

Factors associated with high-risk of maltreatment in mother-child relationship

-Data analysis of mothers and children placed in maternal and child living support facilities-

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Abstract: A national survey was conducted in 2008 to collect data on families placed in maternal and child living support facilities. We used this data to identify mothers who have experienced DV (domestic violence) and children who have experienced maltreatment from these mothers. We also conducted an analysis to identify risk factors of child maltreatment from the mother.

In March 2008, the Ministry of Health, Labour and Welfare conducted an inventory survey targeting families placed in the 271 maternal and child living support facilities of Japan. This study investigated basic information on households with DV issues, on the condition of the mother and the child, their life and employment, and the type of assistance needed according to the welfare office (before placement) and according to the maternal and child support facility (after placement).

A data analysis was conducted to identify child maltreatment and basic characteristics of 5,772 children and 3,542 mothers. All survey sheets were filled in by staff members working in the facilities.

We first identified mothers who abused their children and then conducted a chi-squared test to see if child maltreatment was associated with the mother's experience of DV. To examine risk factors associated with child maltreatment from the mother, we conducted a stepwise binary logistic regression analysis using the presence or absence of child maltreatment from the mother as a dependent variable and various items assessing the mother's characteristics as independent variables.

Results show that 2,777 children had a mother who experienced DV, which means that almost half of the children (48.1%) placed in maternal and child living support facilities belong to a household with DV issues.

A comparison of the types of child maltreatment in the DV group and in the non-DV group showed that only neglect was more frequent in the non-DV group. In other words, children in the DV group were more likely to have experienced physical, sexual, psychological and other maltreatments than children in the non-DV group. Thus, except in the case of neglect, experienced of DV is associated with higher risk of child maltreatment.

Thus, this research suggests the need to provide psychological care to maltreated children placed in these facilities. Specialized care is especially needed for children whose mothers have experienced DV as they are at higher risk of having experienced maltreatment. These children may have witnessed scenes of DV in the family, thus increasing the risk of psychological maltreatment. Unfortunately, facilities providing specialized care are currently lacking. Guidance and protection currently provided in maternal and child living support facilities are focusing on the mother and care is not sufficiently provided to children. Thus, future research should examine which measures should be taken to adequately support these children.

Key Words: risk of maltreatment, mother-child relationship, maternal and child living support facilities, domestic violence, cycle of abuse

1. Research goals

In the report on domestic violence published by the National Delegation on Child Guidance Centers¹, risk factors associated with domestic violence are divided between parent-related factors and child-related factors. This first category includes "poor parenting skills", "physical and mental issues", but also "parent's own experience of maltreatment" and "frictions in the couple or domestic conflict".

In another survey conducted since 1986 in pediatrics services of every major hospital in Japan², Tanimura categorized risks of maltreatment in 4 categories: pregnancy, child, household, and parents. This last category also includes "parent's own experience of maltreatment". In the household category, factors such as "frictions in the couple" and "single parent household" are included.

Based on a self-reported survey conducted over 340 families placed in 83 maternal and child living support facilities³, Fujiwara et al (2010) also investigate the impact that the mother's experience of DV (domestic violence), as well as prior experience of maltreatment may have on mental health. Few other studies focusing on the mother have been conducted as most of them, such as the Checklist for Maltreated Young Children⁴, focus on children's issues that may increase the risk of maltreatment.

In other countries, early studies focused on psychopathologies of the mother such as depression, anxiety, drug abuse and dependency as risk factors associated child maltreatment from the mother⁵⁻⁶⁷. However, more recent studies also consider socio-demographic characteristics such as the age of the mother or her academic background⁸⁻⁹¹⁰, as well as characteristics of the child such as mental, physical or behavioral disorders¹¹⁻¹²¹³¹⁴, but also family environment such as frictions in the couple and spousal violence¹⁵⁻¹⁶¹⁷, and parent's prior experience of maltreatment¹⁸⁻¹⁹.

This research is based on national data collected in 2008 in maternal and child living support facilities and identifies mothers with an experience of DV and children with an experience of maltreatment. The goal is to analyze factors associated with high-risk of child maltreatment from the mother.

