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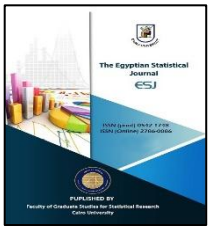

Factors Associated with Violent Disciplinary Practices Against Children: Using General Structural Equation Modeling

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Abstract

Violent disciplinary practices, including the use of physical punishment and psychological aggression by parents and caregivers, are widespread in Egypt. Therefore, understanding the economic and social factors associated with these practices is essential to reduce their use against children, given their negative short- and long-term consequences for children's health and development. This paper aims to identify the direct and indirect factors that influence children's exposure to violent disciplinary practices by parents or caregivers, as well as the impact of mothers' or caregivers' exposure to violence on their use of violent disciplinary practices with children. The study relied on data from the 2021 Egyptian Family Health Survey. Generalized structural equation modeling was used, and the results showed that a high percentage of families use all forms of punishment. It also revealed that child gender, school enrolment, and maternal exposure to violence are direct factors in children's exposure to violence, while wealth is an indirect factor. The study concludes that integrated strategies must be adopted to protect children and mothers and provide the necessary material and psychological support to reduce the prevalence and impact of these practices.

Mathematical Subject Classification: 00A71

1. Introduction

Violence against children is a common problem in all countries, including various types of violence, and occurs at different stages of a child's development, resulting in actual or potential harm to a child's health, survival, or development. Violence against children often occurs in the home, where children are supposed to be protected and their rights guaranteed (Lim et al., 2022). The cycle of violence theory also claims that there are other consequences, including that exposure to violence, particularly physical abuse by parents or caregivers, increases the probability of children engaging in violent behavior later. This pattern is a major social concern in many countries, including Egypt (Widom 1989).

There are two types of child discipline practices: nonviolent discipline practices based on discussion and reasoning, and violent discipline practices, which can be divided into three main categories: psychological aggression, physical punishment, and severe physical punishment.

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Psychological aggression includes behaviors such as yelling at, threatening, or insulting children. Physical punishment includes hitting, shaking, and slapping, while severe physical punishment includes acts such as strangulation, burning, or scalding (Taraban et al., 2017).

One of the Sustainable Development Goals, Target 16.2, which aims to end all forms of violence against children and end their abuse, neglect, and exploitation, has been integrated into many other goals related to violence. Yet, millions of girls and boys of all ages and in all regions continue to experience violence at unbearable levels of severity—in their neighborhoods, schools, care and protection institutions, and within their families.

Protecting children from violence is a fundamental human right and a cornerstone of good governance and economic management, given its long-term psychological impact on children's lives and development. It also has repercussions for society and economic development, undermining countries' human and social capital.

Nearly 400 million children under five years old, representing 60% of the world's population in this age group, are regularly subjected to psychological violence or physical punishment at home (UNICEF 2024).

Disciplinary practices against children in Egypt are a critical issue that reflects social, cultural, and economic dynamics within the country. In many Egyptian families, traditional disciplinary methods often include physical punishment and harsh verbal reprimands. Despite growing global awareness of the importance of non-violent disciplinary methods, violent practices remain prevalent in Egypt, with 83% of children aged 1–14 experiencing some form of violence to control behavior (CAPMAS, 2022).

Understanding the current state of discipline practices in Egypt requires examining both the direct actions taken by parents and caregivers, as well as the social and economic contexts that affect these behaviors. Addressing these underlying factors can reduce the prevalence of violent disciplinary practices and promote healthier and more effective parenting practices in Egypt.

To enhance the effectiveness of public awareness and local advocacy efforts in promoting more effective parental discipline strategies, it is important to understand parents' choices of discipline practices. The current study aims to fill this knowledge gap, to generate findings that support a more targeted approach to interventions and advocacy. Furthermore, it is also important to consider parents' prior experiences of receiving severe discipline in childhood, as their personal history may influence their beliefs and perceptions, which in turn may affect their behavior.

This study is organized as follows: Section 2 provides a review of the relevant literature; Section 3 presents the study's data source; Section 4 includes the conceptual framework and research questions, as well as the statistical method used. Section 5 reviews the most important results; Section 6 provides a summary of the main findings and discusses the extent of agreement or disagreement with previous studies; and finally, Section 7 presents a set of proposed policy recommendations.

2. Literature Review

When conducting a literature review on the direct and indirect determinants of violent discipline practices against children, it is essential to explore various academic sources, research studies, and theoretical frameworks that discuss these factors.

Numerous studies at the national and international levels have focused on violent discipline practices. Studies such as Abrahamyan et al., (2024), Abdel Fattah (2021), CAPMAS and

UNICEF Egypt, (2018) explored the prevalence of violent discipline practices and their association with demographic and socioeconomic factors. Rancheiro et al., (2023) and Lim et al., (2022) focused on cultural attitudes and parenting behaviors in Portugal and Singapore, respectively, examining the roles of maternal characteristics, family dynamics, and social norms. However, Conger (2020) and Gershoff et al., (2007) emphasized the role of economic pressures and parental education in shaping disciplinary behaviors, while Beatriz and Salehi (2019) linked wealth levels to disciplinary practices and beliefs. Mohammed and Samak (2017) and Antai et al., (2016) examined how parental justification for violent discipline affects child behavior, particularly in Egypt. Gershoff and Bitensky (2007) provided a historical perspective on the cultural acceptance of corporal punishment, while Chaffin et al., (1996) linked substance abuse to an increased risk of child maltreatment.

Various studies have concluded that parental gender influences disciplinary practices as parents more often use both psychological and physical punishment (Abrahamyan et al., 2024). Other studies found that younger children, larger families, and urban residents (particularly in Lower Egypt) are associated with increased violent discipline (Abdel Fattah, 2021; Antai et al., 2016).

