

At the second wave of data collection (W2), when children were 9 years old, 107 families participated, with data provided by 103 of the 117 (88%) mothers and 81 of the 98 fathers (83%). There were no systematic patterns of attrition, and no significant mean differences in the variables under study between those who provided data in W1, and those who did not in W2.

Procedure

Ten graduate students, all fluent in English and Filipino, were trained using the standard interviewer manual administered to all PAC sites. They traveled in pairs or triads to the families' homes or to a designated place to conduct simultaneous but separate interviews with mothers and fathers when their children were 8 years old (W1), and again when their children were 9 years old (W2). Parents used the language they preferred in the interview (i.e., English or Filipino), and after signing consent forms, responded to predominantly close-ended and structured questionnaires. All interviews lasted 1 to 2 hours, and each parent was given a gift card as compensation.

Measures

To ensure linguistic and conceptual equivalence across the English and Filipino versions of the instruments, the principal investigator (second author) and graduate research assistants fluent in both languages did a procedure of translation and back-translation on all the PAC measures. Discrepancies were resolved via discussions among the translators. The present analyses focused on parental reports of education, authoritarian attitudes, endorsement of corporal punishment, and use of corporal punishment.

Education (W1)—Parents were asked to indicate the total number of years of education they completed (including vocational or technical courses). When participants responded in terms of level of education completed, the interviewers guided them in determining the corresponding number of years of education (i.e., elementary school completion translates to roughly 6 years of education, high school completion takes approximately 10 years, and college completion usually takes 14 years).

Authoritarian attitudes (W1)—Parents completed the Parental Modernity Inventory (PMI; Schaefer & Edgerton, 1985), a 30-item self-report questionnaire that measures (a) authoritarian attitudes (22 items) and (b) progressive attitudes (8 items) about childrearing and education. Mothers and fathers indicated their degree of agreement to the questions (e.g., “The most important thing to teach children is absolute obedience to their parents”), using a 4-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Only the authoritarian subscale was used for analysis. Cronbach's α for this subscale was .89 for mothers and .88 for fathers.

Endorsement of corporal punishment (W1)—Parents answered the Discipline Interview (DI), which was developed for the PAC study. They were asked to think about when their child misbehaved in the last year and respond about their (a) frequency of use, (b) perceptions of normativeness, (c) endorsement or approval, and (d) perceptions of effectiveness of 18 discipline strategies. Endorsement of corporal punishment is a 6-item scale indicated by two dimensions—approval and perceptions of effectiveness—of three corporal punishment strategies, namely: spank, slap or hit; grab or shake; and throw something at child. For approval, parents indicated how much they approve of doing the three corporal punishment strategies to their child using a 4-point Likert scale ranging from 1 (*strongly disapprove*) to 4 (*strongly approve*). For perceptions of effectiveness, they indicated their agreement to the question: “Doing this would get the child to do what he or she is supposed to do right now” using a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The items pertaining to approval and effectiveness were mostly significantly correlated at $p < .01$ (r s ranging from .31 to .63 for mothers and .25 to .74 for fathers) and were averaged to create a composite score for endorsement of corporal punishment for mothers ($\alpha = .83$) and for fathers ($\alpha = .82$).

Parental reports of corporal punishment use (W2)—This is a 3-item scale indicated by Wave 2 responses of parents to the DI items on frequency of use of corporal punishment. Parents indicated how often they use corporal punishment strategies in response to their child's misbehavior, using a 5-point scale ranging from 1 (*never*) to 5 (*almost every day*). The three corporal punishment items (spank, slap or hit; grab or shake; and throw something at child) were mostly significantly correlated at $p < .001$ (r s ranging from .32 to .51 for mothers and .33 to .59 for fathers), and were averaged to create a composite score reflecting parents' use of corporal punishment ($\alpha = .66$ for mothers; $\alpha = .73$ for fathers).

Results

Descriptive and Bivariate Analyses

The means and standard deviations of the variables under investigation are presented in Table 1. There were no significant differences between the scores of mothers and fathers on education, authoritarian attitudes, endorsement of corporal punishment, and reported use of corporal punishment. On average, mothers and fathers completed approximately 14 years of education, translating to tertiary-level education in the Philippine context.