2. Methodology

2-1. Research object

In March 2008, the Ministry of Health, Labour and Welfare conducted an inventory survey targeting families placed in the 271 maternal and child living support facilities of Japan. This study investigated basic information on households with domestic violence issues, the condition of the mother and the child, their life and employment, and the type of assistance needed according to the welfare office (before placement) and according to the facility (after placement). All survey sheets were filled in by staff members working in the facilities.

2-2. Method of analysis

Using data from a national exhaustive survey conducted on families placed in maternal and child living support facilities, the basic characteristics of 5,772 children and the situation of 3,542 households were identified.

By analyzing data on children and mothers living in these facilities, our goal was to investigate the risk of maltreatment from the mother to the child and especially the impact that DV (especially violence from the husband) may have on the risk of child maltreatment.

We first identified mothers who maltreated their children and then conducted a chi-squared test to see if child maltreatment was associated with the mother's experience of DV.

To further examine the risk of child maltreatment from the mother, we conducted a step-wise binary logistic regression analysis using the presence or absence of child maltreatment from the mother as a dependent variable (0=absence of maltreatment, 1= child maltreatment at least from the mother) and the following items as independent variables: 15 items on emotional and behavioral issues of the mother, 5 items on emotional and behavioral issues in the mother-child relationship, 3 items on health certificates, 4 items on medication and visits to clinic, 3 items on the need for psychotherapy (0=absence, 1=presence and dummy).

2-3. Ethical considerations

The ethical review board of the National Institute of Public Health approved the data analysis (NIPH-TRN#08003). Any information that could be used to identify individuals or facilities targeted by this study was erased.

3. Results

3-1. Basic characteristics of mothers

On the 3,516 mothers included in the analysis (after excluding missing values), 23 were under 19 years of age (0.7%), 805 were in their 20's (22.9%), 1,729 were in there 30's (49.2%), 850 were in there 40's (24.2%), and 109 were over 50 (3.1%).

"Violence from the husband" was the reason for placement of 1,554 mothers (44.2%), followed by "Housing issues" for 740 mothers (21.0%), and "Economic reasons" for 627 mothers (17.8%).

On 3,488 mothers (after excluding missing values), 3,450 mothers (98.9%) had no physical disability certificate, 3 mothers (0.1%) had a level 1 certificate, 13 (0.4%) had a level 2 certificate, 20 (0.6%) had a certificate from level 3 to 6, and 2 (0.1%) were still under examination.

On 3,491 mothers (after excluding missing values), 3,393 mothers (97.2%) had no intellectual disability certificate, 2 mothers (0.1%) had a certificate of severe handicap, 26 (0.7%) had a certificate of moderate handicap, 60 (1.7%) had a certificate of mild handicap, and 10 (0.3%) were still under examination.

On 3,492 mothers (after excluding missing values), 31 mothers (0.9%) had a mental issue certificate of level 2, 34 (1.0%) had a certificate of level 3, and 17 (0.5%) were still under examination.

On 3,513 mothers (after excluding missing values), 625 (17.8%) made an outpatient visit to a mental and psychosomatic unit and 2,888 (82.2%) did not.

On 3,510 mothers (after excluding missing values), 584 (16.6%) had taken medication in a mental and psychosomatic unit and 2,926 (83.4%) had not.

On 3,517 mothers (after excluding missing values), 661 (18.8%) received psychotherapy in the facility, and 2,856 (81.2%) did not.

On 3,510 mothers (after excluding missing values), 337 (9.6%) received psychotherapy outside the facility, and 3,173 (90.4%) did not.

Table 1: Data analysis of mothers' basic characteristics (N=3,542)

