

Mathematical Model for Domestic Violence

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ABSTRACT: Presented herein are studies that the mathematical aspect of domestic violence. The Parameters specified $x(t), y(t)$, t and $V(t)$. It has been observed that the domestic violence increases with the increase the value of t . We have also observed that the domestic violence increases as increases the day of physical relationship and also increases due to health position.

KEYWORDS- Domestic Violence, Relationship, Behavior of partner

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I. INTRODUCTION

Domestic Violence incorporates a range of controlling and abusive behaviours. This paper explores the context of this violent behaviour for both mothers and children. By examining the man's violence to his partner before going to detail the specific form of abuse experienced of children life of this domestic violence. Women said that they could not identify any particular things that would at random in the form of violence by partner. Women frequently said that initially they tried to make excuses for their partner's violence but it could not be blamed on external factors. Some women said that their partners used alcohol in connection with their violence. Sometimes, it was drink the emotional abuse worse and then if that got really bad.

most said that the abuse started with over physical violence then was followed by emotional and physiological abuse. the most central aspect to domestic violence is the violent man's need to control totally every aspect of the women's life. Physical violence may be completely gratuitous but usually fulfill the function of enforcing the man's power. A failure to recognize the extreme nature of this controlling behaviour. Women in the study described however aspect of their lives was controlled by their violent partners.

Hester & Radford [2] and Kelly [3] said that control of the women and children does not automatically stop the end of relationship. Other forms of controlling behavior women experienced were controlling the finance and claiming. She has health problems so he can not allowing her to go to bed. In addition to the control that violent men existed over their partners women were subjected to specific emotional and psychological abuse, Physical and sexual violence. Hester [1] said about sexual violence beg of life. He said that women were not asked specially about sexual violence, so the responses were dependent on how women defined for sex. In these situation the violent man would harass the women's family in an attempt to find her and the children.

Donald [5] conclusion that intimate partner violence is better predicted by psychological other than social structural factors. Particularly in cultures where there is relative gender equality. Sherman [4] observed that compulsory arrest reduces violence against middle class women at the expense of those who are poor.

The most frequently used strategies were those which aimed to protect the family. One of the most common impacts of domestic violence is women health both in short term and long term. The stress living and trying to cope, with the man's violence was the most commonly cited cause for these health problem.

In this paper we have made an attempt to study the domestic violence related factor.

Formulation of the problem

The bearing model consider for the present analysis of domestic violence. We consider the model in which person effected to domestic violence at $t = 0$.

Let $y(t)$ be the fraction of the population who have involved in domestic violence at time t and $x(t)$ be the fraction that population who are not involve in domestic violence.

Thus, we have

$$x(t) + y(t) = 1 \quad (1)$$

Or

$$x(t) = 1 - y(t) \quad (2)$$

Let $v(t)$ be rate of conversion of domestic violence.

A simple model for the dynamics with relevant initial condition is

$$\frac{dx}{dt} = -v(t)x, \quad x(0) = 0 \quad (3)$$

$$\frac{dy}{dt} = v(t)x, \quad y(0) = 0 \quad (4)$$

Where $x + y = 1$ (5)

$v(t)$ is an increasing function of time;

Let

$$v(t) = at \quad (6)$$

Solution of the problem

From equation (3) and (6), we have

$$\frac{dx}{dt} = -atx \quad (7)$$

Integrating equation ((7) and applying the boundary condition, we get

$$x(t) = e^{-\frac{at^2}{2}} \quad (8)$$

Where a is any integrating constant

$$y(t) = 1 - e^{-\frac{at^2}{2}} \quad (9)$$

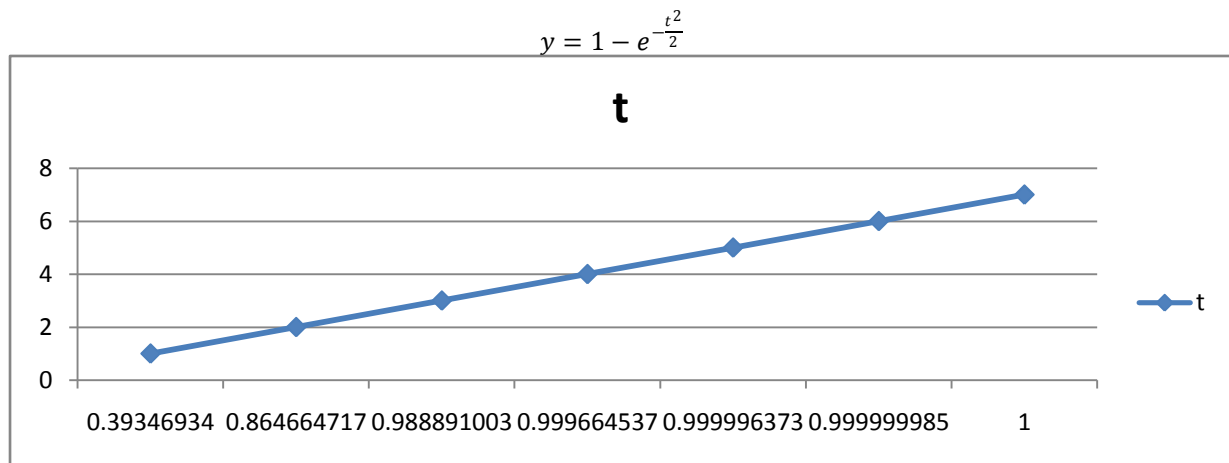
II. RESULT AND CONCLUSIONS

The present paper proposed a more realistic model for explaining domestic violence. The result of domestic violence have been examined for different values of time. As the gap of time in physical relationship increases the domestic violence increases. It is clear that domestic violence depends on health factor. When the time of physical relationship increases the domestic violence increases.

Table (1)

Ata = 1

t	1	2	3	4	5	6	7
$y(t)$	0.39346934	0.864664717	0.988891003	0.999664537	0.999996273	0.999999985	1.00000000



Variation of domestic violence

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