

Mathematical Model of Impact of Domestic Violence on Children

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Abstract:- Presented herein are studies of effect of domestic violence on children's. It is very important to know that domestic violence is harmful in every stage of life of children. Depression and aggressive behavior of children's were often displayed. We observe that children relation outside the family were affected by domestic violence. Also we observe that domestic violence has negative effect on parent's relationship.

Keywords:- Depression, Aggressive behavior, Fear, Relationship.

I. INTRODUCTION

For some decade research has highlighted the fact that domestic violence can have a negative impact on children. According to Erason [1] that 72% of mother in her study felt that their children had experienced negative emotional impacts because of the domestic violence.

Abraham's [2] felt that 91% accepted that their children suffered negative effect and 86% said that these effects continued in long term into children's adolescence. Mom's studies that the entire entire woman felt the violence has determined effect on their children.

In the present study children and mother both reported a wide range of effects of domestic violence on the children including fear, powerlessness, depression, sadness, impaired social relations, impact on the child's identity, effects on educational achievement and aggressive behavior. The child's relationship with the father is also clearly affected by the violence to the mother. Kelly[3] point out that the range of factors both personal and external influence how children react are affected by all forms of domestic violence. Mother and children in this study highlighted the impact of living with fear and intimidation on a daily basis effect of specific physical assaults.

The majority of children felt several emotions, however by far the most commonly mentioned impact of the domestic violence was fear. Yadav A.K, Kumar S. & Chaudhary R. said that domestic violence depend upon physical relationship and health position. In relation to their mother, children reported similar anxieties to those they felt on their own safety.

In this paper we have made an attempted domestic violence impact on children.

II. OBJECTIVES

With the above aspects in view, the main objectives of this study are;

- To estimate the impact of long term fear.
- To estimate long term effect on sadness and anger.
- To estimate the effect on children's identity.
- To estimate the effect on children's relationship with parents.

➤ Long term effect of fear

It is clear that children and mother said that this fear engendered by violent man affected that how safe the children felt. Children's fear of being hearts by their father may become generalised. In a number of cases, mother discussed their anxiety that their children's were fear of men. The experience of repeatedly leaving and being found by the violent man and having to return home increased children's feeling of powerless and hopelessness.

➤ Sadness and angry

After fear children were most frequently upset by the violence against their parents. Some children responded to feelings generated by witnessing the domestic violence by self harming. In addition children experienced suicidal thought. Depression and suicidal ideation may be belived to be part of range of system. Children displaying their anger behavior which is not unusual for domestic violence. Children frequently desire to seek their revenge on their parents hurting him. Both boys and girls were displaying aggressive behavior.

➤ Effect on children's identity

Several children referred to the fact that they felt stig matised by domestic violence. Young children were aware of the stigma surrounding domestic violence. Children said that humiliated and degraded clearly affected their identity.

➤ Children's relationship with parents

Children said that the relationship with their mother was affected domestic violence. In such cases children's appeared to imitate the aggressor's behavior to their mother. Other children said that due to violence mother children relationship became strained. It is clear that

children become very protective of their mother’s physical and emotional.

It is hardly surprising that domestic violence had significant impacts on children’s relationship with their father of all the impacts identified being scared frightened were the one most frequently. The children were frequently aware of this differential treatment and were very hurt by it.

➤ *Formulation of the problem*

The bearing model considered the present analysis of impact factor of domestic violence of children.

