Patterns of caregiver aggressive and nonaggressive discipline toward young children in low- and middle-income countries: A latent class approach

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A B S T R A C T

Background: Caregivers use a variety of disciplinary methods to respond to undesired child behavior. Many caregivers use nonaggressive forms of discipline, such as verbal reasoning and redirection. Some caregivers use aggressive forms of discipline, such as spanking and yelling. However, most caregivers use a combination of aggressive and nonaggressive discipline. To date, a disproportionately small number of caregiver discipline studies are conducted in low- and middle-income countries (LMICs), and few studies in low-resource contexts examine aggressive and nonaggressive behaviors simultaneously.
Objective: This study aims to elucidate caregiver patterns of 11 disciplinary behaviors used in LMICs, and examine how these patterns relate to child outcomes and household characteristics.
Participants and setting: Data came from the fourth and fifth rounds of UNICEF Multiple Indicator Cluster Surveys (MICS) distributed between 2009 and 2017 ($N = 218,824$ respondents across 63 countries). Focal children were 3–4 years old.
Methods: Patterns of disciplinary behaviors were estimated using a multilevel latent class analysis (LCA). Multinomial regression analyses examined associations of disciplinary patterns with caregiver-reported child outcomes and household characteristics.
Results: The LCA suggested caregiver discipline fell into three overall patterns: *high behavioral control, moderate behavior control*, and *lower behavioral control*. The *lower behavioral control class* was associated with the most advantageous child outcomes and household socio-demographic characteristics, whereas the *high behavioral control class* was associated with the most disadvantageous child outcomes and household characteristics.
Conclusions: Efforts should be employed to reduce aggressive behaviors and promote positive parenting among caregivers in LMICs.

1. Introduction

Over the past several decades, a great deal of research attention has been devoted to caregivers' use of discipline, which refers to

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parenting behaviors used to correct undesired child behavior (Lansford, 2019). Such disciplinary behaviors tend to fall under three broad categories: physical aggression, psychological aggression, and nonaggressive discipline. Physical aggression involves caregivers employing physical force to suspend or redirect child misbehavior, such as hitting, spanking, pushing, shaking, and pinching (Donnelly and Straus, 2005). Psychological aggression refers to verbal behaviors that caregivers use to gain children's attention or punish misbehavior, such as yelling, shouting, or calling the child names (Runyan et al., 2009). Psychological and physical aggression involves power-coercion on the part of the caregiver (Dodge et al., 2006; Lansford, 2019). Nonaggressive discipline generally refers to non-physical and non-violent behaviors such as privilege restriction and positive or negative reprimand of the child (Kazdin, 1997). Nonaggressive disciplinary behaviors such as verbal reasoning (i.e., explaining why the misbehavior was wrong) and praising the child for engaging in desirable behavior vary significantly across countries and cultures (Knerr et al., 2013; Lansford & Deater-Deckard, 2012) and are associated with lower levels of child misbehavior (Lachman et al., 2017; Ward, Grogan-Kaylor, Ma, et al., 2021). Child outcomes related to the use of other nonaggressive disciplinary behaviors, such as taking away privileges, are unclear. While taking away privileges may be intended to be nonaggressive, research suggests that this type of discipline can potentially be coupled with power-assertion behaviors on the part of the parent and linked to negative child outcomes (Gu & Kwok, 2020).

As Henrich et al. (2010) have noted, most research on parenting and child development focuses on higher income countries. To address this gap, the current study uses self-reported data from 218,824 caregivers who participated in the United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys (MICS) (Khan & Hancioglu, 2019) to examine the associations of caregiver disciplinary profiles to child socioemotional outcomes—including aggression, distraction, and getting along with others—as well as to caregiver factors shown in prior research to be associated with both caregiver discipline and child outcomes, such as attitudes toward physical punishment (Akmatov, 2011; Lokot et al., 2020), household wealth (Akmatov, 2011; Frongillo et al., 2017), and caregiver education level (Ryan et al., 2016). While several prior studies using MICS data have focused on one caregiver disciplinary behavior (e. g., spanking; Pace et al., 2019) or a subset of such behaviors (e.g., physical aggression and abuse; Akmatov, 2011), most caregivers utilize a variety of disciplinary methods that include physical aggression, psychological aggression, *and* nonaggressive discipline (Beatriz & Salhi, 2019; Lansford, Wager, Bates, Dodge, and Pettit, 2012). Thus, the current study uses a person-centered approach to examine a range of disciplinary behaviors, using latent class analysis (LCA) to identify profiles of caregivers' aggressive and nonaggressive disciplinary behaviors in low- and middle-income countries (LMICs).