Wealth is a common determinant in parents' use of violent disciplinary practices (CAPMAS and UNICEF Egypt, 2018; Abdel Fattah, 2021), and crowding is an important determinant of violent disciplinary practices (CAPMAS and UNICEF Egypt, 2018).

Lower socioeconomic status and economic stress are strongly associated with violent discipline (Gershoff et al., 2007; Conger, 2020). However, higher parental education within lower socioeconomic groups can mitigate the likelihood of corporal punishment. Lim et al., 2022; Gershoff and Bitensky, 2007) argue that normative acceptance of corporal punishment, often shaped by parental upbringing, plays an important role. Antai et al., 2016, found that exposure to intergenerational violence and intimate partner violence significantly increases the risk of child abuse by mothers. Finally, studies by Chaffin et al., 1996; Mohammed and Samak, 2017, suggest that factors such as substance abuse, parental stress, and negative marital relationships are associated with increased violent discipline.

By reviewing previous studies, it can be concluded that some previous studies were satisfied with descriptive analysis when studying the determinants of violent disciplinary practices and did not rely on advanced statistical models. Even studies such as Abdel Fattah (2021) and CAPMAS and UNICEF Egypt (2018) relied on a binary or a multinomial logistic regression analysis and did not consider the direct and indirect factors influencing a child's exposure to violent disciplinary practices. Although Mohammed and Samak (2017) used structural equation analysis, they did not use a national survey, but rather a sample survey of Assiut Governorate. Therefore, this study examines the direct and indirect determinants of children's exposure to violent disciplinary practices by mothers or caregivers, as previously found. The following presents the relational framework and methodology used in this study.

3. Data Source

This study is based on data from the 2021 Egyptian Family Health Survey (EFHS), the multi-stage stratified survey sample was designed to provide estimates at the national level, as well as at the level of the six main regions and governorates with a sample size of 30,677 households. This study focuses on data collected through a module measuring child discipline practices, one child aged 1-14 years is randomly selected from the household. The respondent (usually the head of the household) is asked a series of questions in the household questionnaire, investigating the various disciplinary practices they or a household member used to control the behavior of the selected child during the month prior to the interview. The survey

also included a module measuring domestic violence, which was administered to a subsample of the survey (representing half of the survey sample). Only one eligible woman from each household is selected to answer the domestic violence questionnaire to assess the prevalence of spousal violence. The analysis focuses on children who completed the behavioral control model within households, which also included the domestic violence questionnaire, to achieve the main objective of the study, which is to identify the most statistically significant determinants of child disciplinary practices and the pathways through which they increase the likelihood of violent disciplinary practices among children in aged 1-14 years in Egypt.

4. Methodology

4.1 Conceptual framework and research questions

Figure 1 illustrates the proposed conceptual framework for the factors influencing the use of violent disciplinary methods against children. This framework is divided into characteristics of the child, mother, father/stepfather, and overall household circumstances. This serves as a prelude to examining their direct and indirect impact on the types of violent disciplinary methods to which the child is exposed, whether psychological, physical, or severe physical. It also demonstrates the presence of an influence mediating factor: the mother's exposure to any type of violence (physical, sexual, or emotional), indicating that the violence practiced against her may be one of the factors leading to the use of such violent practices against the child.

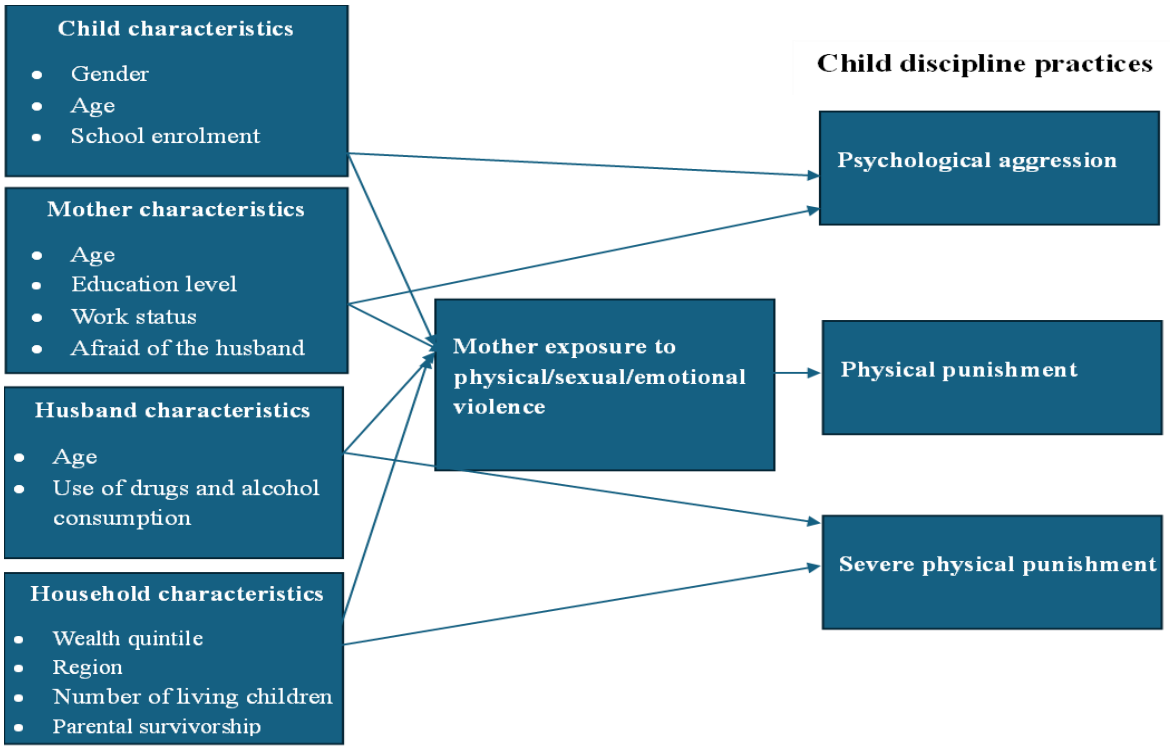

Figure 1. A Conceptual Framework for the Determinants of Violent Disciplinary Practices against Children.

