

Intimate Partner Violence Against Brazilian Mothers is Associated With Their Children's Lower Quality-of-Life Scores: A Cross-Sectional Study During the COVID-19 Pandemic

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ABSTRACT: The COVID-19 pandemic led to family and routine reorganization, triggering social problems. Women were further exposed to domestic violence, especially intimate partner violence (IPV), with consequences to their and their children's health. However, few Brazilian studies address the issue, especially considering the pandemic and its restrictive measures. The objective was to verify the relationship between mothers'/caregivers' IPV and their children's neuropsychomotor development (NPMD) and quality of life (QOL) during the pandemic. Seven hundred one female mothers/caregivers of children (0-12 years old) responded to the online epidemiological inquiry. NPMD was investigated with the Caregiver Reported Early Development Instruments (CREDI-short version); QOL, with the Pediatric Quality of Life Inventory (PedsQL™); and IPV, with the Composite Abuse Scale (CAS). The independence chi-square test was used, with Fisher's exact statistics, in SPSS Statistics 27®. Children whose mothers were exposed to IPV were 2.68 times as likely to have a "low" QOL score ($\chi^2(1) = 13.144$, $P < .001$; $\phi = 0.137$). This indicates a possible environmental influence on the children's QOL, which may have been aggravated by strict social distancing during the COVID-19 pandemic.

KEYWORDS: Child development, COVID-19, quality of life, intimate partner violence

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Background

The COVID-19 pandemic caused many social problems and health conditions, including an up to 30% increase in records of domestic violence in various countries like China, the United States, Australia, the United Kingdom, and France.¹ The impacts of the pandemic were even more harmful in low- and middle-income countries, among which Brazil was one of the most affected, recording the second largest absolute number of deaths from COVID-19 on the planet.² Regarding domestic violence, cases in Brazil are estimated to have increased by 50%.^{3,4}

Domestic violence is a side effect of the social distancing measures during the pandemic, which required family reorganization and overall changes in routine, creating new circumstances of tension and stress at home.⁵ Women and children are the most vulnerable ones to domestic violence, and intimate partner violence (IPV) against women is one of the most prevalent types of domestic violence worldwide.^{6,7} When social distancing was strictest during the pandemic, in the most critical and restricted periods, children stayed mostly at home with their mothers, fathers, relatives, and/or caregivers, who worked from home or were kept from working. This created an overload on routine conciliation and demands at home and changed the family income and the care for children and relatives, along with specific care to avoid COVID-19 infection. These changes in the family dynamics tend to be unequal, depending on social markers such as gender, skin color, and socioeconomic conditions.⁸

Regarding vulnerability to violence in contexts of low and middle income, social distancing measures—especially in small homes, with few rooms, and more people—made victim(s) spend more time with the aggressor and decrease social contact with others who could be a support network, such as friends and/or family, making it more difficult for them to find help and even safely report violence.⁴

Exposure to IPV can have lasting effects on the social, emotional, and neurological development of children⁹ with increased consequences for children who experience IPV and remain only in parental care, when compared to those who have additional non-parental care.¹⁰ During the pandemic, the social isolation can therefore, reinforce the additional risk for children exposed to IPV, considering that kindergarten and schools were closed.

Considering the biopsychosocial (BPS) health model presented in the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) (2015), child development is a health condition that depends on the complexity of the dimensions of functioning and contextual factors, relying on the children's relationship with the environment and received stimuli (tasks),¹¹ relating to the concepts of well-being¹² and quality of life (QOL). In Brazil, although there is a free and universal public health system, several access' inequalities persist, including for child health care.¹³ This may represent an additional risk, especially for those more vulnerable, that face barriers to access healthcare.



Child health in Brazil is guided by the National Policy for Comprehensive Child Healthcare (PNAISC, in Portuguese), following the commitment to the Sustainable Development Goals (SDG) and the Early Childhood Legal Framework. Its strategic axes include the children's health status and well-being, which must go beyond surveilling growth and development—they must also count on initiatives to address violence and violent settings, promoting a culture of peace.

