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Harsh discipline and readiness for interpersonal aggression in Poland and the USA: the mediating role of sensitivity to provocations and frustrations

Abstract: This study examined the effect of history of harsh parenting on readiness for aggression in young adults testing the mediating effect of emotional reaction to frustration and provocation that is assumed to arise in the context of a history of physical punishment and psychological aggression. Data were collected from 402 participants including 187 Poles ($M_{age}=19.5$; $SD=1.2$) and 215 Americans ($M_{age}=19.16$, $SD=1.15$). Participants reported retrospectively on corporal punishment and psychological aggression experienced during childhood. Based on self-report instruments, sensitivity to provocation and frustration and three patterns of readiness for aggression in adulthood were assessed. Contrary to the US sample, sensitivity to provocation and frustration were mediators in the Polish sample alone. The important role of contextual factors that define harsh parenting circumstances, such as cultural context and sex of the parent, are discussed.

Key words: readiness for aggression, harsh discipline, corporal punishment, psychological aggression, sensitivity to provocation and frustration

Introduction

The research literature investigating the socialization antecedents of aggressive behavior has focused primarily on poor quality of parenting (Haapasalo & Tremblay, 1994; Kawabata, Alink, Tseng, Van IJzendoorn & Crick, 2011; Knutson, DeGarmo & Reid, 2004). Harsh discipline is among the most frequently investigated aspects of parenting when considering the development of aggressive proneness, with the frequency and severity of corporal punishment experienced in childhood receiving particular attention (Gámez-Guadix, Straus, Carrobes, Muñoz-Rivas & Almendros, 2010; Gershoff, 2002). While research has shown that physical discipline shapes child aggression and conduct problems, when and why this effect occurs remains unclear. Several moderating factors appear to regulate the impact of physical discipline on child aggression: cultural normativeness of the physical punishment (Gershoff et al., 2010; Landsford et al., 2005) and the level of maternal

warmth, support and sensitivity (Alink, et al., 2009; McKee et al., 2007; Deater-Deckard, Ivy & Petrill, 2006; McLoyd & Smith, 2002). With regard to cultural normativeness, when the prevalence of physical discipline is high and corporal punishment is perceived as acceptable in a culture, its detrimental effect on child aggression and general adjustment is more minimal than in cultures where corporal punishment is condemned. Furthermore, when a child experiences harsh discipline in the context of high maternal warmth and support, the effect of corporal punishment on aggression is less deleterious than when the harsh discipline is received in an emotionally cold environment (Fletcher, Walls, Cook, Madison & Bridges, 2008).

Another moderating variable that magnifies the association between physical discipline and child externalizing behaviors is the sex of the parent who administers the physical discipline, and sex of a child who receives the discipline (Rothbaum & Weisz, 1994; Tung, Li & Lee, 2012). For example, boys are more vulnerable to negative outcomes

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from poor parenting such as harsh or inconsistent discipline (Kerr, Lopez, Olson & Sameroff, 2004; Straus, Sugarman & Giles-Sims 1997; Tung et al., 2012). As a result, the level of externalizing problem behaviors manifested by physically punished boys is higher than that of girls who have experienced similar treatment from parents. With regard to sex of the parent, there is some evidence that maternal harsh discipline contributes more significantly to aggressive proneness in children (Chang, Dodge, Schwartz, McBride-Chang, 2003; Rothbaum & Weisz, 1994), but effects of paternal harsh discipline have also been demonstrated (Dominiak-Kochanek & Frączek, 2014).

Several other characteristics of family background also moderate the relation between corporal punishment and aggressive proneness in children. One of the most interesting factors identified as a moderator has been ethnicity (Deater-Deckard, Dodge, Bates & Pettit, 1996). Whereas a positive correlation between physical discipline and child aggression has been demonstrated for European American children, the same association is nonsignificant for African American children. Deater-Deckard and Dodge (1997) pointed out that depending on what is considered by the majority as the acceptable disciplinary methods, corporal punishment may be seen as the normative way to correct child misbehavior or as an indicator of poor parenting. The latter appraisal of corporal punishment is associated with more negative developmental outcomes for children who experience physical discipline than the former. Thus, child perception may be crucial for the magnitude of the relation between harsh discipline and child aggression, since corporal punishment can be seen as an expression of parental hostility or as a relatively normative parental reaction to misbehavior. Cross-national research conducted in countries that differ in their prevalence of corporal punishment have confirmed the Deater-Deckard and Dodge hypothesis (Deater-Deckard & Dodge, 1997). Wherever corporal punishment is deemed to be acceptable and prevalent, its contribution to child aggression is more minimal than in cultural settings where physical discipline is rarely used (Lansford et al., 2005). In summary, the way in which a child interprets parental corporal punishment, as well as, the broader social evaluation of physical discipline in a given society might be crucial for understanding any differences in the effect of corporal punishment on the development of aggressive proneness in cross-national comparative studies.