Table 2 shows zero-order correlations among the variables. Education was negatively correlated with authoritarian attitudes and with endorsement of corporal punishment among mothers and fathers. In addition, fathers' education was negatively associated with reported corporal punishment use, whereas there was no association between mothers' education and reported corporal punishment use. The absence of a correlation for mothers does not compromise the hypothesized indirect relation, however, as current perspectives on models of indirect effects do not require establishing a direct relation between the predictor and criterion variable (see Hayes, 2009; Mathieu & Taylor, 2006; Preacher & Hayes, 2004). Authoritarian attitudes were positively correlated with endorsement of corporal punishment for mothers only, but were positively correlated with reported corporal punishment use for both mothers and fathers. There was also a positive correlation between endorsement of corporal punishment and reported corporal punishment use for mothers and fathers.

Path Analyses

We first considered statistical requirements for performing path analysis. All missing data were due to attrition and were handled using full information maximum likelihood estimation (FIML), which results in unbiased parameter estimates and appropriate standard errors when data are missing at random (MAR). FIML estimates are generally superior to those obtained with listwise deletion or other ad hoc methods, even when the MAR assumption is not fully met (Schafer & Graham, 2002).

Square root transformations were applied to two variables that were significantly skewed: endorsement of corporal punishment and corporal punishment use. For endorsement of corporal punishment, transforming reduced the z value for skew from 3.17 to 1.24 for mothers and from 2.83 to 1.26 for fathers. For corporal punishment use, transforming reduced the z value for skew from 3.75 to 2.41 for mothers and from 4.88 to 3.72 for fathers. Because the measure of corporal punishment use remained significantly skewed, the models were estimated with maximum likelihood estimation and tested with the Yuan-Bentler scaled chi-square, the robust estimation method that corrects for skewed data. Analyses were done using Bentler's (2001) EQS 6.1 Path Models.

Model estimation for mothers—The independence model that tests the hypothesis that the variables are uncorrelated with one another was rejected, $\chi^2(6, N = 117) = 62.99, p < .01$. The hypothesized model was then tested, and it showed significant improvement in fit compared to the independence model, $\chi^2_{\text{diff}}(4) = 57.50, p < .01$. Other indices show that the hypothesized model fit the data adequately: Model $\chi^2(2, N = 117) = 1.88, p = .391$; NNFI = 1.007, CFI = 1.000, RMSEA = .000 (90% confidence interval .000 - .179). The final model with standardized and unstandardized coefficients and standard errors (robust estimation) is presented in Figure 2. As predicted, higher education among mothers predicted lower authoritarian attitudes, which predicted lower endorsement of corporal punishment and less frequent reports of corporal punishment use.

Model estimation for fathers—The independence model that tests the hypothesis that the variables are uncorrelated was rejected, $\chi^2(6, N = 98) = 39.80, p < .01$. When we tested the hypothesized model, it showed significant improvement in fit compared to the independence model, $\chi^2_{\text{diff}}(4) = 28.58, p < .01$, but showed poor fit indices, model $\chi^2(2, N = 98) = 10.63, p < .01$; NNFI = .359, CFI = .768, RMSEA = .193 (90% confidence interval .080 - .325). We therefore made modifications in the model on the basis of the Wald test and theoretical relevance. First, the Wald test posited that dropping the path from authoritarian attitudes to endorsement of corporal punishment would not significantly degrade model fit. This parameter was deleted and the model was reestimated; however, fit statistics remained unsatisfactory, $\chi^2(2, N = 98) = 11.62, p < .01$; NNFI = .571, CFI = .785, RMSEA = .158.

Other parameters were therefore considered to improve model fit. The Wald test suggested that the path from authoritarian attitudes to corporal punishment use could also be dropped without significantly increasing model chi-square. With this additional path deletion, we considered adding direct paths from education to endorsement and use of corporal punishment. This is in view of the possibility that education may have a more significant role than attitudes in predicting fathers' discipline beliefs and strategies. The model was reestimated with these additional and deleted parameters, and showed significant improvement in fit, $\chi^2_{\text{diff}}(1) = 9.03, p < .01$. Other indices likewise indicate good approximation of the data: Model $\chi^2(2, N = 98) = 1.05, p = .652$; NNFI = 1.078, CFI = 1.000, RMSEA = .000 (90% confidence interval .000 - .169). The final model with standardized and unstandardized coefficients and standard errors (robust estimation) is presented in Figure 3. Higher levels of education among fathers predicted lower endorsement of corporal punishment, which predicted less frequent reports of its use. In addition, fathers' education directly and negatively predicted authoritarian attitudes and their reported corporal punishment use.