Latent class analysis (LCA) is a person-centered approach that assumes that, in a large and diverse sample, there is likely to be meaningful heterogeneity in patterns of behavior that can be described through identifying distinct underlying latent groups, which we call disciplinary behavior profiles. In the current study, we used LCA to identify those disciplinary behavior profiles (von Eye & Bogat, 2006). An LCA examines which behaviors are most likely to be associated with each other in a probabilistic manner, essentially attempting to find behaviors at the person-level that can be used to find group-level patterns. Individuals are assigned to groupings based on the similarity of their parenting behaviors to others in the same class, and simultaneously based on their degree of difference from individuals in other classes (Muthén, 2002). An LCA uses items that are conceptually related to each other but capture distinct, unique behaviors. In an LCA, different numbers of latent classes can be assessed against each other to ascertain a set of latent classes that provides a good statistical explanation of the data (Lanza & Cooper, 2016). An LCA provides various fit indices to help ascertain the optimal number of latent classes, but often such fit indices provide conflicting information and determination of the number of underlying latent classes must be based upon both theory and interpretation of various indices (Nylund-Gibson & Choi, 2018). In this study, we follow a similar approach to prior U.S.-based LCA of the Parent-Child Conflict Tactics Scales (Kim et al., 2014; Lee et al., 2011). Thus, a person-centered analysis may provide important insight into the variability and patterns of caregiver disciplinary behaviors in a manner that is distinct from studies that focus on identifying general trends. Because data in our sample were collected from different countries, we employed a multilevel LCA to account for the clustering of study respondents inside countries.

1.1. Aggressive and nonaggressive discipline

Violence against children is common across the globe (Akmatov, 2011; Beatriz & Salhi, 2019; Cuartas et al., 2019; Hillis et al., 2016; United Nations Children's Fund, 2014). In one study of over 220,000 respondents from 60 LMICs, in the past month, approximately 43% of children who were on average 47 months old (range = 31–59 months) were spanked by their caregivers, 20% were hit with an object, and 17% were hit or slapped (Ward, Grogan-Kaylor, Ma, et al., 2021). In another study of over 120,000 children between 2 and 14 years in 28 LMICs, aggressive forms of discipline were common, with approximately 83% of children experiencing psychological abuse and 43% experiencing severe physical abuse (Akmatov, 2011). U.S. and international research suggests the use of physical punishment is harmful to children's socioemotional development in upper-income countries (Gershoff & Grogan-Kaylor, 2016; Lansford et al., 2014; Lansford, Wager, Bates, Pettit, and Dodge, 2012). Recent studies examining physical punishment against children in LMICs corroborate the finding that physical punishment is linked to poorer child outcomes. Cross-national studies using data on 215,885 children in 62 LMICs in MICS have shown that caregivers use of physical punishment is associated with 3- and 4-year-olds' lower socioemotional development, such as more aggression and distraction (Grogan-Kaylor et al., 2021; Pace et al., 2019). Another MICS study of 131,164 children (36–59 months) in 49 LMICs found that children who were physically punished were less likely to meet their developmental milestones than their counterparts who were not physically punished (Cuartas, 2021). Importantly, regardless of whether physical punishment was more or less normative in the country, physical discipline was still associated with poorer outcomes for children (Gershoff et al., 2010; Grogan-Kaylor et al., 2021; Lansford et al., 2005).

These prior studies have focused primarily on the use of physical punishment. However, psychological aggression is even more commonly used by caregivers across the globe (Akmatov, 2011). In one study of caregivers of children in 28 LMICs, 66% of caregivers reported psychological aggression in the household within the past month (Lansford & Deater-Deckard, 2012). In another study of

caregivers of children in over 60 LMICs, after controlling for physical forms of aggression, psychological aggression (specifically, calling the child names) was the most robust predictor of child aggression and distraction (Ward, Grogan-Kaylor, Ma, et al., 2021). Further, a recent systematic review and meta-analysis suggests that psychological aggression can be just as harmful to children as physical aggression (Norman et al., 2012). This research underscores the importance of considering caregiver disciplinary behaviors in conjunction, rather than in isolation. Failing to consider forms of psychological and physical aggression jointly may underestimate the negative toll such behaviors have on child wellbeing.

Less is known about the associations between nonaggressive disciplinary behaviors and child outcomes. Developmental theories tend to underscore that parental warmth promotes child prosocial behavior and is usually negatively associated with child behavior problems (Altschul et al., 2016; Lansford et al., 2017, 2018; Lee et al., 2013). The outcomes associated with specific nonaggressive caregiver disciplinary behaviors, such as taking away privileges, verbal reasoning, and redirecting the child, are less clear. One study of 3- and 4-year olds in 62 LMICs found that only verbal reasoning (explaining why the behavior was wrong) was associated with positive child socioemotional development (Ward, Grogan-Kaylor, Ma, et al., 2021). However, in another study using the same sample in 62 LMICs, taking away privileges was associated with lower levels of child prosocial behavior and higher levels of child aggression and child distraction (Grogan-Kaylor et al., 2021). Grogan-Kaylor et al. (2021) suggests that caregivers' use of taking away privileges may be used as a power assertion strategy, thus contributing to more negative outcomes for children.