Let I(t) be the negative impact factor of children at time t, the impact factor growth rate is

$$\frac{dI}{dt} = \text{Mother affords- Father violence} + \text{Migration} \tag{1}$$

The form of the various term of the right hand side of equation (1) necessitates modeling the situation that are connected with. This model has no migration of parents and mother behavior and father violence is proportional to I. Then, we have

$$\frac{dI}{dt} = MI - FI \tag{2}$$

Or

$$\frac{dI}{dt} = (M - F)I \tag{3}$$

And

$$\frac{dI}{I} = (M - F)dt \tag{4}$$

With boundary condition.

$$I = I_0 \quad \text{At} \quad t = 0 \tag{5}$$

➤ *Solution of the problem*

Integrating equation (4), we get

$$\log I = (M - F)t + A \tag{6}$$

Where A is a constant of integration
Using the boundary condition (5) we get,
 $I = I_0 e^{(M-F)t}$
(7)

III. RESULT

It is clear that fear engendered by violent person which affected the negative impact of children’s. It has been observed that the negative impact factor (powerless, hopeless, sadness and children’s identity etc.) increases with the increase of domestic violence. We also observed that increase long term negative factor children social relation decreases which disturb their identity in equation and society. It is also observed that when violence increases by violent person then mother health and mental level decreases and negative impact factor much increases in children. It also has been observed that violent person behavior create domestic violence and negativity in children. It is clear that physical relationship is much factor in this domestic violence which depends on mother health. We also observed that physical relationship create violence which increases the negative impact factor of children. It has been observed that increases of domestic violence decrease the relationship of children to their father. It is clear that domestic violence disturb the family relation and creates so many kind impacts on children.

IV. CONCLUSIONS

It is very important to recognize that children by all form of domestic violence. Fear was the most commonly reported impact of domestic violence. Children’s were also upset by the violence and were at times depressed to the point. Anger was another effect of living with violence. This anger was often displayed as aggressive behavior of children.

The effect of education was most noticeable in school lived. Children’s relationship within and outside the family were affected by domestic violence. The relationship between children and parents is affected by violence. Domestic violence has a negative impact on children’s relationship about their father. Friendships were also difficult that type of children.

| F \ M | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 |
|-------|--------|--------|--------|--------|--------|
| 1 | 1.2840 | 1.0000 | 0.7788 | 0.6065 | 0.1737 |
| 2 | 2.1170 | 1.6487 | 1.2840 | 1.0000 | 0.7788 |
| 3 | 3.4903 | 2.7183 | 2.1170 | 1.6487 | 1.2840 |
| 4 | 5.7546 | 4.4817 | 3.4903 | 2.7183 | 2.1170 |
| 5 | 9.4877 | 7.3891 | 5.7546 | 4.4817 | 3.4903 |

Table 1:- negative impact factor $I_0 = 1, t = 0.5$

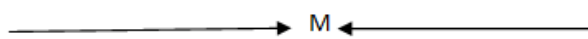
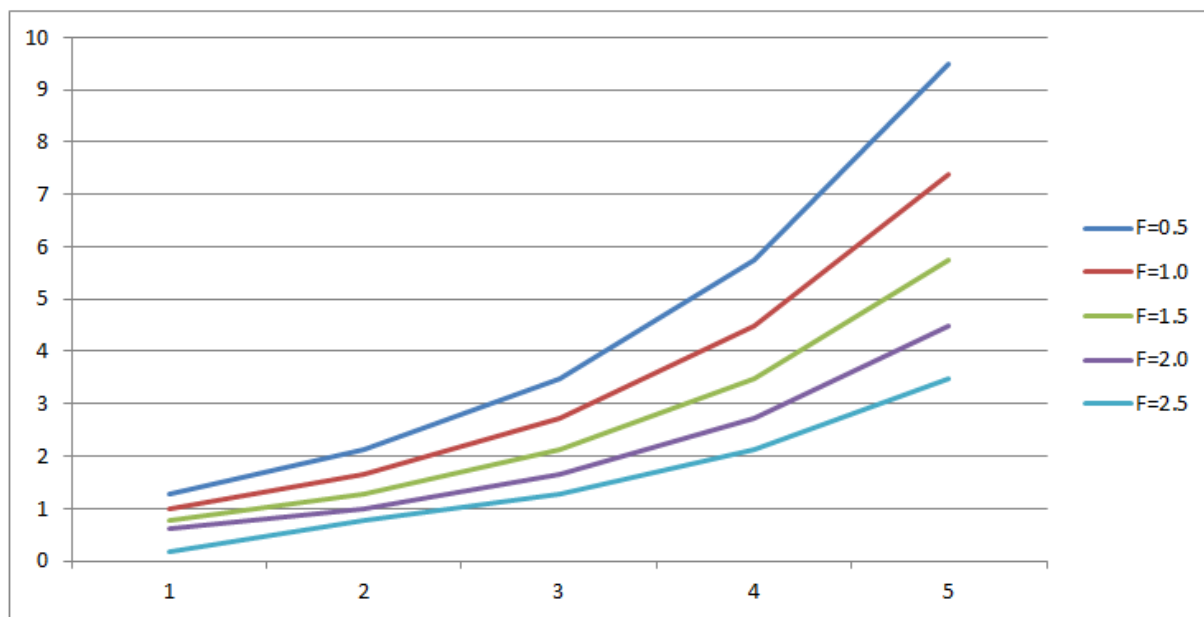