However, delay and risk factors for neuropsychomotor development (NPMD) are a striking reality, especially in low-income countries like Brazil, which may impair children's development process into adulthood.¹⁴

In this regard, children's comprehensive NPMD and QOL require attention that encompasses health, education, safety, responsive care, and early intervention, based on family interactions, and supported by an adequate environment that enables such interactions.¹⁵

Various international studies point out that IPV against mothers/caregivers negatively influences children's NPMD, affecting neurological, psychomotor, behavioral, and language aspects.^{16,17} However, there is a scarcity of Brazilian studies addressing such influence, especially considering the COVID-19 pandemic and its restrictive measures.

Hence, the objective of this research was to verify the relationship between IPV against mothers/caregivers and their children's NPMD and QOL during the COVID-19 pandemic, based on the hypothesis that maternal exposure to IPV is associated with the children's worse NPMD and QOL scores.

Methods

Design

This study is an epidemiological inquiry named “#CHILDREN AT HOME: Health, development, and quality of life of Brazilian babies and children during the coronavirus (COVID-19) pandemic”, conducted from July to September 2020. It aimed to verify the possible relationship between Brazilian children's NPMD and QOL and their mothers'/caregivers' exposure to IPV, from a BPS perspective, as indicated in the ICF.¹⁸ The research followed the recommendations in Strengthening the Reporting of Observational Studies in Epidemiology (STROBE Statement) for cross-sectional studies with a convenience sample (the sample calculation indicated the need for 385 responses nationwide).

Participants

The sample included women above 18 years old, mothers of 0 to 12-year-old children, living in Brazil, speaking Portuguese fluently, and having access to the Internet via either mobile phones or computers to respond to the research instruments.

Measures

Two child NPMD and QOL instruments were used, as well as a questionnaire on IPV against their mothers/caregivers.

Children were characterized with a questionnaire on general data, like age and race/color. Mothers/caregivers were surveyed with a questionnaire on the region of residence, educational attainment, marital status, and income.

NPMD

NPMD was investigated with the Caregiver Reported Early Development Instruments (CREDI-short version). This quick application form (0-5, 6-11, 12-17, 18-23, 24-29, and 30-35 months) has been validated in Brazil (reliability average 84%; Cronbach's alpha internal consistency/inter-item reliability >.80 for the CREDI within each of the 6 age groups) and makes population surveys on early childhood development (<3 years), approaching motor, cognition, socioemotional, language, and mental health domains.¹⁹ This instrument does not diagnose,²⁰ but obtains reference population parameters for NPMD.

QOL

Children's QOL was assessed with the Pediatric Quality of Life Inventory (PedsQL™). This is a low-cost, quick questionnaire (taking an average of 5 minutes to administer),²¹ with permission for online use from Mapi Research Trust (<http://www.mapi-trust.org>) in the versions translated to Portuguese with good validity and reliability (internal consistency reliability coefficients >0.80 for total score of all age of PedsQL™).²¹⁻²³ The following versions were used: PedsQL™ Infant Scales™ (a) for 1 to 12-month-old babies, (b) 13 to 24-month-old babies²⁴; PedsQL™-Version 4.0 Short Form (SF15)—Portuguese (Brazil): (c) for 2 to 4-year-old children,²¹ (d) 5 to 7-year-old children, and (e) 8 to 12-year-old children.^{21,23} QOL is measured in the following dimensions: Physical Functioning (PF), Emotional Functioning (EF), Social Functioning (SF) or Social Activities (SA), Cognitive Functioning (CF) or School Functioning (ScF), and total score; for children under 2 years old, there is also Physical Symptoms (PS). Responses are given on a 5-level Likert scale²² regarding the condition and/or problem (0=never to 4=almost always), which are transposed to an inverted 0 to 100 scale (0=100; 1=75; 2=50; 3=25; 4=0),²¹ calculating each dimension score and the total score. The scale does not have a normative score; higher scores suggest better QOL.²¹

Since CREDI and PedsQL™ do not have a cutoff score to classify the sample respectively regarding their NPMD and QOL and analyze the correlation with IPV scores, the sample children were classified based on a z-score: 0=the sample's mean score, ± 1 deviation (medium), -1 =below the reference (low), and $+1$ =above the reference (high), based on the age group on each scale. Children with medium and high scores were grouped (high/medium) for later analysis and comparison with low-score children. One standard deviation (SD) from the sample mean has already been used as a cutoff reference to analyze QOL in PedsQL™.²⁵