1.2. The Parent-to-Child Conflict Tactics Scales

The Parent-to-Child Conflict Tactics Scales (CTSPC; Straus et al., 1998) were created to capture a variety of behaviors that parents may use to discipline their children, including nonaggressive discipline, psychological aggression, and physical aggression. The CTSPC items are conceptually related (i.e., forms of caregiver discipline) but capture unique and distinct behaviors. For example, within the CTSPC physical and psychological aggressive discipline subscales, the items vary with regard to their severity: "Slapped or spanked child" is a common and less severe form of assault compared to "beat him/her up," which is a much less common and more severe form of assault, with greater likelihood of physical injury to the child (Straus, 2004; Straus et al., 1998). Indeed, in formulating scoring procedures for the CTSPC items, Straus suggested using the items to create prevalence and frequency estimates (Straus, 2004). Straus et al. (1998) noted it may not be appropriate to evaluate internal consistency for items such as beating the child that are severe in nature and likely to be "rare events" (Straus et al., 1998, pg. 256) and thus skewed toward 0 frequency. To this end, the CTSPC severe physical assault scale and psychological aggression subscales often have low levels of internal consistency (Straus et al., 1998). This concern is especially applicable to the MICS adaptations of the CTSPC items, because the items used in MICS were adapted in two notable ways. First, the MICS items use a dichotomous "yes" or "no" response scale. Second, the time frame was modified to ask about the behavior in the last month instead of the last year. An LCA model is well positioned to utilize such data, because severe aggression, though infrequently endorsed by the majority of parents, may help to distinguish subclasses of parents who are particularly aggressive and potentially abusive. In addition, prior publications that have used the MICS CTSPC items have treated the measures as a dichotomous or ordinal variable (Akmatov, 2011; Cuartas et al., 2019, Cuartas, 2021; Grogan-Kaylor et al., 2021; Pace et al., 2019).

When viewed on the whole, the research of Straus and others has demonstrated that most caregivers use both aggressive and nonaggressive disciplinary methods with their children. While most parents do not use beating as a form of discipline, minor physical assault (e.g., slapping, spanking) and psychological aggression (e.g., shouting, yelling, or screaming at child) are common (Kim et al., 2014; Lee et al., 2011; Straus et al., 1998). Furthermore, there is consistent evidence that psychological and physical aggression, including less severe forms of assault such as spanking, are harmful to children (Cuartas et al., 2020; Gershoff & Grogan-Kaylor, 2016; Gershoff et al., 2018; Lansford et al., 2014; Lansford, Wager, Bates, Dodge, and Pettit, 2012, Lansford, Wager, Bates, Pettit, and Dodge, 2012). To date, few studies of caregivers in LMICs have examined disciplinary behaviors simultaneously using a latent class approach.

Several prior studies in the U.S. have used latent class and latent profile approaches to examine caregiver disciplinary profiles, and these studies provide some insights into patterns of caregiver disciplinary approaches. First, these studies support the idea that aggressive and nonaggressive forms of discipline are not independent of one another (Kim et al., 2014; Lee et al., 2011). Indeed, nearly all mothers and fathers in the Fragile Families and Child Wellbeing Study reported using high levels of nonaggressive discipline, regardless of their frequency of use of physical and psychological aggression. Put another way, use of nonaggressive discipline did not differentiate parental disciplinary profiles (Kim et al., 2014; Lee et al., 2011). These studies also suggested that the use of psychological aggression may be as harmful as physical aggression. In bivariate analyses, the class of parents that reported the highest levels of psychological aggression toward their young child demonstrated a positive association with disadvantageous outcomes for child socioemotional development (Kim et al., 2014; Lee et al., 2011).

1.3. The current study

This study was guided by two primary objectives. The first objective was to model disciplinary patterns, or classes, in the household based on caregivers' self-reported use of 11 disciplinary behaviors in the past month. We built on prior research (Kim et al., 2014; Lee et al., 2011) using items from the Parent-to-Child Conflict Tactics Scales (Straus et al., 1998) adapted to the UNICEF MICS (UNICEF, 2006) to examine household disciplinary behavior patterns using LCA, a person-centered analysis that seeks to determine whether unique or distinct homogenous classes exist within a heterogeneous data set (Muthén, 2002; Roesch et al., 2010).

The second objective examined associations between the household disciplinary profiles with caregiver-reported child outcomes and household sociodemographic characteristics. Recent global estimates indicate that 43% of children under 5 living in LMICs are at risk for not attaining their developmental potential on socioemotional outcomes (Black et al., 2017). Physical punishment,

psychological aggression, and child abuse are established as being associated with poorer child socioemotional development (Grogan-Kaylor et al., 2021; Pace et al., 2019; Ward, Grogan-Kaylor, Ma, et al., 2021). Thus, we conducted multivariate analyses between disciplinary profiles and caregiver-reported child socioemotional outcomes commonly linked to caregiver discipline: child aggression, distraction, and getting along with others. We also examined associations between disciplinary profiles and sociodemographic variables that are commonly linked to caregiver discipline: child sex, caregiver attitudes toward physical punishment, caregiver education level, household wealth, number of household members, and community type (i.e., urban vs. rural).

Based on prior studies (Gershoff & Grogan-Kaylor, 2016; Grogan-Kaylor et al., 2021; Pace et al., 2019; Ward, Grogan-Kaylor, Pace, et al., 2021), we hypothesized that child aggressive behavior and distraction would be higher among the household disciplinary classes characterized by high levels of caregiver-to-child aggression, while children getting along with others would be higher among the household disciplinary classes characterized by low levels of caregiver-to-child aggression. We also hypothesized that caregiver attitudes toward physical punishment would be higher among the household disciplinary classes characterized by high levels of caregiver-to-child aggression. Further, we hypothesized that household wealth score (Lansford et al., 2019) and parent education level (Lansford et al., 2015) would be higher among the household disciplinary classes characterized by the lowest levels of caregiver-to-child aggression. Finally, we hypothesized that households that had a higher number of household members, households with a male focal child, and households in urban communities would be more likely to show high levels of caregiver-to-child aggression (Ward, Grogan-Kaylor, Pace, et al., 2021).