		N	%			N	%	
Age (N=3,516)	Under 19	23	0.7	Outpatient visit to a mental and psychosomatic unit	Yes	625	17.8	
	20's	805	22.9		No	2888	82.2	
	30's	1729	49.2		Total	3513	100.0	
	40's	850	24.2		Medication in a mental and psychosomatic unit	Yes	584	16.6
	Over 50	109	3.1			No	2926	83.4
	Total	3516	100.0			Total	3510	100.0
Reason for placement (N=3,516)	Violence from the husband	1554	44.2	Outpatient visit to other unit	Yes	559	16.0	
	Child maltreatment	50	1.4		No	2930	84.0	
	Inappropriate environment	307	8.7	Total	3489	100.0		
	Mother's unstability	101	2.9	Medication in other unit	Yes	467	13.5	
	Occupational issues	8	0.2		No	3004	86.5	
	Housing issues	740	21.0	Total	3471	100.0		
	Economic reasons	627	17.8	Psychotherapy within the facility	Yes	661	18.8	
	Other	129	3.7		No	2856	81.2	
	Total	3516	100.0		Total	3517	100.0	
	Physical disability certificate (N=3,488)	Level 1	3	0.1	Psychotherapy outside the facility	Yes	337	9.6
Level 2		13	0.4	No		3173	90.4	
Level 3 to 6		20	0.6	Total		3510	100.0	
Under examination		2	0.1	Psychotherapeutic needs	Yes	1065	30.5	
No		3450	98.9		No	2120	60.6	
Total		3488	100.0		Unclear	312	8.9	
Intellectual disability certificate (N=3,491)	Severe handicap	2	0.1	Total	3497	100.0		
	Moderate handicap	26	0.7					
	Mild handicap	60	1.7					
	Under examination	10	0.3					
	No	3393	97.2					
	Total	3491	100.0					
Mental issue certificate (N=3,492)	Level	31	0.9					
	Level	34	1.0					
	Under examination	17	0.5					

3-2. Relation between child maltreatment (from the mother, the father or others) and mother's experience of DV

In our study, 2,777 children (48.1%) had a mother who experienced DV and 2,944 children (51.0%) did not (table 2).

In total, 2,507 children (45.2%) had experienced maltreatment. Considering the DV group only, 66.1% (N=1,798) of the children had experienced maltreatment. In the non-DV group, the rate of maltreated children was 25.1% (N=709).

Looking at the types of maltreatment, 868 children (15.2%) had experienced physical maltreatment. The rate was 22.3% (N=618) in the DV-group and 8.5% (N=250) in the non-DV group.

95 children (1.7%) experienced sexual maltreatment. The rate of children sexually abused was 2.3% (N=63) in the DV group and 1.1% (N=32) in the non-DV group.

578 children (10.1%) experienced neglect. The rate of neglected children was 8.9% (N=247) in the DV group and 11.2% (N=331) in the non-DV group.

1,828 children (32.0%) experienced psychological maltreatment. The rate of psychologically

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abused children was 50.8% (N=1,412) in the DV group and 14.1% (N=416) in the non-DV group. 104 children (1.8%) experienced other types of maltreatment. The rate was 2.4% (N=68) in the DV group and 1.2% (N=36) in the non-DV group.

Thus, except in the case of neglected children, the rate of maltreated children was higher when the mother had experienced DV.

Table 2: Children in maternal and child living support facilities and mother's experience of DV

	N	%
DV	2,777	48.1
Non-DV	2,944	51.0
Missing values	51	.9
Total	5,772	100.0

Table 3: Child maltreatment and mother's experience of DV (N=5,772)

		Total		DV		Non-DV		P-value
		N	%	N	%	N	%	
Maltreatment	Yes	2,507	45.2	1,798	66.1	709	25.1	**
	No	3,044	54.8	924	33.9	2,120	74.9	
Physical maltreatment	Yes	868	15.2	618	22.3	250	8.5	**
	No	4,853	84.8	2,159	77.7	2,694	91.5	
Sexual maltreatment	Yes	95	1.7	63	2.3	32	1.1	*
	No	5,626	98.3	2,714	97.7	2,912	98.9	
Neglect	Yes	578	10.1	247	8.9	331	11.2	*
	No	5,143	89.9	2,530	91.1	2,613	88.8	
Psychological maltreatment	Yes	1,828	32.0	1,412	50.8	416	14.1	**
	No	3,893	68.0	1,365	49.2	2,528	85.9	
Other types of maltreatment	Yes	104	1.8	68	2.4	36	1.2	*
	No	5,617	98.2	2,709	97.6	2,908	98.8	

**P<0.01, *P<0.05

3-3. Perpetrators of child maltreatment

We analyzed the experience of maltreatment depending on the perpetrator. Results showed that 3,033 children (52.5%) did not experience maltreatment. 996 children (16.7%) experienced maltreatment from the mother (and possibly others) and 1,515 children (26.2%) experienced maltreatment from someone else than the mother.