IPV

IPV identification, type, and severity were verified with the women's voluntary response to the Composite Abuse Scale (CAS),^{26,27} translated and cross-culturally adapted to Brazilian Portuguese.²⁸ CAS has 30 questions on abusive experiences in intimate relationships, whose frequency is categorized on a Likert scale (0 = never; 1 = only once; 2 = a few times; 3 = once a month; 4 = once a week; 5 = daily), whose total score ranges from 0 to 150 points. Its questions are organized into 4 categories: Severe Combined Abuse (SCA), which encompasses sexual violence and femicide attempts; Physical Abuse (AP); Emotional Abuse (EA); and Harassment (HS), which typify the violence they suffered. The recommended cutoff in CAS is a total IPV score of ≥ 7 points,²⁷ which was used in this study to indicate "exposed" to IPV. There are also specific cutoff scores for each type of violence: $SCA \geq 1$; $PA \geq 1$; $HS \geq 2$; and $EA \geq 3$ points.

The CAS has been recognized as a criterion standard research tool to measure IPV and it has been shown to have content, construct, criterion, and factorial validity.²⁶ The internal consistency reliability was 0.85 or above, each subscale has internal reliability of 0.90 or more, and an all item-total score correlations of .6 or above.²⁶

Data collection

The study questionnaires were made available with a Google Forms link and sent to participants in different parts of Brazil. They were invited to participate in the research via e-mail lists, publicization on the University's website, and via social networks, comprising a convenience sample. The snowball technique²⁹ was also used, in which respondents indicate other study participants. The collection was made in 2020, when social distancing was instituted by the Quarantine Law (Law no. 13.979/2020)³⁰ to stop COVID-19 advancement, with the strictest social isolation rules in Brazil.

Analysis strategy

The association between mothers'/caregivers' IPV (CAS—"not exposed" or "exposed") and children's NPMD (CREDI) and QOL (PedsQL™—"high/medium" or "low") was analyzed with an independence (2×2) chi-square test; significance was measured with Fisher's exact statistics,³¹ the effect size, with the phi-test (ϕ) in SPSS Statistics 27®, and the odds ratio was calculated in significant relationships.

Ethics

The study was approved by the Research Ethics Committee of the Federal University of Paraná (CAAE: 32679520.4.0000.0102; evaluation report: 4.146.615). All participants were invited and voluntarily participated, having signed an

informed consent form. The study complied with WHO guidelines³²⁻³⁴ for research on violence against women.

Results

Most 0 to 12-year-old study children ($n=701$) were white (82.9%) (Table 1). NPMD classification with CREDI identified 14.5% of children with a "lower" score than the rest of the sample, while 16.1% had a "low" QOL score with PedsQL™. Also, 8 to 12-year-old children had lower QOL scores than the other age groups, particularly in EF and ScF. NPMS and QOL classification with z-score in relation to the sample's mean made it possible to analyze the association with their mothers'/caregivers' IPV scores.

In general, the research mothers/caregivers ($n=701$) (Table 2) were young women (34.6 ± 6.4 years), mostly living in the South Region of Brazil (75.2%), having attended school for more than 12 years (higher education or postgraduation: 71.2%), married or in a domestic partnership (84.4%), and earning more than 5 minimum wages (MW) (46.4%). Regarding IPV with CAS, 10.7% of women/mothers were "exposed" to IPV, most frequently involving Emotional or Psychological Abuse (100%).

On the other hand, when IPV-exposed mothers were asked about their children (Table 3), only 2.7% reported they witnessed domestic violence. The age, educational attainment, and marital status of mothers both exposed and not exposed to IPV are shown in Table 3, as well as the information on children's NPMD and QOL in relation to maternal IPV exposure.

Regarding the main study objective, no significant association was found (Table 4) between mothers'/caregivers' IPV-exposure and children's NPMD ($\chi^2(1)=0.284$, $P=.594$; $\phi=0.033$). However, the relationship between IPV and children's total QOL score was confirmed in the study sample ($\chi^2(1)=13.144$, $P<.001$; $\phi=0.137$). Children whose mothers were "exposed" to IPV were 2.68 times as likely to have a "low" QOL score—that is, lower scores than the reference medium/high in the sample.