2. Method

2.1. Participants and procedure

Data came from the United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys (MICS). MICS used multi-stage cluster sampling, which involved households being randomly selected for participation within clusters. MICS conducted multiple surveys including the household survey that included a module on caregiver's disciplinary behaviors. Data were collected within each sampling area via fieldwork teams that conducted in-person interviews with the head of the household. If the head of the household was unavailable, a spouse of the head-of-household or a caregiver was interviewed. A "reference" child—between the ages of 2 and 17 for MICS4, and 1 to 17 for MICS5—within the household was chosen via a random number table for questions on child discipline. After the household survey, the mother or primary caregiver of each child under age 5 (i.e., the "focal" child) completed a survey with questions on that child's socio-emotional development. MICS surveys are comparable across countries and representative of individuals living within each cluster, which is particularly useful for policymaking purposes.

In this study, we use MICS4 and MICS5, which occurred between 2009–2013 and 2012–2017, respectively. Survey responses from 63 countries that had been publicly released as of August 2018 were included. These rounds collected data on our dependent variables (i.e., child socioemotional development): child aggression, distraction, and getting along with others. Only respondents who had children who were 3 and 4 years old were given the child socioemotional development questions. More details regarding the content and methodology behind UNICEF MICS data can be found on their website: https://mics.unicef.org/about. The Institutional Review Board at [blinded for review] deemed our analyses exempt from oversight.

On average, focal children (i.e., those aged 3- or 4-years-old with socioemotional development outcome data) in the analytic sample ($N = 218,824$) were approximately 4 years old, and 50.8% were male. The average number of household members was 7, and over half of the sample (58.6%) lived in rural areas. The modal level of paternal and maternal education was primary education. The average wealth score in the sample was −0.12, meaning that households had wealth scores 0.12 standard deviations below the average wealth scores in their sampling area. Most household respondents were the child's biological parent (73.54%) and male (83.02%). Approximately one-third of caregivers (32.8%) believed that children need physical punishment to be raised properly.

2.2. Measures

2.2.1. Caregivers' disciplinary behaviors
Eleven household disciplinary behaviors were used to inform latent class membership. Discipline behaviors were measured using a UNICEF-modified version of the Parent-Child Conflict Tactics Scales (CTSPC; Straus et al., 1998). UNICEF modified the CTSPC for feasibility in a large survey and to ensure cross cultural suitability of the measure. Specifically, UNICEF reduced the number of items and made response options dichotomous with reference to usage in the past month by anyone in the household (rather than just a primary caregiver) (UNICEF, 2010). The eleven behaviors included two psychological aggression variables (shouted at the child; called the child names), six physical aggression variables (shook the child; spanked the child; hit or slapped the child on the arm or leg; hit the child with an object; hit or slapped the child on the face, head, or ears; beat the child as hard as one could), and three nonaggressive discipline variables (took privileges away from the child; explained why the behavior was wrong to the child; gave the child something else to do). All measures of parental discipline were dichotomous (0 = *no*, 1 = *yes*), which asked whether the respondent or any other adult in the household used the 11 disciplinary practices toward the reference child, who was in the age range of 1 to 17 years, in the past month.

2.2.2. Child and household variables
Child socioemotional variables were measured with three questions from the ten-item Early Childhood Development Index (ECDI) (Loizillon et al., 2017). Child socioemotional outcomes were only assessed among focal children who were 3 and 4 years old. To

measure child aggression, the respondent was asked, "Does [child] kick, bite, or hit other children or adults?" (0 = *no*, 1 = *yes*). To measure child distraction, the respondent was asked, "Does [child] get distracted easily (0=*no*, 1=*yes*). To measure whether the child got along with others, the respondent was asked, "Does [child] get along well with other children?" (0 = *no*, 1 = *yes*). Child sex was dichotomous (0 = *female*, 1 = *male*). Household wealth score was continuous and standardized within each country, reflecting the number of standard deviations above or below a household was respective to the average wealth score in the sampling area of their country. Number of household members was continuous and capped at 50. Mothers' and fathers' educational attainment were dichotomous (0 = *none*, 1 = *primary education or higher*). Community type was dichotomous (0 = *urban*, 1 = *rural*). Attitudes toward physical punishment was a dichotomous item that asked whether the respondent believed that children need physical punishment in order to be raised properly (0 = *no*, 1 = *yes*).

2.3. Analytic strategy

Descriptive analyses were conducted in Stata version 17 (StataCorp, 2021). Data were restricted to households with 3- and 4-year-old focal children who had socioemotional outcomes; further, participants were dropped if they were missing on all household disciplinary behaviors (4.63%), leaving a final sample size of 218,824 respondents across 63 countries (see Table 1). Number of households in each country ranged from 116 in St. Lucia to 20,486 in Nigeria. In this sample, 44% of focal children were also the reference child for the household discipline data. To examine the typologies of household discipline, while accounting for the correlation of observations within countries, a multilevel latent class analysis (LCA) was conducted in Mplus version 8 (Muthén and Muthén, 1998-2017). Missing data on the disciplinary behaviors were very few, and ranged from 0.06 to 1.67%. For the LCA, missing data were handled using full-information maximum likelihood estimation, which uses all available data while not dropping observations.