Table 4: Experience of maltreatment and perpetrators (N=5,772)

	N	%
No maltreatment	3,033	52.5
Maltreatment on siblings only	(483)	(8.4)
Maltreatment at least from the mother	966	16.7
Maltreatment from someone else than the mother	1,515	26.2
Missing values	258	4.5
Total	5,772	100.0

3-4. Relationship between child maltreatment, type of maltreatment from the mother, and mother's experience of DV

963 children (24.2%) experienced maltreatment at least from the mother and 3,018 children (75.8%) did not.

Looking at the types of maltreatment perpetrated at least by the mother, 376 children (9.4%) had experienced physical maltreatment and 3,605 children (90.6%) had not. 32 children (0.8%) had experienced sexual maltreatment and 3,949 children (99.2%) had not. 412 children (10.4%) were neglected and 3,605 children (90.6%) were not. 679 children (17.1%) had experienced psychological maltreatment and 3,605 children (90.6%) had not. Finally, 45 children (1.1%) had experienced physical maltreatment and 3,605 children (90.6%) had not.

The rate of children who had experienced maltreatment was 37.6% (N=554) in the DV group and 16.3% (N=409) in the non-DV group.

The rate of children who had experienced physical maltreatment was 14.6% (N=216) in the DV group and 6.4% (N=160) in the non-DV group.

The rate of children who had experienced sexual maltreatment was 1.4% (N=20) in the DV group and 0.5% (N=12) in the non-DV group.

The rate of children who were neglected was 11.6% (N=171) in the DV group and 9.6% (N=241) in the non-DV group.

The number of children who experienced psychological maltreatment at least from the mother was 432 for the DV group (29.3%) and 247 for the non-DV group (9.9%).

The rate of children who had experienced psychological maltreatment was 29.3% (N=432) in the DV group and 9.9% (N=247) in the non-DV group.

The rate of children who had experienced other type of maltreatment was 1.8% (N=27) in the DV group and 0.7% (N=18) in the non-DV group.

Thus, the rate of children abused at least by their mother is higher for each type of maltreatment (physical, sexual, psychological, neglect, other) when the mother has experienced DV (Table 5).

Table 5: Child maltreatment at least from the mother and mother's experience of DV

		Total		DV		Non-DV		P-value
		N	%	N	%	N	%	
Maltreatment at least from the mother	yes	963	24.2	554	37.6	409	16.3	**
	no	3,018	75.8	921	62.4	2,097	83.7	
Physical maltreatment at least from the mother	yes	376	9.4	216	14.6	160	6.4	**
	no	3,605	90.6	1,259	85.4	2,346	93.6	
Sexual maltreatment at least from the mother	yes	32	0.8	20	1.4	12	0.5	**
	no	3,949	99.2	1,455	98.6	2,494	99.5	
Neglect at least from the mother	yes	412	10.4	171	11.6	241	9.6	**
	no	3,568	89.6	1,304	88.4	2,264	90.4	
Psychological maltreatment at least from the mother	yes	679	17.1	432	29.3	247	9.9	**
	no	3,302	82.9	1,043	70.7	2,259	90.1	
Other types of maltreatment at least from the mother	yes	45	1.1	27	1.8	18	0.7	**
	no	3,936	98.9	1,448	98.2	2,488	99.3	

**P<0.01, *P<0.05

3-5. Relationship between characteristics of mothers and child maltreatment

To investigate the relationship between the mothers' characteristics and child maltreatment at least from the mother, we conducted a stepwise binomial logistic regression analysis using maltreatment as a dependent variable (0=absence of maltreatment, 1=child maltreatment at least from the mother) and characteristics of the mother as independent variables (table 6). Mothers' characteristics included 15 items on emotional and behavioral issues of the mother, 5 items on emotional and behavioral issues in the mother-child relationship, 3 items on health certificates, 4 items on medication and visits to clinic, 3 items on the need for psychotherapy (0=absence, 1=presence and dummy).

Results were significant for 2 items on emotional and behavioral issues in the mother-child relationship ("1. Attachment issue with the child" and "5. Forced set of values"), 6 items on emotional and behavioral issues of the mother ("6. Early developmental history", "8. Unidentified psychological complaints", "9. Tendency to dependency", "11. Tendency to eating disorders", "12. Tendency to depression", and "13. Temperament issue"), 2 items on psychotherapy ("psychotherapy within the facility", "psychotherapeutic needs"). Concerning "12. Tendency to depression", the value was negative (table 7).