Fig 1:- Variation of Negative impact factor

| F \ M | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 |
|-------|---------|---------|---------|---------|---------|
| 1 | 1.6487 | 1.0000 | 0.6065 | 0.3678 | 0.2231 |
| 2 | 4.4816 | 2.7182 | 1.6487 | 1.0000 | 0.6065 |
| 3 | 12.1824 | 7.3890 | 4.4816 | 2.3182 | 1.6487 |
| 4 | 33.1154 | 20.0855 | 12.1824 | 7.3890 | 4.4816 |
| 5 | 90.0171 | 54.5981 | 33.1154 | 20.0855 | 12.1824 |

Table 2:- negative impact factor $I_0 = 1, t = 1.0$

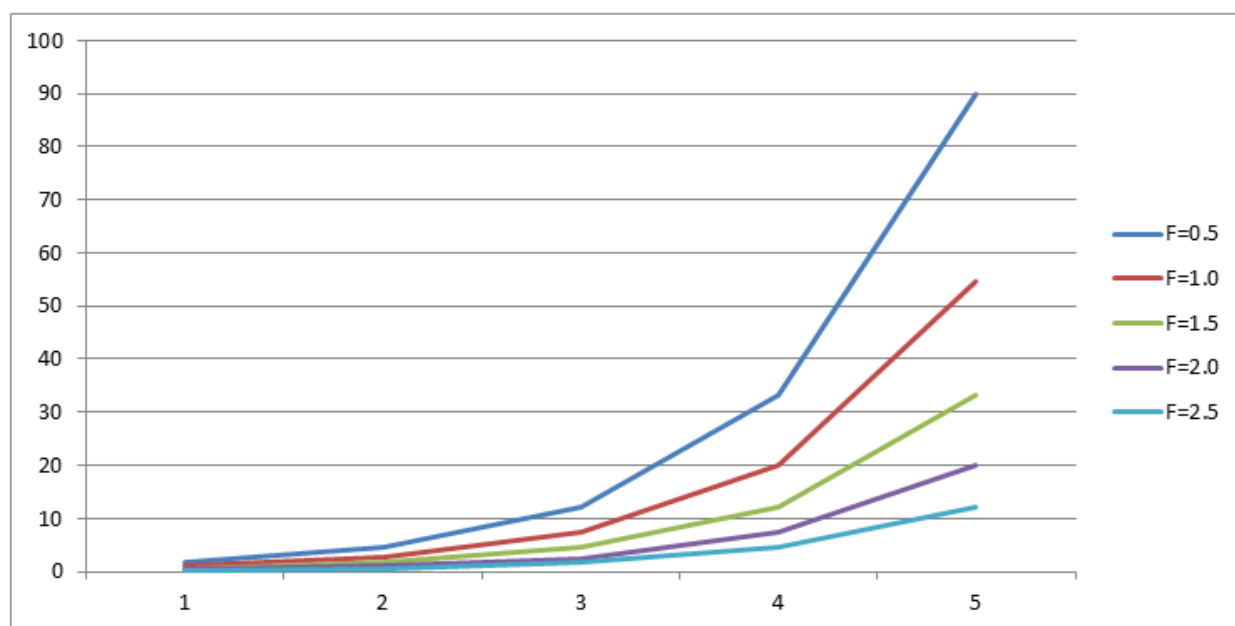


Fig 2:- Variation of Negative impact factor