To determine an appropriate number of classes, we examined the Bayesian Information Criteria (BIC), entropy, and the bootstrapped likelihood ratio test (BLRT). Studies suggest the BLRT is preferred over the standard likelihood ratio test (LRT) (Nylund et al., 2007). Smaller BICs represent better fit. Entropy greater than 0.70 indicates appropriate classification (Jung & Wickrama, 2008). A significant BLRT suggests the *k* class model fits that data better than the *k*-1 class model. Once the number of classes was established, we regressed the latent classes onto the child and household sociodemographic characteristics, which resulted in a multinomial regression where the *lower behavioral control* class was the reference group. In this step of the analysis, Mplus handled missing data using Maximum Likelihood estimation with robust standard errors, which reduced the sample size to 168,813. To determine how much of the variability in classes could be attributed to the country each family was living in, we calculated the intraclass correlation coefficient (ICC). Because Mplus did not provide the necessary variance components for the calculation of the ICC, we calculated the ICC

Table 1
Descriptive statistics of study variables (*N* = 218,824).

Variable	*N*	%	M	SD	Min	Max
Psychological aggression						
Shouted at child	144,206	65.98				
Called child names	66,740	30.52				
Physical aggression						
Shook child	73,017	33.42				
Spanked child	94,353	43.16				
Hit/slapped child on arm/leg	60,097	27.68				
Hit child with object	45,762	20.93				
Hit/slapped child on face/head/ears	37,095	17.09				
Beat child as hard as one could	12,818	5.87				
Nonaggressive behaviors						
Took privileges away from child	100,773	46.84				
Explained why behavior was wrong	175,034	80.04				
Gave child something else to do	93,575	42.84				
Child variables						
Aggression	84,120	38.44				
Distraction	107,290	49.03				
Gets along with others	196,632	89.86				
Male	111,167	50.80				
Maternal education						
None	71,485	32.69				
Primary	67.035	30.66				
Secondary-plus	80,142	36.65				
Paternal education						
None	43,763	25.29				
Primary	52,237	30.19				
Secondary-plus	77.047	44.52				
Household variables						
Rural	128,288	58.63				
Wealth score			−0.12	0.97	−10.11	7.30
Number of household members			6.92	4.01	2	50

in Stata.

3. Results

3.1. Latent class analysis

We determined that the three-class model best fit the data (BIC = 2,448,439.944, entropy = 0.701, BLRT = 41,643.727(12), $p < .001$). The two-class model had a higher BIC and similar entropy (BIC = 2,489,936.130, entropy = 0.712, BLRT = 227,967.486 (12), $p < .001$). The four-class model showed a BIC that leveled-off and had much lower entropy (BIC = 2,429,806.504, entropy = 0.63, BLRT = 18,780.993(12), $p < .001$). We tested the data up to six classes to ensure that fit indices did not improve, and they did not (see Table 2). The three-class solution was selected based on the meaningfulness of the classes compared to the other class solutions. The first class was labeled the *high behavioral control* class ($n = 34,346$ [15.70%]); the second and largest class was labeled the *moderate behavioral control* class ($n = 120,269$ [54.96%]); the third class was labeled the *lower behavioral control* class ($n = 64,199$ [29.34%]). The ICC suggested that 30.27% of the variability in the latent classes could be attributed to the country level.

The LCA results expressed in a probability scale can be found in Table 3 and Fig. 1. This scale reflects the probability that a caregiver endorsed the discipline item within the particular class. In the *high behavioral control* class, 96% of children were exposed to shouting and >70% were exposed to name-calling, shaking, spanking, hitting/slapping on the arm/leg, and explaining why the behavior was wrong. Within this same class, 68.7% of children were exposed to taking away privileges, 66.4% were exposed to hitting/slapping on the face/head/ears, 63.2% were exposed to redirecting (i.e., giving the child something else to do), 59.3% were exposed to hitting with an object, and 28.2% were exposed to beating as hard as one could. This demonstrates that these households were using high levels of psychological and physical aggression, likely relating to an abusive profile of parenting. In the *moderate behavioral control* class, 86.6% of children were exposed to verbal reasoning, 52.8% were exposed to taking away privileges, 47.9% were exposed to redirection, and 81.8% were exposed to shouting. Due to the high rates of nonaggressive discipline *and* shouting, it is likely that these caregivers shouted while administering nonaggressive discipline tactics. In the *lower behavioral control* class, 63.1% of children were exposed to verbal reasoning, with no other discipline strategy being endorsed by the majority of caregivers. Notably, this class had the lowest rates of all forms of aggressive discipline utilization.

3.1.1. Multinomial regression

The associations between the child socioemotional outcomes, child and household sociodemographic characteristics, and the latent classes can be found in Tables 4. Aggressive children were more likely to be in the *high behavioral control* class (OR = 2.78, $p < .001$) and the *moderate behavioral control* class (OR = 1.58, $p = .018$) compared to the *lower behavioral control* class. Distracted children were more likely to be in the *high behavioral control* class (OR = 1.35, $p = .018$) and *moderate behavioral control* class (OR = 1.18, $p = .015$) compared to the *lower behavioral control* class. Children who got along with others were less likely to be in the *high behavioral control* class (OR = 0.81, $p = .036$) than the *lower behavioral control* class.