In evaluating mechanisms that might mediate the association between harsh discipline and child aggression, at least three theoretical perspectives were considered. The first was based on the assumption that cognitive processes and structures that accentuate the role of hostility may mediate the relation between physical discipline and child conduct behaviors. Two processes related to hostility were taken into account as the possible sources of this mediating effect. These were the hostile attributional bias toward a parent who administered the harsh discipline (Lansford et al., 2010) and more generally, the hostile view of social relations formed in the course of aversive disciplinary experiences (Dodge & Pettit, 2003). But it is

not only the proneness to hostile bias but also the whole social information processing pattern that appears to be affected by abusive parental behaviors (Dodge, Pettit & Bates, 1995; Weiss, Dodge, Bates & Pettit, 1992). Information processing errors start with encoding errors and the failure to attribute appropriate intention to others, then a compound repertoire of aggressive responses is easily recalled, and finally, aggression is positively evaluated. Thus, children who have been physically punished are at risk for acquiring stable and frequently activated scripts for aggressive behavior. Indeed, punitive discipline is evaluated as appropriate child rearing behavior by persons who have had those punitive disciplinary experiences in childhood, and attitudes approving harsh disciplinary methods are internalized more for individuals who received punitive discipline than for those who did not have any history of physical discipline (Bower-Russa, Knutson & Winebarger, 2001). Finally, when faced with an analog parenting task in this study, people who experienced physical discipline in childhood selected more punitive disciplinary methods than those without such backgrounds, manifesting high approval for aggressive solutions, at least at the context of child rearing.

Secondly, behavioral factors may play a role in mediating the association between harsh discipline and child aggression. For example, children who report poor parenting experience more peer provocation and a greater likelihood of becoming a victim of physical assault from others, which in turn magnifies their aggression (Mazefsky & Farrell, 2005). Even the poor parental monitoring that can lead to witnessing community violence may contribute to child aggression, since it establishes a social context that provides perfect conditions for observational learning and internalizing the conviction that aggression is widely acceptable. The developmental model of antisocial behavior by Patterson and colleagues (Patterson, DeBaryshe & Ramsey, 1990; Patterson, Dishion & Bank, 1984) suggests that delinquent behaviors are ultimately the effect of a sequence of negative life events, with basic training at home resulting from poor quality of parenting, and commitment to deviant groups in adolescence.

The third theoretical perspective employed to explain the contribution of physical discipline to child aggression is based on emotional processes, and in particular, emotional regulation deficits (Chang et al., 2003) and the high frequency of negative emotional arousal that results from adverse parenting (Gershoff, 2002). For example, research demonstrates that parent use of corporal punishment in reaction to negative emotional arousal hampers the development of emotion regulation in children, which in turn deregulates their social functioning by increasing aggressive behaviors in the school setting (Chang et al., 2003). With poor regulation strategies, each emotionally challenging situation involves a risk of anger driven aggressive responding. Furthermore, physical discipline itself may elicit anger in children, especially when the punishment is perceived as unfair or too severe compared to the misbehavior. Persistent feelings of anger associated with harsh disciplinary practices of parents may lead

to subsequent retaliatory aggression against the parents (Gershoff, 2002), and this pattern may gradually generalize to other people and social contexts.

It should be noted that the role of emotional and cognitive factors in mediating the relation between harsh discipline and child aggression may not be independent. In fact, under conditions of frustration, the relation between a punitive disciplinary history and the selection of more severe physical disciplinary strategies to address child misbehavior has been shown to be fully mediated by attitudes approving physical discipline (Russa, Rodriguez & Silvia, 2014). These data suggest that negative emotional arousal may increase access to negative child-related schema and scripts. Thus, even cognitively driven aggression might be induced by emotional processes related to personal history of physical discipline. We theorize that physical punishment leads to two key emotional reactions: frustration, since corporal punishment is often used to block a goal-directed behaviors of a child, and a feeling of humiliation due either to the way in which the discipline may be administered (e.g. in public condition), or the humbling nature of the discipline itself (e.g. name calling).

Current study

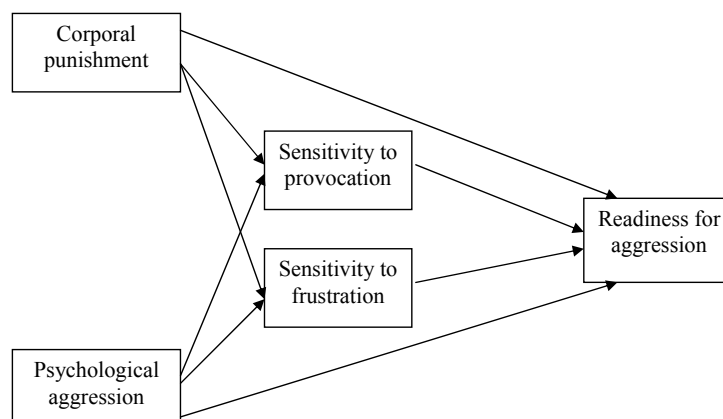
This study aimed to further explore the role of emotional processes in the relation between a harsh disciplinary history and aggressive proneness in emerging adulthood. Rather than focusing on general emotion regulation, we chose to concentrate on specific emotional reactions that we theorized arise in the context of a history of physical punishment. The theoretical model tested in this study is depicted in Fig. 1.