| F \ M | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 |
|-------|----------|----------|----------|---------|---------|
| 1 | 2.1170 | 1.0000 | 0.0006 | 0.2231 | 0.1054 |
| 2 | 9.4877 | 4.4816 | 2.1170 | 1.0000 | 0.0006 |
| 3 | 42.5210 | 20.0855 | 9.4877 | 4.4816 | 2.1170 |
| 4 | 190.5662 | 90.0171 | 42.5210 | 20.0855 | 9.4877 |
| 5 | 854.0587 | 403.4287 | 190.5662 | 90.0171 | 42.5210 |

Table 3:- negative impact factor $I_0 = 1, t = 1.5$

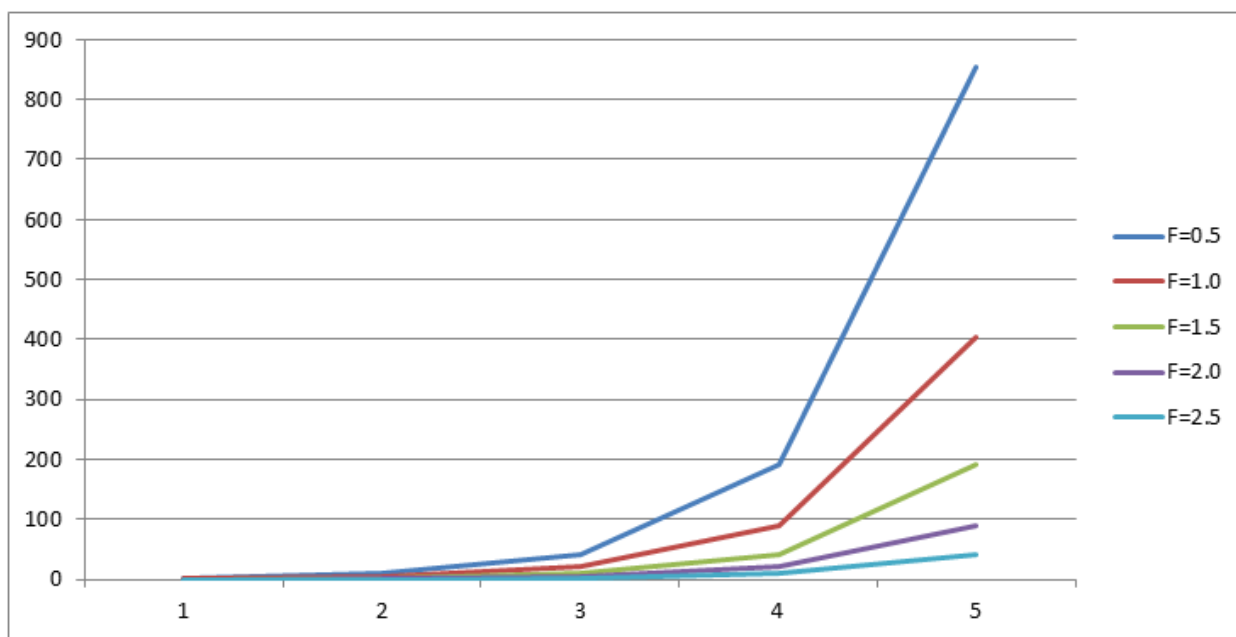


Fig 3:- Variation of Negative impact factor

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