Male focal children were more likely to be in the *moderate behavioral control* class (OR = 1.06, $p = .005$) compared to the *lower behavioral control* class. Caregivers who thought physical punishment was necessary to raise children were more likely to be in the *high behavioral control* class (OR = 11.64, $p < .001$) and the *moderate behavioral control* class (OR = 3.80, $p < .001$) compared to the *lower behavioral control* class. Mothers and fathers with a primary education or higher were less likely to be in the *high behavioral control* class (Mothers: OR = 0.50, $p < .001$; Fathers: OR = 0.73, $p = .002$) and the *moderate behavioral control* class (Mothers: OR = 0.77, $p = .008$; Fathers: OR = 0.81, $p = .001$) compared to the *lower behavioral control* class. Households with a greater number of household members were more likely to be in the *high behavioral control* class (OR = 1.04, $p = .002$) compared to the *lower behavioral control* class. Contrary to expectations, households with higher household wealth scores were more likely to be in the *moderate behavioral control* class (OR = 1.11, $p = .045$) compared to the *lower behavioral control* class. Community type was not associated with the latent classes.

4. Discussion

Children in LMICs are exposed to high levels of aggressive forms of caregiver punishment (Cuartas et al., 2019) that are associated with lower socioemotional development (Cuartas, 2021; Grogan-Kaylor et al., 2021; Pace et al., 2019). Children in LMICs also experience high levels of psychological aggression (Akmatov, 2011) and nonaggressive parental discipline (Grogan-Kaylor et al., 2021). In fact, nonaggressive discipline and psychological aggression are more common than physical aggression in many LMICs (Akmatov, 2011; Ward, Grogan-Kaylor, Ma, et al., 2021). Importantly, while caregivers tend to use multiple forms of discipline to

Table 2
Latent class analysis fit indices.

	Two-class solution	Three-class solution	Four-class solution	Five-class solution	Six-class solution
BIC	2,489,936.130	2,448,439.944	2,429,806.504	2,416,857.856	2,412,906.508
Entropy	0.712	0.701	0.626	0.617	0.600
BLRT(df)	227,967.486(12)***	41,643.727(12)***	18,780.993(12)***	13,096.201(12)***	4098.900(12)***

Note: BIC = Bayesian Information Criterion; BLRT = bootstrapped likelihood ratio test.
*** $p < .001$.

Table 3
Latent class analysis results in probability scale.

Item	Class 1 High behavioral control	Class 2 Moderate behavioral control	Class 3 Lower behavioral control
Shouted at child	0.960	0.818	0.215
Called child names	0.759	0.313	0.046
Shook child	0.746	0.381	0.028
Spanked child	0.881	0.497	0.071
Hit/slapped child on arm/leg	0.822	0.251	0.027
Hit child with object	0.593	0.193	0.031
Hit/slapped child on face/head/ears	0.664	0.112	0.007
Beat as hard as one could	0.282	0.022	0.003
Took privileges away from child	0.687	0.528	0.247
Explained why behavior was wrong	0.896	0.866	0.631
Gave child something else to do	0.632	0.479	0.227

Note: BIC = 2,448,439.944, entropy = 0.701, BLRT = 41,643.727(12), $p < .001$. Class 1: $n = 34,346$ (15.70%); Class 2: $n = 120,269$ (54.96%); Class 3: $n = 64,199$ (29.34%).
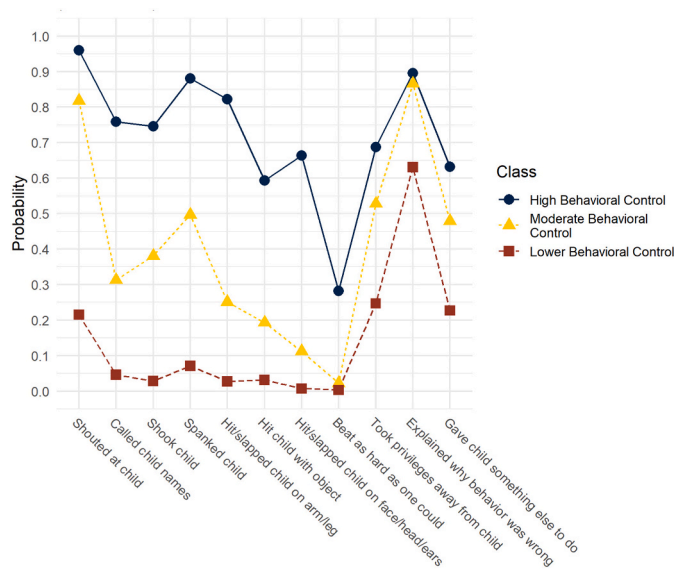

Fig. 1. Latent class analysis results in probability scale ($N = 218,824$).

Table 4
Multinomial regression of child and household characteristics predicting the latent classes ($N = 168,813$).