Tests of Indirect Effects

To determine the significance of the indirect relations suggested in the mother and father path models, we conducted bootstrapping analyses using the methods described by Preacher and Hayes (2008). Bootstrapping is recommended over other tests of indirect effects because of its power and control of Type I error (Hayes, 2009), and suitability for nonnormal and small samples (Preacher & Hayes, 2004; Shrout & Bolger, 2002). In this procedure, the original data are resampled 5000 times and indirect effect estimates generated from these 5000 resamples are then ordered numerically, with the lowest and highest bounds of the middle 95% of the estimates defining the upper and lower limit of the 95% confidence interval. If zero is not within the 95% confidence interval, we can conclude that the indirect effect is significantly different from zero at $p < .05$.

We found that mothers' education and reported corporal punishment use were indirectly related through authoritarian attitudes, with a point estimate of $-.003$ and a 95% bias-corrected bootstrap confidence interval of $-.0107$ to $-.0002$. For fathers, results showed an indirect relation between education and reported corporal punishment use through endorsement of corporal punishment, with a point estimate of $-.004$ and a 95% bias-corrected bootstrap confidence interval of $-.0134$ to $-.0002$. In summary, we found indirect relations between education and reported corporal punishment use via authoritarian attitudes for mothers and endorsement of corporal punishment for fathers.

Tests for Invariance Across Child Gender

Parenting attitudes and behaviors not only vary between mothers and fathers, but may also differ according to the gender of the child (Deater-Deckard & Dodge, 1997; Gershoff, 2002). Post-hoc analyses were therefore performed to determine if there were differences in the mother and father models according to child gender. For each, we first tested a multi-group model where paths are constrained to be equal for sons and daughters, and compared this with a model where paths are free to vary across child gender. For mothers, the fully constrained model showed poor fit indices; $\chi^2(8, N_s = 60 \text{ boys and } 57 \text{ girls}) = 16.37, p < .05$; NNFI = .677, CFI = .871, RMSEA = .095. The fit of this fully constrained model significantly differed from that of the unconstrained model; $\chi^2_{\text{diff}}(4) = 12.96, p < .05$, indicating differences in parameter estimates between girls and boys. To identify these, we sequentially removed invariance constraints until the resulting partially constrained model showed adequate fit. The final model showed significant improvement in fit compared to the fully constrained model, $\chi^2_{\text{diff}}(2) = 12.58, p < .01$, and revealed two differences between sons and daughters. First, education is a stronger predictor of authoritarian attitudes for

mothers of boys ($B = -.68$) than for mothers of girls ($B = -.46$). Second, mothers' authoritarian attitudes predicted endorsement of corporal punishment only for boys ($B = .40$). All other path coefficients did not differ for boys and girls.

For fathers, the multi-group model with paths constrained to be equal across child gender showed adequate fit, $\chi^2(8, Ns = 54 \text{ boys and } 44 \text{ girls}) = 8.43, p = .392$; NNFI = .969, CFI = .987, RMSEA = .024. The fully constrained model did not differ significantly from the unconstrained model, $\chi^2_{\text{diff}}(4) = 1.23, p = .873$, suggesting that paths were invariant for boys and girls.

Discussion

This study found both common and unique pathways in the predictors of mothers' and fathers' reported use of corporal punishment. First, the link between education and authoritarian attitudes was supported in both models. Higher levels of education predicted lower authoritarian attitudes toward children, a finding consistent with studies in the United States (Kelley et al., 1992; Luster et al., 1989). Cross-cultural research often highlights the greater emphasis that Asian parents place on parental authority and child obedience compared to American parents (Chao & Tseng, 2002), and the extant literature on Filipino parenting is consistent with this depiction (Alampay & Jocson, 2011; De la Cruz et al., 2001). Our findings add to the evidence that even within cultures where authoritarian notions seem to dominate, variability in attitudes depends on key factors such as education (Chen et al., 2000; Frias-Armenta & McCloskey, 1998). Education is a crucial parenting resource that may increase knowledge and understanding of different aspects of parenting and child development, and can thereby be associated with parents' childrearing attitudes and techniques (Bornstein et al., 2003; Chen et al., 2000).