When taking into consideration the absence or presence of DV, 2 items on emotional and behavioral issues in the mother-child relationship ("1. Attachment issue with the child" and "5. Forced set of values"), as well as 1 item on emotional and behavioral issues of the mother ("9. Tendency to dependency") and 1 item on psychotherapy ("Psychotherapeutic needs") were significant in the DV group.

In the non-DV group, the same 2 items on emotional and behavioral issues in the mother-child relationship were significant ("1. Attachment issue with the child" and "5. Forced set of values") were accepted, but also included 6 items on emotional and behavioral issues of the mother ("2. Cluttered life rhythm", "4. Literacy level issue to understand or create documents", "5. Different lifestyles or language issue", "6. Early developmental history", "9. Tendency to dependency", "14. Mental state").

Table 6: Independent variables on mothers' characteristics

Emotional and behavioral issues of the mother ①Housekeeping insufficient skills overload ②Cluttered life rhythm ③Management of finances such as systematic expenses ④Literacy level issue to understand or create documents ⑤Different lifestyles or language issue ⑥Early developmental history ⑦Chronic condition and disorders ⑧Unidentified psychological complaints ⑨Tendency to dependency ⑩Self-injurious behavior ⑪Tendency to eating disorders ⑫Tendency to depression ⑬Temperament issue ⑭Mental state ⑮Interpersonal communication issues Emotional and behavioral issues in the mother-child relationship ①Attachment issue with the child ②Lack of parenting knowledge or skills ③Tendency to abuse ④Excessive attachment ⑤Forced set of values ⑥Mother-child role reversal	Health certificates Physical disability certificate Intellectual disability certificate Mental issue certificate Medication and visits to clinic Outpatient visit to a mental and psychosomatic unit Medication in a mental and psychosomatic unit Outpatient visit to other unit Medication in other unit Psychotherapy Psychotherapy within the facility Psychotherapy outside the facility Psychotherapeutic needs
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Table 7: Relationship between mothers' characteristics and child maltreatment from the mother (N=3,148)

Category	Variable	B	Standard Error	Wald	Odds ratio	P-value
Emotional and behavioral issues in the mother-child relationship	①Attachment issue with the child	1.46	0.13	123.98	4.33	**
Psychotherapy	Psychotherapeutic needs	1.09	0.15	56.04	2.96	**
Emotional and behavioral issues in the mother-child relationship	⑤Forced set of values	0.99	0.13	53.81	2.69	**
Emotional and behavioral issues of the mother	⑥Early developmental history	0.61	0.14	18.92	1.84	**
Emotional and behavioral issues of the mother	⑨Tendency to dependency	0.61	0.13	20.79	1.83	**
Emotional and behavioral issues of the mother	⑧Unidentified psychological complaints	0.55	0.16	11.99	1.73	**
Psychotherapy	Psychotherapy within the facility	0.38	0.15	6.49	1.46	*
Emotional and behavioral issues of the mother	⑬Temperament issue	0.36	0.14	6.13	1.43	*
Emotional and behavioral issues of the mother	⑪Tendency to eating disorders	0.36	0.17	4.23	1.43	*
Emotional and behavioral issues of the mother	⑫Tendency to depression	-0.54	0.18	9.45	0.58	**
	Constant	-3.85	0.13	843.26	0.02	**

Chi-squared test P<0.01; Hosmer-Lemeshow Test P=0.125; Hit ratio=86.3%

**P<0.01, *P<0.05

Table 8: Relationship between mothers' characteristics and child maltreatment from the mother in the DV group (N=1,154)

Category	Variable	B	Standard Error	Wald	Odds ratio	P-value
Emotional and behavioral issues in the mother-child relationship	①Attachment issue with the child	1.46	0.18	67.88	4.32	**
Psychotherapy	Psychotherapeutic needs	1.27	0.17	56.30	3.54	**
Emotional and behavioral issues in the mother-child relationship	⑤Forced set of values	1.23	0.18	47.34	3.43	**
Emotional and behavioral issues of the mother	⑨Tendency to dependency	1.05	0.18	33.30	2.84	**
	Constant	-2.74	0.15	322.81	0.06	**

Chi-squared test P<0.01; Hosmer-Lemeshow Test P=0.101; Hit ratio=81.6%

**P<0.01, *P<0.05

Table 9: Relationship between mothers' characteristics and child maltreatment from the mother in the non-DV group (N=1,994)