Therefore, the research questions are as follows:

- Do a child's characteristics (such as age, gender, and school enrolment status) influence the likelihood of exposure to violent disciplinary practices?

- How do a woman's socioeconomic factors (such as age, educational level, work status, and fear of her husband) affect the likelihood of her children being subjected to violent disciplinary practices?
- What effect do a husband's characteristics (such as age and use of drugs or alcohol consumption) have on the likelihood of a child being exposed to violent discipline?
- Do household characteristics (such as region, wealth level, number of living children, and parental survivorship) affect the likelihood of a child being subjected to violent disciplinary practices?

4.2 Study variables

4.2.1 Endogenous variables

The study includes three binary endogenous variables representing different forms of violent disciplinary practices: psychological aggression, physical punishment, and severe physical punishment.

Each variable is coded as follows: (0) indicates that the child was not exposed to the relevant form of violent discipline, and (1) indicates that the child was exposed to a violent discipline method.

4.2.2 Mediator variable

A module on domestic violence was included in the Egyptian Family Health Survey individual questionnaire. A binary variable was created to reflect the mother/caregiver's exposure to any form of violence by her current or former husband. It takes two possible values: (0) if the mother/caregiver was not exposed to any form of violence and (1) if the mother/caregiver was exposed to any form of physical, sexual, or emotional violence.

4.2.3 Exogenous variables

The selection of exogenous variables is based on a comprehensive previous study that identified the factors associated with violent disciplinary practices against children. Various characteristics related to children, parents, and households are included as predictors, as prior research has demonstrated their significant associations with such practices. The predictors are categorized into four main groups as follows:

- ***Child characteristics***

This category includes the child's gender, age (measured in completed years at the time of the survey), and education enrolment, which indicates whether the child was enrolled in education during the survey period or not.

- ***Mother socioeconomic characteristics:***

This set of characteristics includes the mother's age in completed years at the time of the survey, the highest educational level of mothers or caregivers at the time of the survey, the mother's work status, which measured if the mother works for cash wages, and the last variable in this group is the variable related to mother's fear of her husband.

- ***Husband characteristics:***

This group aims to study the effect of the father's or husband's age in completed years and his use of drugs or alcohol consumption as a two-sided categorical variable (does not drink alcohol or use drugs, drink alcohol and/or uses drugs) as variables affecting the phenomenon under study.

• ***Household characteristics:***

The first predictor is the geographic region where the child's family resides which is divided into two categories (Upper Egypt, any other region). The second predictor is the wealth index, which is measured using data on housing characteristics and household assets. Households are scored through principal component analysis, classifying them into five wealth quintiles: lowest, second, middle, fourth, and highest. The Third predictor is parental survivorship, which indicates whether the child's father and mother were alive at the time of the survey. The last predictor in this set is the number of living children, which refers to the total number of children currently alive in the household.

This structured classification facilitates a comprehensive analysis of the factors influencing violent disciplinary practices against children.

4.3 Statistical model

The study used generalized structural equation modeling (GSEM), an extension of traditional structural equation modeling (SEM), which allows for a broader range of dependent variable distributions and model structures. It allows for the use of non-continuous dependent and mediating variables (such as the dependent variable representing child exposure to punishment, which is a binary variable).

Structural equations are also used to understand direct and indirect effects, allowing for the analysis of a variety of variables within the same model. GSEM is important for analyzing complex relationships between variables in models where the variables are either endogenous, exogenous, or both. It also allows for the simultaneous measurement or identification of the effects of variables on the complex structure of the model.

Structural equation models with observed variables are estimated by the following equation:

$$Y = BZ + \Gamma X + \zeta, \tag{1}$$

where: Y denotes the endogenous variables, X is the exogenous variables, B is the structural coefficients from the endogenous variables (mediating variables) to the other endogenous variables, Γ is the structural coefficients from the exogenous variables to the endogenous variables, and ζ denotes the error terms for the endogenous variables (Mueller 2012).

For a generalized endogenous variable (Y), the conditional mean is modeled using the g function, whereby:

$$g\big(E(Y|Z,X)\big) = BZ + \Gamma X \tag{2}$$

where: $g(.)$ is the chosen linking function. In this study, the endogenous variable is dichotomous, so the response can be modeled as a Bernoulli random variable with mean $E(Y|Z,X)$. Therefore, the link function is the logit function (Rockwood 2021), which is used in logistic models:

$$P(Y = 1|Z,X) = \frac{e^{BZ+\Gamma x}}{1+e^{BZ+\Gamma x}} \tag{3}$$

To estimate the effect of the mediating variable, Let Z be the binary mediator. The following equation is used (Gaynor et al., 2019):

$$P(Z = 1|X) = \frac{e^{\Gamma x}}{1+e^{\Gamma x}} \tag{4}$$

Finally, the total effects are also calculated by adding direct and indirect effects (Rabe-Hesketh et al., 2004).

5. Results

This section of the research provides a detailed descriptive analysis of the relationship between the demographic and socioeconomic characteristics of children and their parents, and the types of disciplinary practices used. The statistical significance of the relationship between the dependent and independent variables was assessed using the chi-square test. Among children aged 1–14 years, 60.7% of children were exposed to physical punishment, 29.2% of them were exposed to severe physical punishment, and 81.3% were exposed to psychological aggression, as shown in Table 1.