In general, both the mother and father models revealed the indirect link between education and parental reports of corporal punishment use. Among mothers, the indirect link was through authoritarian attitudes, whereas among fathers, it was through endorsement of corporal punishment. This supports previous findings relating education to parental attitudes and beliefs (Chen et al., 2000; Frias-Armenta & McCloskey, 1998; Pinderhughes et al., 2000), as well as studies supporting the cognition-behavior relation (Holden et al., 1999; McLoyd et al., 2007; Shears & Robinson, 2005). These results suggest that parental cognitions are crucial channels that bridge the relation between education and parenting behavior. Consistent with the developmental niche framework, we found that sociocultural, cognitive, and behavioral factors work as a coordinated system in the childrearing experience.

Differences in childrearing roles may explain why authoritarian attitudes predicted mothers' endorsement and reported use of corporal punishment, whereas for fathers, only endorsement of corporal punishment predicted reports of corporal punishment use. In the Filipino context, mothers have more frequent dealings with children, from their everyday discipline to management of schooling, health, and general behavior (Liwag et al., 1999; McCann-Erickson Philippines, 2006). Thus, broader attitudes regarding how children should be raised and educated may be more relevant, activated, and predictive of mothers' use of discipline strategies (Murphey, 1992). These childrearing cognitions that more generally encompass their multifaceted parental role (i.e., authoritarian attitudes), in turn, may then be more strongly associated with their reported discipline strategies as compared to specific beliefs about discipline (i.e., endorsement of corporal punishment). This may explain why mothers' endorsement of corporal punishment did not predict their reported use of this strategy despite the significant positive correlation between these two variables.

For fathers, the significant relation of endorsement of corporal punishment to reported use of the strategy may reflect their salient role in child discipline. Whereas mothers address everyday disciplinary matters, fathers assume a more involved role in discipline when children become too difficult (Liwag et al., 1999). More specific beliefs about discipline may then be the cognitive factors that are more frequently activated and made accessible to fathers' childrearing frameworks, making them more likely than general authoritarian attitudes to influence behavior.

Filipino fathers' childrearing roles may also explain the direct link of education to endorsement and reports of corporal punishment use in the father model. Educational experiences purportedly enhance parents' sense of competence in dealing with everyday situations, and may decrease their likelihood of relying on less efficient measures to achieve parenting goals (Bornstein et al., 2003; Duncan & Magnuson, 2003). Parents also acquire cognitive and verbal facilities from education (Bornstein et al., 2003), and these may presumably influence them in using alternative, non-physical approaches in disciplining children. In general, because discipline is the parenting domain in which fathers are more involved, the skills and resources associated with a higher level of education may directly contribute to fathers' endorsement and reported use of discipline strategies. For mothers, on the other hand, the influence of education may be more diffused to other areas of parenting, such as general childrearing cognitions.

In additional analyses, we found differences between mothers of boys and mothers of girls in the way education, attitudes, and beliefs are related. Specifically, maternal education predicted authoritarian attitudes more strongly for boys than girls, and mothers' authoritarian attitudes predicted endorsement of corporal punishment only for boys. That differences were evident for mothers but not fathers can also be attributed to mothers' more active role in their children's discipline. The results also suggest that education has a stronger role in shaping authoritarian attitudes about boys, and that general attitudes about childrearing elicit more specific cognitions about disciplining boys. These hypotheses warrant further examination, although they are not surprising in view of reports that boys receive harsher forms of discipline from parents than girls (Sanapo & Nakamura, 2011).

The aforementioned findings suggest that the relations among education, childrearing attitudes, discipline beliefs, and discipline strategies may be configured differently for mothers and fathers, and for sons and daughters, as a result of differences in parental roles and expectations. Although meaningful differences exist in the mother and father models, in general, we found that indirect relations exist between education and reported use of corporal punishment through attitudes and beliefs about discipline. These findings offer useful applications in parenting interventions. In view of the massive efforts required to promote higher educational attainment, parents' attitudes and beliefs may likewise be considered as targets. Parenting cognitions may change as parents accumulate experiences from their environment and with their own children (Okagaki & Bingham, 2005). Programs and policies aimed at discouraging the use of harsh discipline strategies should therefore continue to promote awareness and reevaluation of parents' existing attitudes and beliefs toward childrearing and discipline using contextually sensitive strategies.