We assumed that specific feelings, such as frustration and humiliation, that resulted in the context of disciplinary events during childhood, would lead to an increased sensitivity to frustrations and provocations in adulthood. The notion of sensitivity to provocation and frustration has been developed by Lawrence (2006), who pointed out that individual differences in aggressive behaviors involve

not only personality or temperamental features but also the extent to which frustrating and provoking situations make an individual feel aggressive. Thus, sensitivity to provocations refers to an individual's propensity to become aggressive under condition of being goaded or provoked by others, while sensitivity to frustrations refers to proneness to feel aggressive under condition of having one's goal blocked and facing uncontrollable negative events (Lawrence, 2006). Since corporal punishment is used to block the goal-directed behavior of a child which is, according to parents, inappropriate or dangerous, we assume that the child may frequently experience frustration, boosting sensitivity to frustration-eliciting situations. Further, having experienced long-lasting discipline that induces a feeling of humiliation, an adult may have a higher sensitivity to provoking situations compared to those who never experienced childhood disciplinary humiliation. We theorize that being punished by the use of psychological aggression (e.g. by name calling, shaming) in childhood is a parallel experience to being badly treated or ignored in social relations as an adult. With this history of humiliation-related experience, similar provoking situations in adulthood will activate schemas and related feelings established in the course of childhood. Thus, this research contributes to better understanding of the constructs of sensitivity to frustration and provocation by exploring, for the first time, the socialization antecedents of them.

In conclusion, this study examines the hypothesis that sensitivity to frustration and sensitivity to provocation will mediate the relation between harsh discipline (both corporal punishment and psychological aggression) and aggressive proneness in adulthood. We operationalize aggressive proneness in terms of three specific components: emotional-impulsive readiness, habitual-cognitive readiness and personality-immanent readiness. More specifically, emotional-impulsive readiness is related to anger proneness and a lack of ability to exert emotional control (Frączek, 2008; Frączek, Konopka & Dominiak-Kochanek, 2015; Frączek, Konopka & Smulczyk, 2013). Thus, the aggressive behavior regulated by this pattern

Figure 1. Initial path model: hypothetical effect of corporal punishment and psychological aggression on readiness for interpersonal aggression mediated by sensitivity to provocation and frustration



of readiness usually manifests in a rapid and short-term outburst of negative emotional arousal. Emotional-impulsive readiness is related to neuroticism (Smulczyk, Frączek & Grzegółowska-Klarkowska, 2009), anger and hostility (Konopka, Frączek, Smulczyk, Grzegółowska-Klarkowska & Kirwil, 2009) and emotional reactivity (Smulczyk, 2008). Habitual-cognitive readiness regulates cognition-driven aggression since it is based on well-elaborated scripts, habits and beliefs about aggressive behaviors. Aggressive behavior in this case is habitual, well-learned in the course of socialization, and implemented via social roles fulfilled by the individual (Frączek, 2008; Frączek et al., 2015). Thus, one may predict that in contrast to emotional-impulsive readiness, habitual-cognitive readiness will not be related to any personal emotional characteristics. Indeed, studies show a lack of relation between habitual-cognitive readiness and emotional reactivity (Smulczyk, 2008) as well as anger (Konopka et al., 2009). However, habitual-cognitive readiness positively correlates with psychoticism (Smulczyk et al., 2009) and hostility (Konopka et al., 2009). Finally, personality-immanent readiness refers to the immanent need for aggressive behavior because of positive emotions (satisfaction) accompanying aggressive acts and /or observation of the victim's suffering (Frączek, 2008; Frączek et al., 2015). High personality-immanent readiness leads a person to actively search for an opportunity to act aggressively because aggressive behavior results in improvement of self-esteem or protection of self-concept. Personality-immanent readiness is moderately related to anger and hostility (Konopka et al., 2009), and highly correlated with psychoticism (Smulczyk et al., 2009). In conclusion, contrary to previous research which primarily focused on aggressive behavior itself, we explored the socialization antecedents of three patterns of readiness for aggression. These patterns correspond to what has previously been described in the literature as different aggressive processes, structures and motives (Caprara, Manzi, Perugini, 1992; Caprara & Pastorelli, 1993; Huesmann & Guerra, 1997; Kornadt, 1984; Werner & Nixon, 2005). More specifically, we investigate the contribution of corporal punishment and psychological aggression to three patterns of readiness for interpersonal aggression in Poland and the USA, controlling for the mediating effect of sensitivity to frustrations and provocations. Therefore, the model depicted in Fig. 1 will be tested three times for each type of readiness for aggression in two different national samples. Additionally, the measures on corporal punishment and psychological aggression will be assessed separately for mothers and fathers to control if and to what extent the effect of harsh discipline on readiness for aggression is a function of sex of the parent who used it.

Method

Participants

Data for the study in Poland (PL) and the USA were collected in a university setting. To run the cross-national comparisons, the samples were selected in a way to maximize the similarity in terms of the age and family

history. In Poland, 187 students whose mean age was $M=19.51$ ($SD=1.2$) participated in the study, including 137 females and 50 men. The majority of the participants were raised by biological parents (91.4%), 5.35% indicated that they were raised by adoptive parents and 2.69% by single parent. No ethnic differentiation was noticed in the Polish sample. The American sample consisted of 215 students (140 females and 75 men) whose mean age was $M=19.16$ ($SD=1.15$). Of these, 86.05% were raised by biological parents, 0.5% by adoptive parents, 11.63% participants indicated that they were brought up by single parent and 1.7% participants chose the option "other" which was supplemented by the following example "extended/foster family". In terms of ethnicity, the American sample consisted of 76.6% Caucasian, 11.5% African-American, 3.7% Asian, 1.4% Hispanic, 0.9% Black Hispanic and 4.6% "other". The study was approved by the University Ethics Board in both Poland and the USA.