Discussion

The results of this study indicate that IPV is present even in more favorable socioeconomic contexts. Due to the social distancing measures and the online format of the research, there was a significant number of female respondents earning >5 MW and with high educational attainment. Hence, most mothers in this study had greater access to resources. Nonetheless, 10.7% were "exposed" to IPV, especially EA.

Other studies before the pandemic had already reported EA as the most prevalent form of violence, with 10% to 69% prevalence worldwide³⁵ and 29% to 56% prevalence in Brazil.^{36,37} During the COVID-19 pandemic, EA was likewise identified as the most prevalent (19%) type of violence³⁸ in a study conducted in Bangladesh. More developed countries, like Germany, had lower indicators for this type of violence (7.67%), although

Table 1. Characterization per age group, race/color, neuropsychomotor development, and quality of life of 0 to 12 year-old children during the COVID-19 pandemic (Brazil, 2020).

CHILDREN'S RACE/ COLOR	N (%)						
White	581 (82.9)						
Multiracial	99 (14.1)						
Black	14 (2.0)						
East Asian/ Indigenous	7 (1.0)						
NPMD*	N (%)	CREDI*					
Age group		<i>(Adjusted raw score)</i>		<i>(Age-specific standardized score)</i>			
0-5m	57 (21.8)	8.3 ± 4.2		33.9 ± 4.0			
6-11 m	53 (20.2)	13.6 ± 3.6		42.4 ± 3.7			
12-17 m	44 (16.8)	12.3 ± 4.1		49.8 ± 3.1			
18-23 m	42 (16.0)	9.7 ± 4.3		53.8 ± 2.5			
2y-2y 5m	28 (10.7)	12.6 ± 3.8		56.8 ± 1.9			
2y 6m-2y 11 m	38 (14.5)	15.2 ± 3.5		58.4 ± 2.0			
0-2y 11 m (Total)	262 (100)						
SAMPLE CLASSIFICATION	MEDIUM/HIGH	LOW					
	N (%)	N (%)					
NPMD—CREDI*	224 (85.5)	38 (14.5)					
QOL—PedsQL™	588 (83.9)	113 (16.1)					
QOL	N (%)	PEDSQL™ DOMAINS					
		PHYSICAL FUNCTIONING	PHYSICAL SYMPTOMS**	EMOTIONAL FUNCTIONING	SOCIAL FUNCTIONING	COGNITIVE FUNCTIONING	TOTAL
0-12m	120 (17.12)	87.7 ± 11.4	83 ± 10.1	70.6 ± 15.6	85.2 ± 18.9	67 ± 27	78.7 ± 12.0
13-23m	76 (10.84)	91.2 ± 9.3	89 ± 7.3	67.8 ± 14.9	86.1 ± 13	73.4 ± 19.6	81.5 ± 8.5
2-4y	217 (30.96)	90.7 ± 14.5	NA	65.8 ± 16.7	84.4 ± 17.2	84 ± 17.6	81.2 ± 11.6
5-7y	145 (20.68)	84.6 ± 17.2	NA	60.8 ± 18	83 ± 19.2	58.8 ± 26.2	71.9 ± 14.1
8-12y	143 (20.40)	76 ± 21.1	NA	59.6 ± 19.1	83.2 ± 17.8	57.1 ± 25.2	69 ± 14.7
0-12y (Total)	701 (100.00)	86 ± 16.7	85.3 ± 9.6	64.6 ± 17.5	84.2 ± 17.6	68.3 ± 25.7	76.4 ± 13.6

Abbreviations: CREDI, caregiver reported early development instruments; m, months; NA, not applicable; NPMD, neuropsychomotor development; PedsQL™, pediatric quality of life inventory; QOL, quality of life; y, years.

*Only for children under 3 years old.