The study's findings should be interpreted in the context of its limitations. First, parent self-reports were used to measure all of the variables, opening the possibility for respondent bias. For example, parents may be prone to report what they believe to be ideal parenting practices instead of their actual behaviors. This may result in overestimation of cognition-behavior correlations because ideal parenting practices are usually strongly consistent with parents' attitudes and beliefs (Okagaki & Bingham, 2005). In this study, endorsement and

use of corporal punishment may have been especially prone to underreporting, given the controversial nature of the use of this discipline strategy.

The measure of education as number of years of schooling should also be interpreted with caution. Although interviewers guided respondents in determining the number of years of education equivalent to their completed degree, this was only done when participants sought clarification. In some cases, numbers may be inflated because periods in which participants might have repeated grade levels or temporarily stopped going to school were not accounted for. Moreover, the inclusion of vocational and technical course completion in the measure may limit some of the explanations provided in the study, as cognitive, communication, literacy, and specialized skills may not be acquired equally from formal academic versus vocational settings.

Lastly, the design of the study precludes conclusions about the temporal sequence and causality of the relations observed. Although use of corporal punishment was measured at a later time than its predictors, a change model was not employed; hence, alternative explanations about the direction of prediction cannot be completely discounted. For instance, behaviors can influence beliefs, especially when beliefs are used to rationalize the behavior (Murphey, 1992). Moreover, engagement in certain discipline strategies may prospectively lead to changes in beliefs in their effectiveness and desirability (Holden, Thompson, Zambrano, & Marshall, 1997).

Overall, this study found that education has an indirect association with Filipino parents' use of corporal punishment via authoritarian attitudes for mothers and endorsement of corporal punishment for fathers. Both models support the significance of cognitive factors in bridging the relation between education and use of corporal punishment. On the other hand, the differences in the models highlight the distinct childrearing roles that mothers and fathers play, suggesting varying ways by which the maternal or paternal childrearing context influences relations among attitudes, beliefs, and behaviors.

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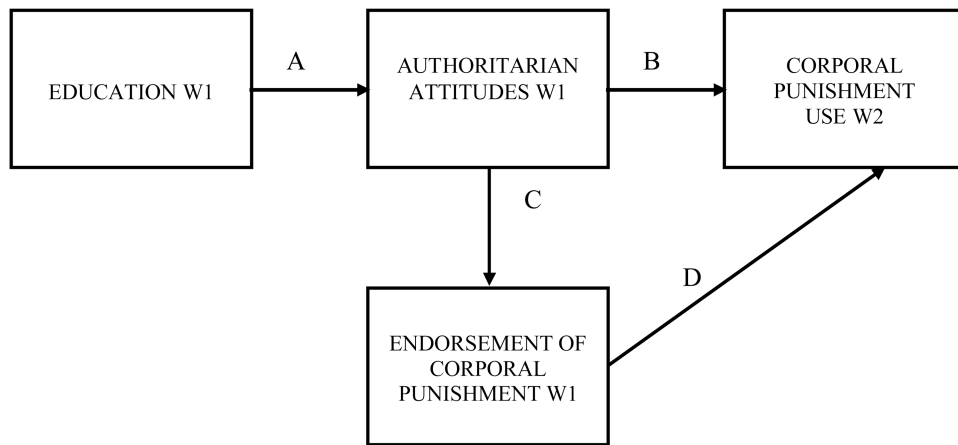


Figure 1. Hypothesized relations among parents' education, authoritarian attitudes, endorsement of corporal punishment, and corporal punishment use. *Note:* W1 = Wave 1; W2 = Wave 2.