Materials

Harsh Discipline. Participants filled out the Retrospective Inventory of Child Rearing Practices (Dominiak-Kochanek & Kulawska, 2009), which is the modified version of the Dimensions of Discipline Inventory (DDI), originally developed by Straus and Fauchier (2005–2011). The questionnaire enables measurement of a wide range of parenting practices, but for the purpose of this study we focused on psychological aggression and corporal punishment as verbal and physical indicators of harsh discipline experienced in childhood by the participants. The subscale of psychological aggression consists of four items which refer to the following disciplinary behaviors of parents indicating psychological aggression: 1) shout or yell at a child, 2) try to make a child feel ashamed or guilty, 3) hold back affection, 4) tell a child that he is lazy, sloppy or thoughtless. All participants were asked to rate retrospectively on a 5-point Likert scale (from never=1 to very often=5) how often their mother and father performed these behaviors in order to correct the participant's misbehavior when the participant was 10–13 years old. Cronbach's alpha in both samples was $\alpha=.79$. Likewise, the subscale of corporal punishment experienced in childhood from mothers and fathers consisted of the four following items: 1) shake or grab a child, 2) spank, slap, smack, or swat a child, 3) use a stick, a belt or other object, 4) kneel down or pull an ear. Using the same, 5-point scale, participants rated how often they experienced each of the four behaviors from mother and father when they were children. Cronbach's alphas estimated separately for the Polish and American samples was high and very similar ranging from $\alpha=.85$ in the American sample to $\alpha=.87$ in the Polish sample. No missing cases were found in both national samples with respect to retrospective measures,

Sensitivity to provocations and frustrations.

Sensitivity to frustration and provocation was measured with the Situational Triggers of Aggressive Responses scale (STAR; Lawrence, 2006). The STAR is a self-report instrument that consists of 22 items. Of these, 12 items measure sensitivity to provocation, and 10 items

measure sensitivity to frustration. A sample item from provocations scale is *'I feel aggressive when someone insults me'*, and a sample item from the frustrations scale is *'I feel aggressive when I hear a noise that I cannot control'*. Participants used a five-point Likert scale to rate to what extent these aggressive situations make them feel aggressive. The STAR scale has high internal consistency ranging from $\alpha=.80$ for sensitivity to provocation to $\alpha=.82$ for sensitivity to frustration, and a series of research studies have confirmed its validity (Lawrence, 2006; Lawrence & Hodgkins, 2009; Lawrence & Hutchinson, 2013). The Polish version of the STAR scale was translated into Polish, and its internal reliability and validity was tested on students and prisoners (Zajenkowska, Jankowski, Lawrence & Zajenkowski, 2013), as well, on both females and males (Zajenkowska, Kostas, Lawrence, Konopka, Rajchert, 2014). Studies confirm a high internal reliability for both sub-scales, as well as a two-factor structure reflecting the provocation and frustration scales. The internal reliability of the STAR scale was very high for both national samples, ranging from $\alpha=.85$ for the sensitivity to provocation scale to $\alpha=.86$ for the sensitivity to frustration scale in Poland and from $\alpha=.83$ for sensitivity to provocation to $\alpha=.85$ for sensitivity to frustration in USA. Overall, in both national samples 15 participants omitted the questions on the sensitivity to provocation and frustration.

Readiness for Interpersonal Aggression. Readiness for aggression was measured using the Readiness for Interpersonal Aggression Inventory (RIAI; Frączek, Konopka & Smulczyk, 2008) which consists of three subscales designed to capture three types of readiness: emotional-impulsive readiness (sample item *'I have sudden angry outbursts'*), habitual-cognitive readiness (sample item *'I think that some people don't deserve to be treated very nicely'*) and personality-immanent readiness (sample item *'I sometimes feel like hurting someone without any obvious reason'*). Each subscale is comprised of 10 items with a YES/NO forced choice response format. Cronbach's alphas calculated for the purpose of this study showed a good internal consistency and was $\alpha=.67$ for emotional-impulsive readiness, $\alpha=.80$ for habitual-cognitive readiness, and $\alpha=.66$ for personality-immanent readiness in the Polish sample. Cronbach alphas for the American sample were also acceptable (emotional-impulsive readiness $\alpha=.66$, habitual-cognitive readiness $\alpha=.71$ personality-immanent readiness $\alpha=.61$). Six participants did not reported on the emotional-impulsive readiness, nine participants omitted the questions concerning the habitual-cognitive readiness, and finally, eight participants did not reported on the personality-immanent readiness in both national samples.

Results

Descriptive Analyses

The means and standard deviations of all study variables are presented in Table 1. The results of *t*-test analyses indicated that Polish and American participants statistically differed with regard to two of three patterns of readiness for aggression. Specifically, emotional-

impulsive and habitual-cognitive readiness characterized Polish students to a greater extent than American students. No differences were found in personality-immanent readiness. With regard to measures indicating harsh discipline, substantial differences were observed between the two samples. American participants reported much higher frequency of corporal punishment from their mothers and fathers, and higher rates of psychological aggression from fathers than the Polish participants. The only marker of harsh discipline that did not differentiate American from Polish students was psychological aggression by mothers. When sensitivity to frustration and provocation were compared, the *t*-tests revealed no differences between national groups in individual propensities to feel aggressive under provoking and frustrating situations.