Category	Variable	B	Standard Error	Wald	Odds Ratio	P-value
Emotional and behavioral issues in the mother-child relationship	① Attachment issue with the child	1.48	0.20	53.84	4.41	**
Psychotherapy	Psychotherapeutic needs	1.07	0.19	31.73	2.92	**
Emotional and behavioral issues in the mother-child relationship	⑤ Forced set of values	1.03	0.20	27.15	2.80	**
Emotional and behavioral issues of the mother	⑥ Early developmental history	0.83	0.24	12.35	2.29	**
Emotional and behavioral issues of the mother	② Cluttered life rhythm	0.63	0.19	10.39	1.87	**
Emotional and behavioral issues of the mother	⑨ Tendency to dependency	0.57	0.19	9.18	1.77	**
Emotional and behavioral issues of the mother	④ Literacy level issue to understand or create document	0.46	0.20	5.45	1.58	*
Emotional and behavioral issues of the mother	⑭ Mental state	0.40	0.19	4.13	1.48	**
Emotional and behavioral issues of the mother	⑤ Different lifestyles or language issue	-0.86	0.28	9.39	0.42	**
	Constant	-4.78	0.23	425.37	0.01	**

Chi-squared test P<0.01; Hosmer-Lemeshow Test P=0.152; Hit ratio=90.3%

**P<0.01, *P<0.05

4. Discussion

4-1. Mother's experience of DV from the child's viewpoint

Almost half of the children (48.1%) placed in maternal and child living support facilities belong to a family where DV has occurred.

A comparison of the types of child maltreatment in the DV group and in the non-DV group showed that only neglect was more frequent in the non-DV group. In other words, children in the DV group were more likely to have experienced physical, sexual, psychological and other maltreatments from the mother than children in the non-DV group.

Thus, except in the case of neglect, mothers who experienced DV were more likely to abuse their children, which means that DV is a risk factor associated with child maltreatment from the mother.

Considering the rate of children whose mother has experienced DV (48.1%) and the rate of children who had experienced maltreatment (45.2%) in maternal and child living support facilities, psychological care for these children need to be provided in these facilities.

Specialized care is especially needed for children with a mother who has experienced DV, as the rate of maltreated children was significantly higher in the DV group (66.1%) than in the non-DV group (25.1%). Moreover, these children may have witnessed scenes of DV, which may explain why the rate of psychological maltreatment was significantly higher in the DV group (50.8% against 14.1% in the non-DV group).

This type of specialized care is currently lacking in maternal and child living support facilities.

4-2. Child maltreatment and perpetrator

While focusing on whether or not the mother was a perpetrator of child maltreatment, this study also revealed that, on the 5,772 children targeted in this study, 483 children (8.4%) had not experienced maltreatment even though their siblings had.

This proves that, even within the same family, some children had experienced maltreatment while others had not. Previous research²⁰ showed a relationship between parenting stress and maltreatment and Ikeda²¹ suggested that a link might exist between parenting burden and

maltreatment. Thus, parenting issues may be one of the factors explaining the variation observed in child maltreatment within siblings.

Moreover, according to the "Statistical data on cases of child maltreatment in Child Guidance Centers (2006)" published by the Ministry of Health, Labour and Welfare, perpetrator of child maltreatment were natural mother at 60% and natural father at 20%. Unfortunately, the data used in our study did not allow us to investigate whether or not the maltreated sibling was the biological child of the perpetrator.

However, our study showed that 996 children (16.7%) were abused at least by the mother and that 1,515 children were abused by someone else than the mother, which suggests that, in the case of children and mothers placed in maternal and child support facilities, the perpetrator is more likely to be the father or someone else than the mother.

Guidance and protection currently provided in maternal and child living support facilities are focusing on the mother and care is not sufficiently provided to children. Thus, future research should examine which measures could be taken to adequately support these children.

4-3. Risk factors of child maltreatment and support for the mother

Risk factors associated with child maltreatment are complex and involve both children and parents. In the 1970's, the concept of cycle of abuse has emerged as a risk factor of the mother-child relationship²². This concept suggests that once maltreatment is experienced, it may trigger a cycle of emotional, psychological, and physical maltreatment. Walker also explains that in many cases, psychological maltreatment occurs at the same time or before physical maltreatment.