	High behavioral control	Moderate behavioral control	High behavioral control[1]
Child is aggressive	2.78***	1.58***	1.76***
Child is easily distracted	1.35*	1.18*	1.14
Child gets along well with others	0.81*	1.06	0.76**
Focal child is male	1.03	1.06**	1.02
Mother, primary education+	0.50***	0.77**	0.65*
Father, primary education+	0.73**	0.81**	0.90
Children need physical punishment	11.64***	3.80***	3.06***
Rural community	0.71	0.88	0.80
Household wealth	1.02	1.11*	0.92
Household members	1.04**	1.01	1.03***

Note: Coefficients are odds ratios. The reference class is the *lower behavioral control* class. The reference class for the High Behavioral Control[1] class is the *moderate behavioral control* class.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

correct unwanted child behavior, few studies examine *patterns* of disciplinary behavior. A latent class approach provides a unique perspective from which to view caregivers' disciplinary behaviors by identifying subgroup variation on a set of distinct but related behaviors, examining the co-occurrence of these behaviors at the person level, and creating classes based on how behaviors cluster together at the group level. Using UNICEF MICS data, this study used multilevel LCA to identify distinct patterns of parenting behaviors using a diverse, multicultural sample of caregivers across 63 LMICs.

Our findings from a multilevel LCA suggested three parenting profiles, or "classes," best fit the data. Specifically, we found a class of *high behavioral control* caregivers, who used nearly all forms of discipline, particularly psychological and physical aggression; *moderate behavioral control* caregivers, who used nonaggressive discipline in tandem with shouting and spanking; and *lower behavioral control* caregivers, who primarily used verbal reasoning and were the least likely to use physical or psychological aggression. The *lower behavioral control* class was associated with the most advantageous child socioemotional outcomes, while the *high behavioral control* class was associated with the poorest child socioemotional outcomes. These findings provide further support for the well-established associations between aggressive discipline and detrimental child outcomes as demonstrated in a meta-analysis of 75 studies involving more than 160,000 children globally (Gershoff & Grogan-Kaylor, 2016) and studies using samples from LMICs (Cuartas, 2021; Grogan-Kaylor et al., 2021; Pace et al., 2019). In addition, we found that approximately 30% of the variation in these latent classes could be explained by the country the caregiver lived in. This suggests that a moderate amount of variation in parenting profiles can be found between countries while a greater amount of variation in parenting profiles can be found within countries. Thus, interventions must focus on both global initiatives that reduce aggressive discipline and on country-specific programs that address local priorities in parenting and child development.

Our results indicate that nonaggressive discipline was used by all three classes. Notably, the rate of nonaggressive discipline (i.e., taking away privileges, verbal reasoning, and giving something else to do) was highest in the *high behavioral control* class, which was associated with the poorest child socioemotional development. This finding suggests that the use of nonaggressive behavior likely cannot counteract high levels of physical and psychological aggression. Socioemotional development outcomes were most positive for children in the *lower behavioral control* class that exhibited the lowest rates of utilization of all forms of aggressive discipline. Importantly, our results also suggest that caregiver use of nonaggressive discipline tactics in combination with shouting and spanking (as in the *moderate behavioral control* class) may not be as effective as engaging in nonaggressive discipline tactics alone (as in the *lower behavioral control* class).

In other words, the results of this study seem to suggest that aggressive disciplinary behaviors are harmful to children, even when used in conjunction with high levels of nonaggressive disciplinary behaviors. Such results may be interpreted as providing support for the United Nations Convention on the Rights of the Child (UN General Assembly, 1989), which has called for eliminating all forms of physical punishment of children; to date, 63 countries have banned its use (Global Initiative to End All Corporal Punishment of Children, 2021). These findings also align with other studies conducted in LMICs that suggest aggressive disciplinary behaviors are not beneficial to children in low-resource settings (Cuartas, 2021; Pace et al., 2019; Ward, Grogan-Kaylor, Ma, et al., 2021). Our results also support intervention research that aims to promote nonaggressive disciplinary strategies in LMICs while simultaneously reducing the use of aggressive and power-assertion behaviors (Knerr et al., 2013; Lachman et al., 2017).

Multinomial regression analyses suggest the three classes differed on key household sociodemographic factors. Specifically, households who endorsed physical punishment were more likely to be in the *high behavioral control* and *moderate behavioral control* classes. On the other hand, mothers and fathers with a primary education or higher were more likely to be in the *lower behavioral control* class. This highlights the importance of dedicating micro (e.g., positive parenting) and macro (e.g., educational) resources to families in under-resourced contexts. Indeed, prior research conducted in LMICs have addressed the need for parenting interventions to address societal norms, economic and educational needs, and country-level vulnerabilities (Beatriz & Salhi, 2019; Lokot et al., 2020). Programs that aim to change parental attitudes toward physical punishment, such as the Positive Discipline in Everyday Parenting Program (Durrant, 2020) may be particularly helpful to communities in low-resource contexts. Further, increasing access to educational attainment may be important for families who are exhibiting aggressive behaviors toward children.

4.1. Implications for policy and practice

The LCA results suggest that the class with the poorest child socioemotional outcomes was associated with the highest rates of physically aggressive parenting behaviors. Findings such as these are important in part because professional organizations and government bodies have heralded the need to decrease violent forms of discipline and promote nonviolent discipline across the globe. Researchers have also identified the need to understand the impact of violence in LMICs, including violence stemming from parental discipline behaviors (Pundir et al., 2020). The American Academy of Pediatrics (Sege et al., 2018) and the World Health Organization (WHO, 2014, 2021) have urged parents to avoid violent forms of discipline and recommend the use of constructive forms of nonviolent discipline to promote child well-being.