Table 1. Percent distribution of children aged (1-14) by type of violent disciplinary practices, EFHS 2021

	% Any physical Punishment	% Any severe physical punishment	% Any psychological punishment
Exposed	60.7	29.2	81.3
Not Exposed	39.3	70.8	18.7
Total	6480	6480	6480

Source: Prepared by researchers using the data of EFHS 2021.

The results in Table 2 show significant gender differences in exposure to punishment. Males are more vulnerable to all types of punishment than females. Almost 64.4% of males are exposed to physical punishment compared to 56.8% of females, while severe physical punishment affects 32.2% of males and 26.0% of females. As for psychological aggression, the gap narrows, with 82.4% of males and 80.2% of females being affected.

Children aged 3-4 and 5-9 are most vulnerable to physical and psychological aggression. Severe physical punishment is most common among children aged 5-9 (33.2%), while psychological aggression peaks in the same age group at 84%. In contrast, younger children aged 1-2 are least vulnerable to any form of punishment, showing the lowest rates across all categories.

Table 2. Percent distribution of children aged (1-14) by violent disciplinary practices according to children's, parents' and household characteristics, EFHS 2021

Characteristics		Any physical punishment	Any severe physical punishment	Any psychological aggression
		%	%	%
Gender of a child	Male	64.4***	32.2***	82.4***
	Female	56.8***	26.0***	80.2***
Age of a child	1-2	51.6***	18.9***	66.5**
	3-4	69.9***	33.0***	83.9**
	5-9	65.5***	33.2***	84.0**
	10-14	54.8***	27.0***	82.9**
School enrolment of a child	Enrolled in school	61.1*	29.9	83.5**
	Not enrolled in school	59.5*	26.9	74.4**
Mother age	15-19	54.7***	22.1***	68.4***
	20-24	64.4***	32.8***	79.4***
	25-29	67.7***	35.7***	81.2***
	30-39	60.7***	29.0***	82.2***
	40-49	52.4***	22.1***	80.0***
Mother Education Level	No education	63.3***	35.4***	82.4***
	Some primary	64.5***	31.3***	83.1
	Primary complete/ some secondary	65.6***	33.4***	83.8

Characteristics		Any physical punishment	Any severe physical punishment	Any psychological aggression
		%	%	%
	Secondary complete/ higher	57.8***	26.0***	79.9
Mother Work Status	Working for cash	56.3**	25.3***	81.8***
	Not working	61.5**	29.9***	81.2***
Afraid of husband	Most of the time afraid	64.8***	46.1***	86.5
	Sometimes afraid	64.5***	34.6***	82.4
	Never afraid	59.1***	25.8***	80.5
Husband's use of drugs or alcohol consumption	Drinks alcohol only	76.8	0.0***	76.8***
	Uses drugs only	59.8	42.4***	89.3***
	Drinks and uses drugs	69.4	56.3***	81.5***
	Does not drink alcohol or use drugs	60.6	28.8***	81.2***
Wealth quintile	Lowest	67.8***	37.4***	84.5***
	Second	64.7***	34.7***	83.0***
	Middle	60.7***	30.1***	82.6***
	Fourth	58.0***	24.8***	79.3***
	Highest	51.1***	17.6***	76.7***
Number of living children	1-2	59.6	26.6**	78.5***
	3-4	60.7	29.4**	83.0***
	5+	62.3	32.3**	80.0***
Parental survivorship	Both alive	60.8**	29.3**	81.5***
	Father deceased	51**	20.4**	70***
Mother exposure to physical/sexual/emotional violence	Not exposed	55.4***	23.6***	77.7***
	Exposed	71.9***	41.1***	89.1***
Region	Any other region	65.3***	35.3***	83.9***
	Any other region	57.0***	24.3***	79.2***

* p-value <0.1 **p-value <0.05 *** p-value <0.001

Source: Prepared by researchers using the data of EFHS 2021.

School enrolment also plays a role in exposure to punishment. Among children enrolled in school, 61.1% experience physical punishment, and 83.5% experience psychological aggression, compared to 59.5% and 74.4%, respectively, for children not enrolled in school. However, the difference in severe physical punishment between these two groups is small.

Mother's work status also influences punishment exposure. Children of working mothers are likely to face physical punishment by 56.3% and severe physical punishment by 25.3% compared to children of non-working mothers who face physical and severe physical punishment by 61.5% and 29.9%, respectively. Psychological aggression rates are nearly identical for both groups, at 81.8% for working mothers and 81.2% for non-working mothers.

Mother's age significantly influences discipline practices. Children of mothers aged 25–29 experience the highest rates of physical punishment 67.7% and severe physical punishment 35.7%. On the other hand, psychological aggression is most prevalent at 79.4% among children of mothers aged 20–24 years.

Mother's education is a crucial factor in reducing violent discipline. Children of uneducated mothers experience the highest rates of severe physical punishment (35.4%), while children of

mothers with secondary education or higher experience the lowest rates of all types of punishment: physical (57.8%), severe physical (26.0%), and psychological (79.9%).

Mother's work status also affects exposure to punishment. Children of working mothers are slightly less likely to experience physical punishment (56.3%) and severe physical punishment (25.3%) than children of non-working mothers (61.5% and 29.9%, respectively). However, the rates of psychological aggression were almost identical in both groups, at 81.8% for working mothers and 81.2% for non-working mothers.

Fear of the husband is closely associated with higher rates of punishment. Mothers who reported being afraid of their husbands "most of the time" used the highest rates of severe physical punishment (46.1%) and psychological aggression (86.5%). Conversely, mothers who are "never afraid" of their husbands reported significantly lower rates of severe physical punishment (25.8%) and psychological aggression (80.5%).