Table 2 and Table 3 show the correlations of the study variables separately for Poland and the USA. In the Polish sample (see Table 2), Sensitivity to frustration and provocation correlated with three patterns of readiness for aggression, although the correlation coefficients were moderate, with the highest value calculated for the association between sensitivity to provocation and emotional-impulsive readiness ($r=.34$; $p<.001$) and sensitivity to frustration and emotional-impulsive readiness ($r=.22$; $p<.01$). The associations between corporal punishment, psychological aggression and readiness for aggression were either weak (e.g., in the case of corporal punishment and psychological aggression by mothers) or insignificant (e.g., in the case of corporal punishment and psychological aggression by fathers). The only significant effect with regard to paternal indicators of harsh discipline and readiness was the relation between psychological aggression by fathers and personality-immanent readiness ($r=.19$; $p<.05$). There was also a trend for significance between corporal punishment by fathers and habitual-cognitive readiness ($r=.15$; $p<.06$). With regard to the associations of between sensitivity to provocation and between sensitivity to frustration to the markers of harsh discipline by mothers and fathers, while all of the correlation coefficients for the relation between sensitivity to provocation, sensitivity to frustration, corporal punishment and psychological aggression by fathers were significant (*r* value of .17 to .21), none of the maternal indicators of harsh discipline correlated with sensitivity to provocation and sensitivity to frustration apart from a trend for an association between sensitivity to provocation and psychological aggression by mothers ($r=.14$; $p<.06$). Finally, all the markers of harsh discipline highly correlated with each other, which suggested that mothers and fathers used a range of harsh disciplinary methods and that the measures used show a high rate of agreement with regard to detection of a harsh approach to child rearing.

As shown in Table 3, the correlations between variables in the American sample were very different from those of the Polish sample. No associations were found for sensitivity to provocation, sensitivity to frustration and any of the indicators of harsh discipline by mothers and fathers. Additionally, sensitivity to provocation and

Table 1. Means, SDs and t-test values for the study variables in Poland and the USA

Measure	<i>M(SD)</i> in PL	<i>M(SD)</i> in the US	<i>t(df)</i>
Readiness for aggression			
EIR	5.18(2.72)	3.86(2.21)	5.31(394)***
HCR	3.13(2.63)	2.54(2.12)	2.46(391)*
PIR	1.43(1.71)	1.73(1.63)	-1.78(392)
Harsh discipline			
CP by mothers	6.11(2.79)	7.19(3.36)	-3.49(400)***
PA by mothers	9.06(3.34)	9.23(3.51)	-.49(400)
CP by fathers	6.45(3.17)	7.47(4.16)	-2.71(400)**
PA by fathers	8.93(3.61)	9.88(4.32)	-2.37(400)*
STAR scale			
SP	37.73(9.45)	38.04(8.26)	-.35(385)
SF	28.17(8.73)	29.25(7.73)	-1.27(385)

Note. PL participants N=187; US participants N=215; EIR – emotional-impulsive readiness for aggression; HCR – habitual-cognitive readiness for aggression; PIR – personality-immanent readiness for aggression CPM – corporal punishment by mothers; PAM – psychological aggression by mothers; CPF – corporal punishment by fathers; PAF – psychological aggression by fathers; SP – sensitivity to provocation; SF – sensitivity to frustration.

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

sensitivity to frustration did not correlate with the patterns of readiness for aggression with the exception of a relation between sensitivity to provocation and habitual-cognitive readiness ($r=.13$; $p<.06$). However, associations between harsh discipline by mothers and by fathers and readiness for aggression were found. These associations ranged from $r=.28$ ($p<.001$) for psychological aggression by fathers

and habitual-cognitive readiness, to $r=.14$ ($p<.05$) for psychological aggression by mothers and also habitual-cognitive readiness. Finally, in the American sample, corporal punishment and psychological aggression for mothers and fathers co-occurred, highlighting a high consistency in use of harsh discipline between parents. In addition, when correlations for mothers and fathers were

Table 2. Pearson's correlations among study variables in Poland

	1	2	3	4	5	6	7	8	9
1. EIR	–								
2. HCR	.07	–							
3. PIR	.05	.53***	–						
4. CPM	.10	.12	.16*	–					
5. PAM	.15*	.09	.24**	.51***	–				
6. CPF	.04	.15†	.12	.64***	.30***	–			
7. PAF	.12	.12	.19*	.31***	.47***	.63***	–		
8. SP	.34***	.16*	.15†	.14	.14†	.17*	.19*	–	
9. SF	.22**	.17*	.19*	.14	.08	.21**	.18*	.73***	–

Note. EIR – emotional-impulsive readiness for aggression; HCR – habitual-cognitive readiness for aggression; PIR – personality-immanent readiness for aggression CPM – corporal punishment by mothers; PAM – psychological aggression by mothers; CPF – corporal punishment by fathers; PAF – psychological aggression by fathers; SP – sensitivity to provocation; SF – sensitivity to frustration.