**Only for children under 2 years old.

with the aggravating circumstance that one of the risk factors most associated with IPV was the presence of small children in the home.³⁹

In Brazil, soon before this research began, the National Ombudsman for the Human Rights identified from March 1

to 25, 2020, an approximately 18% increase in violence reports.^{40,41} According to data from the Public Ministry, there was a 50% increase in IPV cases in Rio de Janeiro in the first week of the pandemic, while Paraná identified a 15% increase in such reports.⁴

Table 2. Characterization of types of intimate partner violence against mothers (n=701) during the COVID-19 pandemic (Brazil, 2020).

AGE (Y)	34.6 + 6.4
Brazil—Regions	n (%)
Northeast	48 (6.8)
North	7 (1)
Central-West	35 (5)
Southeast	84 (12)
South	527 (75.2)
Brazil (Total)	701 (100)
Educational attainment	
0-8 y	40 (5.7)
9-11 y	162 (23.1)
>12 y	499 (71.2)
Marital status	
Single or other	66 (9.5)
Divorced/Separated/Widow	43 (6.1)
Married/Domestic partnership or cohabiting	592 (84.4)
Family income	
Up to 1 MW (<R\$ 1045)	87 (12.4)
>1-5 MW (R\$ 1045-R\$ 5225)	289 (41.2)
>5 MW (>R\$ 5225)	325 (46.4)
IPV	
Exposed (CAS ≥ 7)	75 (10.7)
IPV type	
Severe combined abuse (SCA)	39/75 (52)
Physical abuse (PA)	43/75 (57.3)
Emotional abuse (EA)	75/75 (100)
Harassment	26/75 (34.7)

Abbreviations: CAS, composite abuse scale; IPV, intimate partner violence; MW, minimum wages; R\$, values in Brazilian reais (US\$ 1 ≈ R\$ 5, in June 2020).

These women, at the time of the study, lived the pandemic caring for their children while there was great tension worldwide, as no vaccines were yet available. Nonetheless, only 2 out of 75 women (2.7%) who were exposed to IPV, reported that their children witnessed violence situations. It is difficult to consider that, during the pandemic and increased time families spent together, children under the care of these mothers did not witness violence, as stated by the respondents. One of the issues we raise is regarding how these women conceptualize violence, for example, if it is only physical, or if it includes other

types of abuse. These conceptions may influence the small numbers of children witnessing violence. Unfortunately, our instrument was limited capturing these subjective perceptions of violence. From the perspective of the ecological model, violence is generated by the synergy of community, social, individual, and relational dimensions, affecting the health and well-being of the person who suffers violence and the society. Hence, it must be understood and addressed as a public health issue.⁴²

On the community level, the pandemic and distancing measures decreased the social cohesion and access to social services (churches, daycare centers, schools, social work, community health centers), hindering their access to help or protection. Moreover, prevention actions were limited, as healthcare services were focused on COVID-19.⁴ Therefore, inequities became relevant,⁴³ especially regarding gender-related IPV.⁴¹ In this sense, Vieira et al⁴⁰ state that “*Enjoying the home as a safe environment that provides rest and protection should be an acquired basic right, although, in reality, it is still a privilege that depends on class and gender.*” (p. 3)

In the relational dimension, the greater time mothers and children spent together at home possibly created greater contact with and time of exposure to the aggressor,³⁸ which along with social restrictions made it more difficult to seek support from close people like friends and family.⁴ Thus, even if children were not direct victims of violence, they indirectly experienced it in their everyday life³⁵ and it is possible that 60% to 75% of families with IPV against mother have children who are also abused.⁴⁴ Marques et al⁴ stated that this problem is even more evident in low-income families, which had little representativity in this study. As this was online research, it may indicate access difficulties on the part of many victims. Moreira and Pinto da Costa⁴³ point out that in chauvinist cultures like Brazil, women's high educational attainment may pose an additional risk of IPV, which was evident in this study—IPV was present, even though a significant portion of the sample had higher education or postgraduation degrees.