Severe physical punishment is most prevalent when the father drinks alcohol and uses drugs, with 56.3% of children experiencing it. Psychological aggression is highest (89.3%) when the father uses drugs only, while physical punishment peaks (76.8%) when the father drinks alcohol.

Economic status has a protective effect on punishment rates. Physical punishment is more common in the lowest wealth quintile (67.8%) and less common in the highest wealth quintile (51.1%). Rates of severe and psychological aggression follow a similar trend, suggesting that higher economic status reduces the likelihood of violent discipline.

Family size is another influential factor. Families with five or more children report higher rates of physical punishment (62.3%) and severe physical punishment (32.3%) than families with one or two children (59.6%, 26.6%) respectively.

Parental survivorship also has a significant effect on child exposure to punishment. Children with living parents are more likely to experience all three types of violent discipline practices, with 60.8% experiencing physical punishment compared to 51% of children without a living father, and the same pattern applies to the other two types of disciplinary practices.
When a mother is not exposed to physical, sexual or emotional violence she is less likely to use violent discipline practices than a woman who experiences any of the three types of violence for example 77.7 of children with living parents experience psychological aggression while this percent increases to 89.1% for children of a woman who experience any type of violence

Finally, regional disparities are evident: children in Upper Egypt being more likely to experience all forms of punishment compared to children in other regions. Physical punishment is particularly high in Upper Egypt (65.3%) compared to other regions (57.0%), with similar patterns observed for severe and psychological aggression.

These findings highlight the significant disparities in child punishment based on socioeconomic, educational, and regional factors. Addressing these disparities requires targeted interventions, particularly for vulnerable groups such as children from low-income families, those in Upper Egypt, and those whose mothers lack education or live in fear of their husbands.

Furthermore, a GSEM model was constructed to measure the effect of each independent variable on disciplinary practices, isolating their contributions while controlling interactions between other variables.

Table 3 shows that the probability of a child's exposure to psychological aggression is lower for females than for males and decreases if the children are enrolled in school. Furthermore, it was observed that a higher family standard of living is associated with a lower probability of children being exposed to psychological aggression. Interestingly, this probability increases if both parents are alive, as the child gets older, or if the mother is exposed to any form of violence.

Table 3. GSEM-based determinants of exposure of children in the age group (1-14 years) to violent disciplinary practices

Exogenous variables	Probability of:		
	Psychological aggression	**Physical punishment**	**Severe physical punishment**
Gender of a child: (Ref: male)	-0.15**	-0.34***	-0.34***
Age of a child	0.23***	-0.06	0.14**
School enrolment of a child: (Ref: enrolled in school)	-0.34**	0.10**	-0.19
Mother age	-0.11	-0.24***	-0.28***
Husband's use of drugs or alcohol consumption: (Ref: does not drink alcohol or use drugs)	0.167	0.28	-0.15
Afraid of husband	0.03	0.03	-0.23***
Region: (Ref: Upper Egypt)	-0.32***	-0.21**	-0.36***
Wealth quintile	-0.06**	-0.11***	-0.16***
Mother work status: (Ref: working for cash)	-0.08	0.08	0.04
Number of living children	-0.06	0.06	0.08
Mother education level	-0.001	-0.004	-0.01
Age of husband	-0.003	0.0008	-0.007
Parental survivorship: (Ref: both alive)	-0.74**	-0.28	-0.36
Mother exposure to physical/sexual/emotional violence: (Ref: does not exposed)	0.84***	0.69***	0.62***
Constant	2.81**	2.001***	1.79***

* p-value <0.1 **p-value <0.05 *** p-value <0.001

Source: Prepared by researchers using the data of EFHS 2021.

Regarding physical punishment, the analysis revealed that females are less likely to be subjected to physical punishment than males. However, children in Upper Egypt are more likely to be exposed to physical punishment than children in other regions. Furthermore, a higher family standard of living is associated with a lower likelihood of being exposed to physical punishment. Conversely, the likelihood of being exposed to physical punishment increases if the child is enrolled in school or if the mother is exposed to any form of violence.

Regarding severe physical punishment, the results indicate that female children are less likely to experience severe physical punishment than male children and that children in Upper Egypt are more at risk than children in other regions. The likelihood of severe physical punishment decreases with increasing mother's age and family living standards. Interestingly, the probability of severe physical punishment also decreases if the mother fears her husband. However, the likelihood increases with the child's age and if the mother has been exposed to any type of violence.

Table 4 presents the coefficients and significance levels of the independent variables included in the binary logistic regression model. In this analysis, the mediating variable represents the wife's/mother's exposure to physical, sexual, or emotional violence. The estimated value of this

variable was 0.995, which was estimated using the following logistic regression equation No. 5:

$$Z = \frac{e^{6.01-2.63*X2-1.03*X3+0.133*X4-0.08*X7-0.01*X8}}{1+e^{6.01-2.63*X2-1.03*X3+0.133*X4-0.08*X7-0.01*X8}} \quad (5)$$

The results indicate that women are less likely to be exposed to any form of violence if their husbands do not use drugs or consume alcohol and they are not afraid of their husbands, and if their family's living standards, educational level, and husband's age increase.

Table 4. Coefficients for external variables affecting the wife/mother's exposure to any type of physical / sexual/ emotional violence (mediating variable)

Exogenous variables	Coefficient
Mother age	-0.05
Husband's use of drugs or alcohol consumption: (Ref: does not drink alcohol or use drugs)	-2.63***
Afraid of husband	-1.03***
Region: (Ref: Upper Egypt)	0.13*
Wealth quintile	-0.19***
Mother work status: (Ref: working for cash)	-0.1
Number of living children	0.04
Mother education level	-0.08**
Age of husband	-0.01**
Constant	6.01***

* p-value <0.1 **p-value <0.05 *** p-value <0.001

Source: Prepared by researchers using the data of EFHS 2021.