† $p < .06$; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

Table 3. Pearson's correlations among study variables in the USA

	1	2	3	4	5	6	7	8	9
1. EIR	–								
2. HCR	.39***	–							
3. PIR	.23***	.46***	–						
4. CPM	.15*	.19**	.11	–					
5. PAM	.23***	.14*	.16*	.55***	–				
6. CPF	.06	.26***	.21**	.52***	.26***	–			
7. PAF	.19**	.28***	.26***	.36***	.45***	.73***	–		
8. SP	-.03	-.13 [†]	-.07	.02	.08	-.01	.02	–	
9. SF	.06	-.02	.04	-.08	.04	-.05	.02	.74***	–

Note. EIR – emotional-impulsive readiness for aggression; HCR – habitual-cognitive readiness for aggression; PIR – personality-immanent readiness for aggression CPM – corporal punishment by mothers; PAM – psychological aggression by mothers; CPF – corporal punishment by fathers; PAF – psychological aggression by fathers; SP – sensitivity to provocation; SF – sensitivity to frustration.

[†] $p < .06$; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

considered separately, there was a clear tendency for use of corporal punishment and psychological aggression to go hand in hand.

Structural Equation Modeling Analyses

SEM was used to test the theoretical models using AMOS 21. Path analysis was used to examine whether aggressive parenting practices (corporal punishment and psychological aggression) used by mothers and fathers separately exert direct and indirect effects, through sensitivity to provocation and frustration, on the three mechanisms of readiness for aggression among participants from Poland and USA. Thus, six models were tested to determine the early familial antecedents of the susceptibility to feel frustrated and provoked by others, and their subsequent impact on emotional-impulsive, habitual-cognitive and personality-immanent readiness for aggression. Regression imputation was used to complete the random missing data. All model analyses were estimated using the maximum likelihood method. The overall goodness of fit of models was evaluated using χ^2/df , root mean square error of approximation (RMSEA), the goodness of fit index (GFI) and the comparative fit index (CFI). Criteria for good fitting models are for a χ^2/df of about two or less (Loehlin, 1987), a RMSEA less than .05, and GFI and CFI of more than .95 (Kline, 2005). In each case first we evaluated the overall goodness of fit of the initial model. All of the nonsignificant paths were removed one by one, starting from the least significant until the model fulfilled the acceptable fit criteria.

Structural equation modeling analysis in the Polish sample

The three original models did not provide a good fit to the data (see Table 4). To maximize model fit, all

nonsignificant paths were subsequently dropped from the models. Final results indicated that psychological aggression manifested by mothers was associated with emotional-impulsive readiness for aggression ($\beta=.15$, $p < .05$), while the psychological aggression used by fathers exerted an indirect effect on emotional-impulsive readiness via the sensitivity to provocation. Higher rates of psychological aggression used by fathers in childhood were associated with both greater sensitivity to provocation in adulthood ($\beta=.19$, $p < .01$, $R^2=.04$), and higher participant-reported levels of emotional-impulsive readiness for aggression ($\beta=.36$, $p < .001$, $R^2=.17$). None of the parenting practices had a direct effect on the habitual-cognitive readiness; however, corporal punishment used by fathers was indirectly related to this type of readiness through sensitivity to frustration. The higher the level of father's corporal punishment, the higher the sensitivity to frustration ($\beta=.21$, $p < .01$, $R^2=.04$), and finally the higher the habitual-cognitive readiness ($\beta=.16$, $p < .05$, $R^2=.03$). Nonetheless, it must be mentioned that the goodness of fit statistics did not indicate good fit. GFI (.990) was strong, but only borderline acceptable values were evidenced for CFI (.863) and RMSEA (.097). Finally, with respect to personality-immanent readiness for aggression, psychological aggression used by mothers once again appeared to be directly related to readiness for aggression ($\beta=.24$, $p < .001$). An indirect effect of corporal punishment used by fathers via sensitivity to frustration also appeared. The more corporal punishment participants experienced from their fathers in childhood, the more sensitive to frustration they appeared to be in adulthood ($\beta=.21$, $p < .001$, $R^2=.04$), and finally, the higher the level of personality-immanent readiness they manifested in adulthood ($\beta=.17$, $p < .05$). The squared multiple correlations for the personality-immanent readiness for aggression was $R^2=.09$.

Table 4. Goodness-of-Fit Indices for the Structural Equation Models

Country	Readiness for aggression	Model description	λ^2	df	λ^2/df	GFI	CFI	RMSEA
Poland	EIR	initial	117.54	1	117.54***	.882	.774	.792
		final	.898	2	.449	.998	1.000	.000
	HCR	initial	117.54	1	117.54***	.882	.728	.792
		final	2.76	1	2.76	.990	.863	.097
	PIR	initial	117.54	1	117.54***	.882	.734	.792
		final	.233	2	.117	.999	1.000	.000
USA	EIR	initial	170.34	1	170.34***	.864	.688	.890
		final	6.28	6	1.05	.990	.999	.015
	HCR	initial	170.35	1	170.35***	.864	.691	.890
		final	.102	1	.102	1.000	1.000	.000
	PIR	initial	170.35	1	170.35***	.864	.688	.890
		final	.108	2	.054	1.000	1.000	.000

Note. EIR – emotional-impulsive readiness for aggression; HCR – habitual-cognitive readiness for aggression; PIR – personality-immanent readiness for aggression; GFI – goodness of fit index ; CFI – comparison fit index; RMSEA – root mean square error of approximation.