Although this study is cross-sectional and the results are correlational and must be interpreted with caution, a growing body of research suggests potential benefits for helping parents to reduce use of physical aggression and psychological aggression (Grogan-Kaylor et al., 2021; Taillieu & Brownridge, 2013). The results of the current study can be interpreted to further suggest that interventions that only focus on increasing caregiver nonaggressive discipline behaviors may not be sufficient to improve child outcomes, particularly if aggressive forms of discipline are still being used in the household. Therefore, interventions that reduce aggressive parenting *and* promote positive parenting in LMICs may be merited. The Positive Discipline in Everyday Parenting (PDEP) Program, which has been implemented on an international level, both promotes positive parenting *and* reduces coercive parental behaviors, such as corporal punishment (Durrant, 2020). Our results suggested the *lower behavioral control* class was associated with

optimal child socioemotional outcomes, supporting the notion that interventions that help parents use verbal reasoning may be helpful. The Better Parenting Programme, which has been tested in some LMICs, has been shown to increase parents' use of verbal reasoning (Al-Hassan & Lansford, 2011).

4.2. Study limitations

Results should be interpreted in light of study limitations. Nearly all variables used in this study were based on caregivers' self-report, which may be susceptible to self-presentation bias or inaccurate reporting (Bornstein et al., 2015). Thus, this study may underestimate the true frequency of aggressive behavior toward children (Lee et al., 2012; Straus, 2004). The analyses were descriptive and cross-sectional; thus, they are suggestive only of associations among variables. Although application of LCA with a large and diverse sample of LMICs is innovative within the existing literature, it is important to recognize that LCA class assignment is based on probabilities, which means that the exact class size or exact percentage of individuals within a class is probabilistic. Further, because the bootstrapped likelihood ratio test was statistically significant across all class numbers tested, we relied on the BIC, entropy, and meaningfulness of the classes to arrive at the three-class solution. Additionally, while we assigned names to each class (i.e., *high behavioral control, moderate behavioral control, lower behavioral control*), these classifications most likely oversimplify the nuance and complexities existing within each class (Weller et al., 2020).

This study only includes households that have a focal child between the ages of 3 and 4, during which child socioemotional development was measured in MICS. Research has shown that aggressive parental discipline peaks during these ages (e.g., Finkelhor et al., 2019), however, a limitation of this study is that we cannot ascertain whether the focal child was also the reference child for household disciplinary profiles that was measured among children between the age range 1 to 14 years. On one hand, this enables us to identify disciplinary profiles that represent a broad range of family experience in LMICs, and we believe it is reasonable to assume the focal child was exposed (either directly/personally or indirectly/vicariously) to the household's disciplinary profile regardless of the reference child's age (in cases when the focal child is not the reference child). While it is possible that disciplinary profiles may differ across the age of the reference child, a prior MICS study (Pace et al., 2019) found consistent associations of caregiver discipline with child development regardless of the child's exposure to direct or indirect discipline.

In this study, we examine a limited set of caregiver disciplinary behaviors, through an adapted version of the CTSPC that did not include supervisory neglect (Straus et al., 1998). CTSPC has a number of strengths and is widely used in research in the U.S. and global context, and the child maltreatment literature (Straus et al., 1998; Straus, 2004). However, the scale does not measure aspects of parenting such as parental warmth and emotional support (Rothenberg, Lansford, Alampay, et al., 2020; Rothenberg, Lansford, Bornstein, et al., 2020; Lansford et al., 2018, 2021); parental acceptance versus rejection (Khaleque & Rohner, 2002; Putnick et al., 2015; Rohner & Britner, 2002); and parental behavioral or psychological control of the child (Rothenberg, Lansford, Alampay, et al., 2020; Rothenberg, Lansford, Bornstein, et al., 2020; Basili et al., 2021). Therefore, the interpretation of these classes is solely restricted to caregiver disciplinary behaviors, and not other aspects of the caregiver-child relationship because additional measures are not available in the MICS. Finally, we note that the measure of child socioemotional outcomes includes only one item for each outcome.

5. Conclusions

In a sample of over 200,000 households across 63 countries, we used multilevel LCA to discern underlying patterns of caregiver disciplinary behavior. The LCA revealed three classes: a *high behavioral control* class (where caregivers used high levels of physical aggression, psychological aggression, and nonaggressive discipline), a *moderate behavioral control* class (where caregivers used high levels of psychological aggression and nonaggressive discipline), and a *lower behavioral control* class (where caregivers primarily used verbal reasoning). The *lower behavioral control* class had 3- to 4-year-old children with the most advantageous socioemotional outcomes, and also had caregivers who were highly educated and did not endorse the use of physical punishment. Findings suggest that aggressive and nonaggressive discipline is not orthogonal—in other words, parents who use physical and psychological aggression tend to also use nonaggressive discipline strategies. This supports the notion that interventions must both decrease violent parental behaviors while also promoting positive forms of discipline. Our findings suggest that both micro (i.e., parenting) and macro (i.e., educational access) interventions may be needed to assist caregivers using violent disciplinary strategies in LMICs.

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