This section examines the effect of external variables on the likelihood of a child being exposed to any type of violent disciplinary practices, psychological, physical, or severe physical punishment, for each external variable. The scale of external variables varies; they are either quantitative or binary variables. To examine the effect of quantitative variables, the probability value of the dependent variable will be calculated after increasing the average value of the variable by one unit. For binary variables, the effect will be measured by calculating the change in the probability value of the dependent variable by changing the value of the variable from zero to one, based on Equation 3. Table 5 shows the probability of a child being exposed to violent disciplinary practices for each external variable after changing it while holding the other external variables constant.

Table 5. The probability of a child being exposed to violent disciplinary practices according to changes in external and mediating variables

Exogenous variables	Probability of		
	Psychological aggression	Physical punishment	Severe physical punishment
Gender of a child: (Ref: male)	0.9397**	0.8698***	0.7896***
Age of a child	0.9581***	0.8984	0.8586**
School enrolment of a child: (Ref: enrolled in school)	0.9279**	0.9123**	0.8122
Mother age	0.9423	0.8811***	0.7994***
Husband's use of drugs or alcohol consumption: (Ref: does not drink alcohol or use drugs)	0.9556	0.9257	0.8188
Afraid of husband	0.9495	0.9066	0.8067***
Region: (Ref: Upper Egypt)	0.785***	0.8836**	0.7855***

Exogenous variables	Probability of		
	Psychological aggression	**Physical punishment**	**Severe physical punishment**
Wealth quintile	0.9446**	0.8933***	0.8178***
Mother work status: (Ref: working for cash)	0.9438	0.9104	0.8459
Number of living children	0.8508	0.9089	0.8508
Mother education level	0.9478	0.9033	0.8384
Age of husband	0.9477	0.9038	0.8391
Parental survivorship: (Ref: both alive)	0.8966**	0.877	0.785
Mediator variables			
Mother exposure to physical /sexual/emotional violence **P(y/z=0)**	**0.935**	**0.885**	**0.815**
Mother exposure to physical /sexual/emotional violence **P(y/z=1)**	**0.971**	**0.939**	**0.891**

* p-value <0.1 **p-value <0.05 *** p-value <0.001

Source: Prepared by researchers using the data of EFHS 2021.

5.1 Factors affecting the likelihood of a child being exposed to psychological aggression

Transitioning from male to female gender decreased the likelihood of a child being exposed to psychological aggression, decreasing from 0.948 to 0.940. Increasing the child's age was associated with an increased likelihood of being exposed to psychological aggression, increasing from 0.948 to 0.958. This represents an increase of approximately 1.0%, assuming all other external variables were held constant.

It is evident that when a child is not enrolled in school, the likelihood of being subjected to psychological aggression decreases from 0.948 to 0.928, a decrease of approximately 2.0%, holding other external variables constant.

It turns out that moving from the Upper Egypt category to the other regions category leads to a decrease in the probability of a child being exposed to psychological aggression from 0.948 to 0.930, a decrease of approximately 1.8%. The effect of the wealth index on the probability of a child being exposed to psychological aggression is also evident in Table 5. Moving from one category to another, meaning an increase in the standard of living by 1 unit, reduces the probability of a child being exposed to psychological aggression from 0.948 to 0.945, a decrease of 0.3%, with all other external variables held constant.

Parental survivorship is a two-sided categorical variable (both alive, father deceased). Moving from one category to another reduces the probability of a child being exposed to psychological aggression from 0.948 to 0.896, a decrease of 5.1%, with all other external variables being constant. The analysis also shows that moving from a wife/mother not being exposed to physical, sexual, or emotional violence to a wife/mother being exposed to physical, sexual, or emotional increases the likelihood of the child being exposed to psychological aggression from 0.935 to 0.971, an increase of 3.6%, holding other intermediate variables constant.

Mother's age, husband’s use of drugs or alcohol consumption, fear of the husband, mother's work status, number of children, mother's education level, and father's age are not significant factors influencing the child's likelihood of being exposed to psychological discipline.

5.2 Factors affecting the likelihood of a child being exposed to physical punishment

The analysis results show that moving from the male to the female category leads to a decrease in the probability of a child being exposed to physical punishment from 0.904 to 0.870, a decrease of approximately 5.2%, holding other external variables constant. It also shows that when a child is not enrolled in school, the probability of being exposed to physical punishment

increases from 0.904 to 0.912, an increase of approximately 0.9%, holding other external variables constant.

The analysis shows that when a mother moves from one age group to another, the probability of the child being exposed to physical punishment decreases from 0.904 to 0.881 a decrease of approximately 2.3%, holding other external variables constant. It indicates that moving from the Upper Egypt category to the remaining regions category leads to a decrease in the probability of the child being exposed to physical punishment from 0.904 to 0.884, a decrease of approximately 2.3%, holding other external variables constant.

A one-unit increase in the standard of living reduces the likelihood of a child being subjected to physical punishment from 0.904 to 0.893, a decrease of approximately 2.26%, holding other intervening variables constant. It was also observed that the child's age, the husband's use of drugs or alcohol consumption, fear of the husband, the mother's work status, the number of children, the mother's education level, the husband's age, and the parents' survival status did not significantly affect the child's exposure to physical punishment.

Finally, the results reveal that moving from a wife/mother not being exposed to physical /sexual/emotional violence to a wife/mother being exposed to such types of violence increases the likelihood of the child being exposed to physical punishment from 0.885 to 0.939, a 5.4% increase, holding other intervening variables constant.

5.3 Factors affecting the likelihood of a child being exposed to severe physical punishment

The results show that moving from the male to the female category leads to a decrease in the probability of a child being subjected to severe physical punishment from 0.840 to 0.790, a decrease of approximately 1.9%, holding other external variables constant.