*** $p < .001$.

Structural equation modeling analysis in the American sample

As in the Polish sample, the theoretical models of readiness for aggression using sensitivity to provocation and frustration as the mediators did not provide a good fit to the American data (see Table 4). Moreover, with both kinds of readiness for aggression, only direct effects of parenting practices and sensitivity to provocation and frustrations were obtained. Psychological aggression used by fathers was positively associated with emotional-impulsive ($\beta=.31, p < .01$), habitual-cognitive ($\beta=.28, p < .001$), and personality-immanent ($\beta=.26, p < .001$) readiness for aggression. Among other parenting variables, only corporal punishment used by mothers and corporal punishment adopted by fathers was related to emotional-impulsive readiness, such that the higher the level of corporal punishment of mothers ($\beta=.20, p < .01$), and the lower the level of corporal punishment of fathers ($\beta=-.27, p < .05$), the higher the emotional-impulsive readiness for aggression. Findings also showed that sensitivity to frustration was positively related to emotional-impulsive ($\beta=.20, p < .05$) and personality-immanent readiness ($\beta=.20, p < .05$), but a higher level of sensitivity to provocation was associated with a lower level of emotional-impulsive ($\beta=-.19, p=.053$), habitual-cognitive ($\beta=-.14, p < .05$) and personality-immanent readiness ($\beta=-.23, p < .05$). The squared multiple correlations of the emotional-impulsive, habitual-cognitive and personality-immanent readiness were $R^2=.10$, $R^2=.10$ and $R^2=.09$ respectively.

Discussion

This study was designed to contribute to the understanding of potential mediators of the relation between harsh discipline and aggressive proneness, defined as readiness for interpersonal aggression. We focused on sensitivity to provocations and frustrations assuming that an individual's susceptibility to feel aggressive under provoking and frustrating conditions may have evolved in early development due to the humiliating and frustrating nature of some types of harsh discipline. Additionally, we explored whether our hypothesis concerning the mediating role of sensitivity to provocation and frustration would be country- universal, testing our hypothesis twice- in Poland, and the USA. The results on the mediating role of the sensitivity to provocation and frustration in the relation between harsh discipline and readiness for aggression turned to be entirely country-specific. The cross-national differences require to be explained, though, the fact that neither cultural normativeness of harsh discipline nor any other cultural variables were measured, the conclusions referring to national differences should be treated with caution.

Our results showed that sensitivity to provocation mediated the relation between psychological aggression by fathers and emotional-impulsive readiness, whereas sensitivity to frustration mediated the association between corporal punishment by fathers and both habitual-cognitive and personality-immanent readiness, but this

pattern manifests exclusively in Poland. In contrast, in the USA data, a direct effect of harsh discipline on readiness for aggression was observed. Both sensitivity to provocation and frustration played a role in predicting readiness for aggression in the US, but this relation was direct and appeared to be independent of the harsh discipline variables. This cross-national variation in the role of sensitivity to provocation and frustration suggests that Poland and the US may be distinct in terms of the psychological structures that evolve for individuals in the context of harsh discipline experiences. Thus, in Poland, psychological aggression and corporal punishment contributed to a higher sensitivity to provocation and frustration, which suggests that these kinds of experiences may be judged as humiliating or frustrating. However in the USA, it seems that psychological or physical discipline is simply considered to be a punishment for breaking rules, and even though it may raise feelings of anger or anxiety (Gershoff, 2002; Rodriguez, 2003), emotional reactions may not involve feelings of frustration or humiliation. It is notable that this somewhat milder evaluation of personal harsh-rearing experiences by the American participants occurs in the context of their higher frequency of harsh childhood disciplinary experiences compared to the Polish sample. This pattern is consistent with the previous demonstrations that when the prevalence of corporal punishment is high in a given society, it is perceived as the normative disciplinary method, and consequently, its detrimental contribution to child aggression is less substantial (Landsford et al., 2005).

Another potential source of some of the notable differences between Poland and the USA in this study is that since 2010, corporal punishment has been prohibited in Poland. This change was accompanied by a pervasive social campaign to educate the public regarding how humiliating and destructive physical discipline can be for children. Hence, it is possible that this campaign changed Polish participants' retrospective evaluation of the physical and psychological discipline that they received in childhood. On the other hand, the patterns in the present study demonstrate that psychological aggression and corporal punishment are associated with current levels of sensitivity to provocation and frustration in a manner consistent with the nature of these disciplinary methods. Specifically, the experience of corporal punishment was consistently related to higher sensitivity to frustration, whilst psychological aggression was associated with an increase in sensitivity to provocation among young participants who reported having these disciplinary experiences in childhood. As mentioned above, this strict association of corporal punishment and psychological aggression with sensitivity to frustration and provocation respectively corresponds well with the nature of these two forms of discipline and the parental circumstances in which they might occur. Parents often use spanking and other forms of corporal punishment when they want to block a misbehavior quickly and effectively, particularly when a child behavior is dangerous or simply unacceptable for them. When such a scenario repeatedly plays out, a child is faced with a kind of frustration training

which may raise his or her sensitivity to frustration in subsequent stages of development. Shouting at child, name calling or emotionally withdrawing, in contrast, may humiliate a child or become a kind of inferiority training, which may increase a child's sensitivity to later social circumstances or social interactions that lead to feelings of insecurity or inferiority. Being easily aroused by the provoking and frustrating situations, these individuals may then be primed for attack either due to the weakness of emotional control (as in case of emotional-impulsive readiness), the better access to aggressive scripts (as in case of habitual-cognitive readiness), or the activated need to attack someone as the source of personal satisfaction (as in case of personality-immanent readiness). Previous research indicates the pervasive impact of frustration and provocation on aggressive behavior (Berkowitz, 1989; Bettencourt & Miller, 1996), and our research adds to this knowledge by demonstrating that this association might be regulated by a more complex mechanism. Although habitual-cognitive readiness is defined as fully cognition-based readiness, it is activated somewhat more easily when sensitivity to frustration is higher, which perfectly captures the interplay of frustration and schema accessibility confirmed by the previous research (Russa et al., 2014). However, it should be noted that the variance in habitual-cognitive readiness as a function of corporal punishment mediated by sensitivity to frustration was the weakest of all the models, and in the US sample, this model explained much more of the variance and showed better goodness-of-fit statistics than the analogous model in Poland.