In the individual dimension, some factors are recognized as triggers of increased violence on the part of aggressors: stress for fear of getting sick, uncertainty about the future, restricted social interaction with other people, reduced income, and drug and/or alcohol use.^{4,38} On the other hand, women, especially mothers/caregivers, were overloaded, and some depended financially on others. Hence, they tried to minimize severe aggressions against them and others under their care, thus diminishing their possibilities of avoiding conflicts, and making them more susceptible to all types of violence, especially psychological and sexual abuse. Fear of violence also affects children, who are limited to the home, which is another factor that hinders the mothers' effort to find help.^{4,35}

Considering the multidimensionality of violence, it is relevant to measure the relationship of mothers' IPV with children's QOL, which is likewise multidimensional. The

Table 3. Socioeconomic characterization of mothers and children per mothers'/caregivers' exposure to intimate partner violence during the COVID-19 pandemic (Brazil, 2020).

	SUFFERED INTIMATE PARTNER VIOLENCE (CAS)			
	YES (N = 75)		NO (N = 626)	
	N (%)	95% CI	N (%)	95% CI
Mothers' variables				
Age				
18-29 y	27 (36.0)		121 (19.3)	
30-49 y	46 (61.3)		496 (79.2)	
≥50 y	2 (2.67)		9 (1.44)	
Age—Mean (SD)	32.1 ± 7.1	[30.4; 33.7]	34.9 ± 6.3	[34.4; 35.4]
Region of Brazil				
North	1 (1.3)		6 (1.0)	
Northeast	7 (9.3)		41 (6.5)	
Central-West	6 (8.0)		29 (4.6)	
Southeast	3 (4.0)		81 (12.9)	
South	58 (77.3)		469 (74.9)	
Marital status				
Single or other	22 (29.3)		43 (6.9)	
Divorced/Separated/Widow	8 (10.7)		35 (5.6)	
Married/Domestic partnership or cohabiting	45 (60.0)		547 (87.4)	
Educational attainment (years in school)				
0-8 y	6 (8.0)		33 (5.3)	
9-11 y	31 (41.3)		132 (21.1)	
>12 y	38 (50.7)		461 (73.6)	
Income				
Low: up to 1 MW (< R\$ 1045)	0 (0.0)		0 (0.0)	
Medium: 1-5 MW (R\$ 1045-R\$ 5225)	54 (72.0)		322 (51.4)	
High: >5 MW (> R\$ 5225)	21 (28.0)		304 (48.6)	
Lost their job during the pandemic				
No	61 (81.3)		578 (92.3)	
Yes	14 (18.7)		48 (7.7)	
Receives welfare or benefit				
No	56 (74.7)		620 (99.0)	
Yes	17 (22.7)		6 (1.0)	
Children's variables				
NPMD* (CREDI)	n=28*		n=234*	
High/Medium	23 (82.1)		201 (85.9)	

(Continued)

Table 3. (Continued)

	SUFFERED INTIMATE PARTNER VIOLENCE (CAS)			
	YES (N = 75)		NO (N = 626)	
	N (%)	95% CI	N (%)	95% CI
Low	5 (17.9)		33 (14.1)	
Quality of life (PedsQL™)	n=75		n=626	
High/Medium	52 (69.3)		536 (85.6)	
Low	23 (30.7)		90 (14.4)	
QOL scores (PedsQL™)				
Physical functioning	81.4 ± 17.7	[63.7-99.1]	86.5 ± 16.5	[70-100]
Physical symptoms** (<2y)	81.3 ± 10.8	[70.5-92]	85.8 ± 9.4	[76-95.1]
Emotional functioning	57.1 ± 20.1	[37-77.2]	65.5 ± 17	[48.5-82.5]
Social functioning/Social activities	76.6 ± 19.7	[57.2-96.5]	85.1 ± 17.2	[67.9-100]
Cognitive functioning/School activities	65 ± 29.8	[35.2-94.7]	68.7 ± 25.2	[43.5-93.8]
Total	70.5 ± 15.9	[54.6-86.4]	77.1 ± 13.1	[63.9-90.2]
Children witness violence	2 (2.7)		4 (0.6)	

Abbreviations: CREDI, caregiver reported early development instruments; MW, minimum wage; PedsQL™, pediatric quality of life inventory; R\$, values in Brazilian reais (US\$ 1 ≈ R\$ 5, in June 2020).

*Only for children under 3 years old.

**Only for children under 2 years old.

Table 4. Relationship between mothers'/caregivers' intimate partner violence and children's neuropsychomotor development and quality of life (Brazil, 2020).