It is evident that as the child's age increases, the probability of being exposed to severe physical punishment increases from 0.840 to 0.859, an increase of approximately 1.9%, holding other external variables constant. Also, it indicates that as the mother's age changes from one category to another, the probability of the child being exposed to severe physical punishment decreases from 0.840 to 0.799, a decrease of approximately 4.1%, holding other external variables constant.

The results also show that moving from a wife/mother's frequent fear of her husband leads to a decrease in the probability of the child being exposed to severe physical punishment, from 0.840 to 0.807, a decrease of approximately 3.3%, holding other external variables constant.

It shows that moving from the Upper Egypt category to the other regions category is followed by a decrease in the probability of a child being exposed to severe physical punishment, from 0.840 to 0.785, or approximately 5.5%, holding other exogenous variables constant.

Regarding the effect of the wealth index, the results indicate that a one-unit increase in the standard of living reduces the probability of a child being exposed to severe physical punishment from 0.840 to 0.818, or 2.2%, holding other exogenous variables constant. The analysis shows that variables such as the child's school enrolment, the husband's use of drugs or alcohol consumption, the mother's work status, the number of children, the mother's education, the father's age, and the parents' survival status do not significantly affect a child's exposure to severe physical punishment.

Finally, the analysis results indicate that moving from a wife/mother not being exposed to physical /sexual/emotional violence to a wife/mother being exposed to such violence increases

the probability of the child being exposed to severe physical punishment, from 0.815 to 0.891, an increase of 7.7%, with other intermediate variables held constant.

6. Discussion and conclusion

This study examines the factors influencing violent discipline practices against children in Egypt, using data from the 2021 Egyptian Family Health Survey. It addresses physical, severe physical, and psychological aggression used on the child, focusing on how family, social, and economic variables influence these practices. Psychological aggression refers to yelling, screaming, or shouting at a child, as well as calling them offensive names, such as "stupid" or "lazy". Physical punishment is an act intended to cause physical pain or discomfort rather than physical harm. Physical punishment is defined as shaking a child, hitting or slapping them on the hand, arm, or leg, hitting them on the bottom or anywhere else on the body with a hard object, slapping them on the bottom with a bare hand, hitting or slapping them on the face, head, or ears, or repeatedly hitting a child as hard as possible.

The generalized structural equations method was applied, which includes several external independent variables (child gender, child age, child enrolment in education, number of children, mother's education, mother's work, husband's age, region, wealth index, husband's use of drugs or alcohol consumption, and parental survivorship). The mediating variable is the mother's exposure to any type of violence by her husband (physical, sexual, or emotional). The effect of these variables on the dependent variable is measured, which is the type of punishment used with the child.

The analysis showed widespread use of all forms of violent discipline (physical, severe physical, and psychological). A statistically significant direct effect of the child's gender, region, and wealth index on the likelihood of experiencing physical, severe physical, or psychological violence. The Wealth index also had an indirect effect on the likelihood of a child experiencing violence through its effect on the likelihood of the mother experiencing any form of violence.

In addition, there is evidence that violence against women and violence against children are interrelated, as mothers who experienced violence from their husbands were more likely to use violent punishment methods against their children which is consistent with studies by (Lim et al., 2022), (Fang and Corso, 2007) and (Antai et al., 2016).

Children from different socioeconomic backgrounds are exposed to different punishment methods. As Previous studies have shown that socioeconomic conditions shape parental attitudes toward the use of different punishment methods, the study found that a low family standard of living makes children more vulnerable to violent punishment methods, which is consistent with the studies of (Machado et al., 2007) and (Conger, 2020).

The study indicated that the child's gender is an important factor influencing the type of violent practices parents use, Parents differ in their use of parenting strategies for boys and girls. Boys are more likely than girls to respond aggressively and negatively to parental supervision, while girls are more likely to be compliant. These gender differences in child behavior may prompt parents to use stricter disciplinary methods with their male children, this is consistent with a study of (Abrahamyan et al., 2024).

The results of this paper are inconsistent with other studies on the significance of the number of children in a family (Douki et al., 2013) and (Antai et al., 2016), as this variable did not have a significant effect on a child's exposure to violent punishment within the family. On the other hand, the study found no significant direct effect of the husband's drug use, which is contrary to the findings of (Chaffin et al., 1996).

There is a statistically significant direct effect of a child's age on the likelihood of being subjected to severe physical or psychological aggression. In addition, school enrolment is strongly associated with an increased likelihood of being subjected to psychological aggression. Furthermore, there is a statistically significant direct effect of a mother's fear of her husband on the likelihood of a child being subjected to severe physical punishment. It also has an indirect effect on the likelihood of a child being subjected to punishment through its effect on the likelihood of the wife being subjected to any form of punishment. There is also a statistically significant direct effect of parental survivorship on the likelihood of a child being subjected to psychological aggression.

There is no statistically significant direct effect of the husband's drug use, the mother's level of education, or the number of children on the likelihood of being exposed to any type of punishment. However, it does have an indirect effect on the likelihood of a child being exposed to any type of punishment. There is no significant direct or indirect effect of the mother's work or the number of children on the child's exposure to any type of punishment.

Finally, the analysis provides strong evidence of the need for interventions to reduce these harmful practices. The study also identified important factors associated with violent disciplinary practices, which can be used to design interventions to change parenting practices.