A few years later, Belsky (1980), after stressing that a single factor or a single model such as mothers' mental disorder could not explain the occurrence of maltreatment, suggested an ecological model including multiple factors such as the condition of the family, cultural and social factors, and characteristics of parents and children²³.

Solutions to tackle child maltreatment issues and the multiplicity of factors involved have been investigated since more than 30 years. This concept of cycle of abuse is still used broadly in programs to tackle DV issues in America.

Even though it has long been established that a single factor does not trigger child maltreatment²⁴, many empirical research have pointed out that mothers who experienced maltreatment are at higher risk of child maltreatment²⁵⁻³³.

In the 2007 revision of measures on child maltreatment in Japan, the Ministry of Health, Labour and Welfare reaffirmed that "Child maltreatment occurs due to a complex combination of physical, psychological, social and economical factors. The understanding of risk factors triggering child maltreatment is gradually increasing and is important to help identifying families in critical situations or with parenting issues". Results from this study show that the children of mothers who experienced DV are at higher risk of maltreatment than children of mothers who did not experience DV. These results are similar to findings in other studies and support the statement from the Ministry of Health, Labour and Welfare.

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The Ministry also pointed out that "the presence of numerous risk factors does not necessarily lead to maltreatment. To make a proper assessment of the situation, risk factors should be put in balance with preventive factors that may prevent the occurrence of maltreatment". This means that even though risk of maltreatment may be high in a given situation, a careful assessment of this situation need to be conducted without presupposing maltreatment.

The binomial logistic regression analysis used in this study identifies a model accepting 10 out of 30 variables. Variables on health certificates and on medication and visits to clinic were not associated with maltreatment from the mother.

Thus, our study suggests an absence of correlation between child maltreatment from the mother on the one hand and disability (physical, intellectual or mental) or medical treatments on the other hand. However, the model accepted psychotherapy within the facility and psychotherapeutic needs, suggesting that psychological instability increases the risk of maltreatment from the mother.

Previous studies already identified experience of DV from the mother as a risk factor associated with child maltreatment²⁷⁻³⁵.

However, another study conducted in 2012 on the relationship between experience of DV and emotional or behavioral disorders of the mother showed that only the following items were associated with a higher level of disorder: "4. Literacy level issue to understand or create documents" and "Different lifestyles or language issue". In this study, mother in the non-DV group showed higher rates for 10 out of 21 items (7 on the mother, and 2 on the mother-child relationship).

These results suggest that mothers who did not experienced DV have more behavioral and psychological disorders than other mothers placed in maternal and child living support facilities. Overall, it seems that, when looking for risk factors of child maltreatment, experience of DV is more relevant than the mother's emotional trauma.

Odds ratio on emotional and behavioral disorders that have an impact on maltreatment showed that 2 items on the mother-child relationship were relevant: "1. Attachment issue with the child" and "5. Forced set of values". Similar results were found when including the absence or presence of DV in the analysis.

Another study showed that attachment issue, which had the highest score in our study, can be influenced by the mother's past traumatic experience. These experiences may lead to unresolved issues that are associated with infant disorganization³⁵. Another study by Jacobvitz³⁶ showed that mothers' unresolved trauma such as parental maltreatment and unresolved/disorganized attachment status are difficult to resolve after becoming adult and may lead to frightened/frightening maternal behavior towards the mother's children.

Thus, both our analysis and past studies show that the attachment status of the mother is intimately related to parenting skills. Moreover, a strong influence from the variable on the need for psychotherapy was also identified. To prevent the cycle of abuse, it has been

suggested that instead of trying to teach proper ways to interact or reprehend children, it may be more effective and appropriate to provide parents with psychotherapy and training to trust other persons (to help them sort out their own childhood issues)³⁷. Our research supports this statement and suggests the need to implement a preventive program of psychological treatment for mothers at high risk of maltreatment.

5. Conclusion

This research showed that mothers in maternal and child living support facilities are at high risk of child maltreatment. As the risk is particularly high when mothers have experienced DV, it is important to further examine the relationship between mothers and children placed in these facilities.

To prevent maltreatment from the mother before it occurs, mothers at high risk should be identified and provided with adequate support. Moreover, considering the high rate of maltreated children in maternal and child living support facilities, a system providing a smooth access to psychological care and mental support should also be implemented in these facilities.

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