Our results demonstrate a balanced contribution of paternal and maternal harsh discipline to the development of readiness for aggression in children. Interestingly, in the Polish sample all paternal effects, regardless of whether it involved psychological aggression or corporal punishment, increased all three types of readiness for aggression via sensitivity to provocations or frustrations. In contrast, for mothers only direct effects were observed. Specifically, the more frequent the use of psychological aggression by the mother, the higher the emotional-impulsive and personality-immanent readiness observed among Polish participants. This suggests that the same act of punishment may be perceived differently by the child as a consequence of whether it is administered by father or mother. Two factors may contribute to the apparent difference in the perception of harsh discipline used by mothers and fathers. First, although mothers may use psychological aggression, they may also tend to provide substantial emotional support to moderate the negative effect of this harsh discipline (McLoyd & Smith, 2002). In contrast to mothers, fathers rarely serve as child's primary caregivers, and their verbal and physical disciplinary approaches tend to be harsher than a mother's (McKee et al., 2007). Given these differences, when paternal and maternal acts of punishment occur, harsh discipline by fathers might be more likely to lead to heightened sensitivity to frustration and provocation than a harsh discipline by mothers.

In contrast to the Polish sample, in the American sample there was a direct effect of mother and father use

of psychological aggression and corporal punishment. Psychological aggression by fathers had a universal positive impact on all three patterns of readiness for aggression. A more complex effect of corporal punishment by mothers and fathers was apparent, with corporal punishment by mothers contributing positively to emotional-impulsive readiness, and corporal punishment by fathers having a negative effect on emotional-impulsive readiness. In understanding the contrasting impact of corporal punishment used by mothers and fathers, it should be noted that this is emotion-based readiness for aggression which is related to the anger proneness and lack of ability to emotional control, but it is not aggressive behavior itself. Thus, it is possible that females, who are more prone to emotion-driven behaviors than males (Chentsova-Dutton & Tsai, 2007), administer corporal punishment under conditions of emotional arousal, when they have failed to correct child misbehavior using milder disciplinary methods. As the result, the impulsive corporal punishment used by mothers may impair the development of emotional control in children, leading to higher emotional-impulsive readiness. Indeed, previous findings confirm that the use of impulsive corporal punishment strongly contributes to child impulsiveness (Straus & Mouradian, 1998). In contrast, because males tend to be more instrumental than oriented towards warm interpersonal relations (Wojciszke & Szlendak, 2010), they might be more likely to administer corporal punishment in an emotionally detached way, which may reduce emotion-based readiness for aggression. On the other hand, the father's detached use of corporal punishment may lead to observational learning of instrumental aggression, which is consistent with the indirect positive effect of corporal punishment by fathers on habitual-cognitive readiness in our Polish sample.

Finally, it is noteworthy that regardless of country, the deleterious effect of psychological aggression by mothers and fathers appeared systematically across three patterns of readiness for aggression with the exception of habitual-cognitive readiness in Poland. In contrast, the effect of corporal punishment was noted only with regard to the level of habitual-cognitive readiness in the Polish sample and emotional-impulsive readiness in the American sample. This pervasive impact of psychological aggression highlights the fact that psychological and verbal aggression is as harmful for child outcomes as corporal punishment, a conclusion which is consistent with previous research findings (Solomon & Serres, 1999). In fact, psychological aggression and/or verbal aggression may be used more frequently than corporal punishment, as it may precede an act of physical discipline due to being evaluated by the parents as a "milder" disciplinary technique that may preclude the need for corporal punishment. However, our findings demonstrate that, in contrast to such parental beliefs, psychological aggression is the primary factor contributing to three patterns of readiness for aggression, and as such, it may be even more harmful than corporal punishment.

Limitations of the study

Our study was not free of limitations. We acknowledge that the results might be infected by response bias due to the retrospective design of the study and the use of a unique source of information. However, the alternative to retrospective study is the longitudinal research which in case of this study would cover three developmental stages, starting from early childhood to emerging adulthood. In light of such long-time distance, using the retrospective design of a study seems to be justified, particularly when the aim was to evaluate the long-term effects of early socialization experience. On the other hand, the long-time distance might negatively affect the memory of events of early childhood which is the major weakness of retrospective studies. However, previous research clearly showed that the bias of retrospective reports is not sufficiently great to invalidate reports of childhood adversities (Hardt & Rutter, 2004) and the general tendency to underestimate the adverse experience from childhood has been discovered rather than overrate it (Brown, Craig, Harris, Handley & Harvey, 2007). Finally, we recommend in future studies to collect the data on harsh discipline simultaneously from parents and adult children because two source of information might decrease the risk of shared variance bias.

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