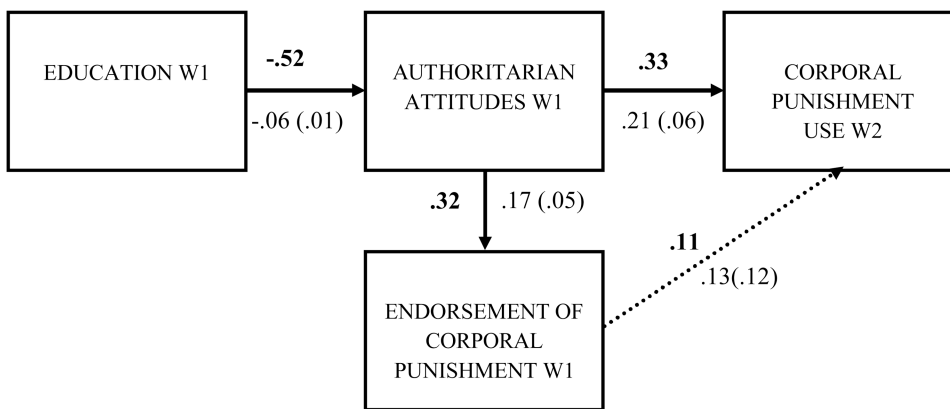


Figure 2. Final path model of predictors of mothers' reported corporal punishment use, with standardized (bold) and unstandardized coefficient estimates (values in parentheses are standard errors). Paths with solid lines are significant at $p < .05$. $\chi^2 (2, N = 117) = 1.99, ns$; NNFI = 1.007; CFI = 1.000; RMSEA = .000. *Note:* W1 = Wave 1; W2 = Wave 2.

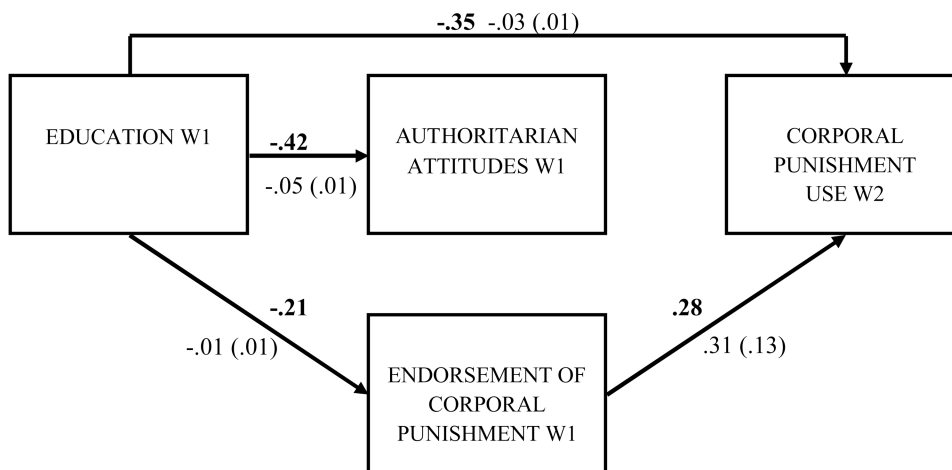


Figure 3. Final path model of predictors of fathers' reported corporal punishment use, with standardized (bold) and unstandardized coefficient estimates (values in parentheses are standard errors). All paths are significant at $p < .05$. $\chi^2 (2, N = 98) = 1.05, ns$; NNFI = 1.078; CFI = 1.000; RMSEA = .000. *Note:* W1 = Wave 1; W2 = Wave 2.

Table 1

Means and Standard Deviations of Scores

Variable	N		M		SD	
	M	F	M	F	M	F
Education (no. of years) W1	117	98	13.60	13.72	4.11	3.67
Authoritarian attitudes W1	117	98	2.93	2.99	0.45	0.41
Endorsement of corporal punishment W1	117	98	1.92	1.95	0.68	0.70
Corporal punishment use W2	103	81	1.81	1.65	0.77	0.77

Note. M = mother, F = father; W1 = Wave 1, W2 = Wave 2.

Table 2

Zero-order Correlations of Variables

Variable	1	2	3	4	5	6	7	8
Mothers								
1. Education W1	—							
2. Authoritarian Attitudes W1	-.52***	—						
3. Endorsement of Corporal Punishment W1	-.20*	.32***	—					
4. Corporal Punishment Use W2	-.09	.37***	.21*	—				
Fathers								
5. Education W1	.67***	-.53***	-.24*	-.15	—			
6. Authoritarian Attitudes W1	-.46***	.57***	.24*	.18	-.42***	—		
7. Endorsement of Corporal Punishment W1	-.17	.21*	.15	-.08	-.22*	.14	—	
8. Corporal Punishment Use W2	-.29**	.26*	.10	.07	-.42***	.27*	.39***	—

Note. Pairwise N ranges from 81 to 117; W1 = Wave 1, W2 = Wave 2.

* $p < .05$.

** $p < .01$.

*** $p < .001$.