NPMD (CREDI) CHILDREN <3Y OLD	IPV (CAS) MOTHERS/CAREGIVERS		χ^2 (DF)	P	ϕ
	EXPOSED	NOT EXPOSED			
High/Medium	23	201	0.284 (1)	.594	0.033
Low	5	33			
QOL (PedsQL™) children 0-12y old					
High/Medium	52	536	13.144 (1)	<.001*	0.137
Low	23	90			

Abbreviations: CAS, composite abuse scale; CREDI, caregiver reported early development instruments; DF, degrees of freedom; IPV, intimate partner violence; NPMD, neuropsychomotor development; PedsQL™, pediatric quality of life inventory; QOL, quality of life.

χ^2 =chi-square; Phi-test (ϕ).

*P<.001.

hypothesis of a relationship between mothers' IPV exposure and children's QOL was confirmed with the z-score based on PedsQL™, using the sample as a reference. Thus, children whose mothers were exposed to IPV according to CAS were more likely to have "lower" QOL scores than their peers whose mothers were not exposed to IPV.

Besides these issues identified in the pandemic, there is evidence that children exposed to violence may have impaired psychological and social development and school difficulties

and even develop behavioral patterns in which they repeat the violence they experienced.^{35,43,45} These situations were seemingly aggravated during the pandemic.⁴⁵

Quick self-administered tools like CREDI, PedsQL™, and CAS can help professionals and researchers find further and better information and develop public policies.

Even though this study could not present causal relationships, and children's NPMD was not correlated with mothers' IPV, follow-up studies are essential. Furthermore, this inquiry

took place in 2020, whereas NPMD is a continuous process. Since CREDI is a population instrument that screens children under 3 years old, the sample size for this instrument was also smaller, which may have influenced possible associations.

Picket et al⁴⁶ cite the following 10 adverse childhood experiences: 1. Physical abuse; 2. Verbal abuse; 3. Sexual abuse; 4. Physical neglect; 5. Emotional neglect; 6. Paternal alcoholism; 7. Maternal IPV; 8. Imprisoned relative; 9. Relative diagnosed with a mental disease; 10. Parents' divorce. Hence, in addition to the existing risk issues, the pandemic, and its restrictions, violence exposure was additional adversity, identified in 10.7% of mothers and consequently their children.

In this sense, professionals from different sectors must implement policies, initiatives, and surveillance of IPV cases as a health strategy to be reinforced and carefully followed up to reduce restrictions on NPMD—especially as social relations, schools, and health services return to “normal.”^{45,46} Initial intervention studies with teleconsultation aimed to identify situations and follow-up in Australia and found positive results—which could be implemented as an additional alternative to in-person services.^{43,47}

Some information systems and indicators report lower violence numbers, which possibly reflect underreporting.⁴¹ This is a problem hidden behind the victims' access difficulties. Chronic IPV underreporting before COVID-19 stands out, as less than 40% of women in Brazil reported such crimes or sought any type of help.⁴⁸

The limitations of the study include its online format. Although it helped reach all states in the country and was the feasible means of researching during the pandemic, more vulnerable parts of society are prevented from participating. Hence, actual IPV numbers may be even higher.

Conclusions

The first hypothesis in this study—that mothers'/caregivers' IPV exposure would be significantly associated with their children's NPMD—was not confirmed. On the other hand, the hypothesis of a relationship between IPV exposure and QOL scores was identified, as children whose mothers were “exposed” to IPV were 2.68 as likely to have “low” QOL scores. This indicates possible environmental and personal contextual interferences on children's QOL in the families that participated in this study, which may have been aggravated by strict social distancing during the COVID-19 pandemic.

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Author Contributions

TRM, LBA, VLI and MCS have made a substantial contribution to the concept and design of the article, acquisition, analysis, interpretation of data for the article. JCR and MA have made a substantial contribution to the analysis and interpretation of data for the article.

Ethics Approval and Consent to Participate

The research complied with resolutions on human study ethics and Resolution 466/12 of the Brazilian National Health Council and was approved by the Research Ethics Committee of the Federal University of Paraná (CAAE: 32679520.4.0000.0102; evaluation report no. 4.146.615).

Number of Identification/Approval From the Research Ethics Committee

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