7. Policy Recommendations

Violent punishment of children is associated with multiple consequences, including physical injuries and health consequences, short- and long-term emotional harm, harm to cognitive development and educational outcomes, damage to the parent-child relationship, and links to lifelong violence and aggression. By addressing this form of violence, we can break intergenerational cycles of violence through the following:

- Eliminating violence against children requires changing entrenched behavioral patterns that are considered acceptable, particularly as a form of discipline within families; mobilizing all stakeholders, including community and religious leaders, to raise awareness and promote positive social norms will help dispel entrenched beliefs that justify violence.
- Programs that educate parents about nonviolent discipline methods help change parents' beliefs and behaviors toward violent discipline practices.
- Developing an integrated national strategy to protect children from violence at all levels and ensuring its implementation. This strategy should also include social protection and psychological support programs for mothers exposed to violence.
- Providing Support for parents and caregivers by providing training for parents, especially young parents and first-time parents.
- Developing educational and life skills, such as ensuring children’s enrolment in schools and providing training to develop life and social skills.
- Designing special policies for groups most vulnerable to violent practices, such as low-income families and families with addicted fathers, to provide rehabilitation and reintegration programs for fathers, in addition to providing financial and psychological support for the entire family.

8. Limitation

The data may underestimate the use of different methods to assess children's behavior, as the respondent may not have been informed from the household questionnaire all the situations in which the child's behavior was assessed during the month prior to the interview. Furthermore, reporting violent practices against children, especially when perpetrated by a family member,

is socially undesirable because it may lead to criticism from the child's grandparents or other relatives. This is the most significant limitation of the study, along with the short reference period (one month) in which the disciplinary practices used by caregivers to control children's behavior were investigated. It also included very young age groups (1-2 years), which may lead to underestimations, as this age group is less likely to be exposed to violent punishment than older groups.

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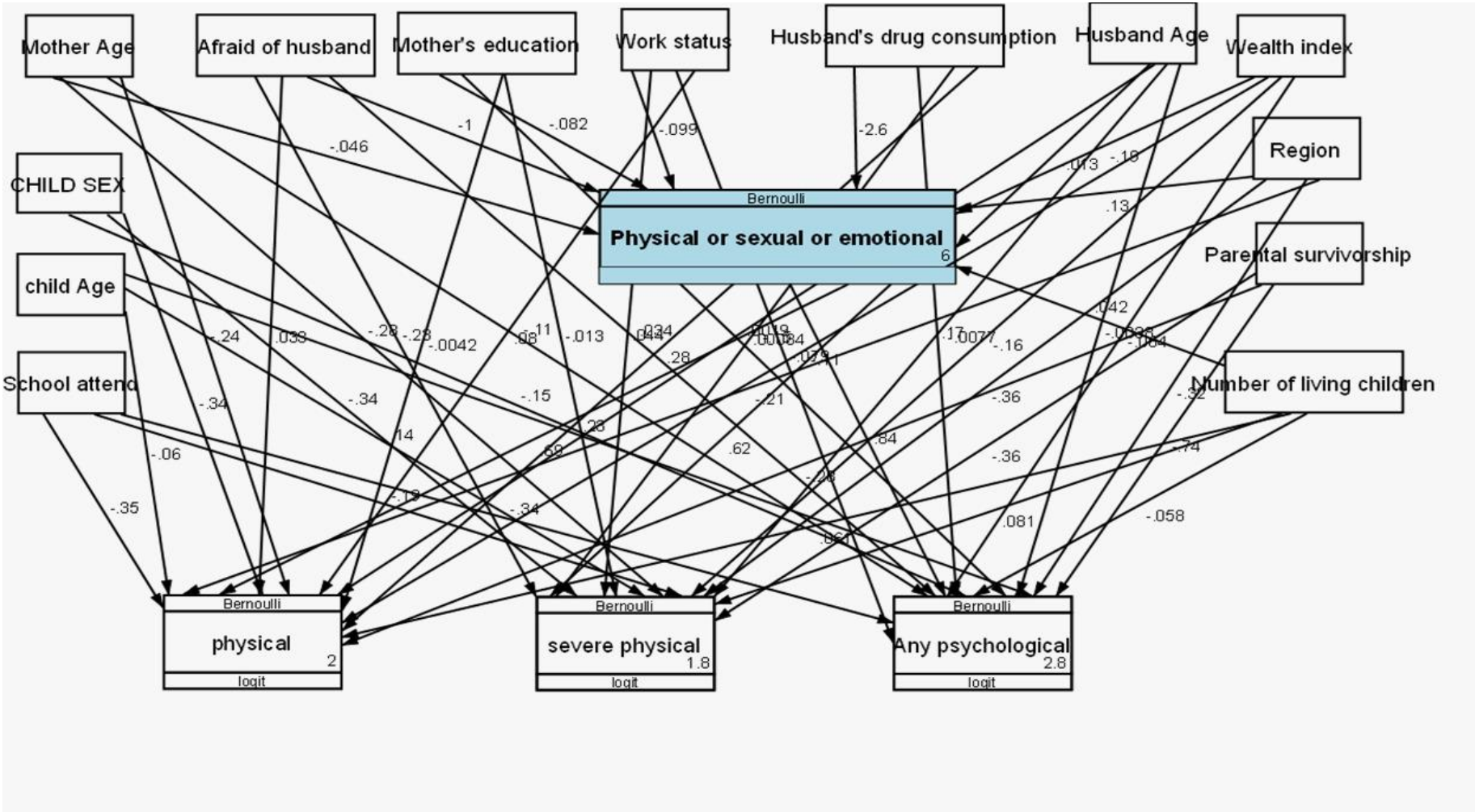
Appendix


Mother Age
Afraid of husband
Mother's education
Work status
Husband's drug consumption
Husband Age
Wealth index
CHILD SEX
Region
child Age
Parental survivorship
School attend
Number of living children
Bernoulli
Physical or sexual or emotional
6
Bernoulli
physical
2
logit
Bernoulli
severe physical
1.8
logit
Bernoulli
Any psychological
2.8
logit