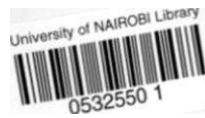


MODELING THE PREVALENCE OF VIOLENCE AGAINST WOMEN USING
THE KENYA DEMOGRAPHIC HEALTH SURVEY 2003^M

BY

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A PROJECT SUBMITTED TO THE SCHOOL OF MATHEMATICS,
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REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE SOCIAL
STATISTICS



DECLARATION

This is to certify that this research project is my original work and has not been presented for a degree award in any other university or institution of higher learning. Information from other sources has been duly acknowledged.

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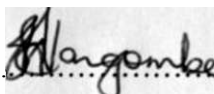
Student's signature

Date: 28/11/2011

This project has been submitted with my approval as University Supervisor.

Supervisor's name: Mrs. Anne Wang'ombe

Supervisor's Signature:

 Date: 29-11-2011

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APPRECIATION

I thank God so much that he showered his grace upon me and enabled me to finish this level. He makes everything beautiful in its time and for sure I can testify to that. I also extend my gratitude to my parents Mr. and Mrs. Kaloki, mum and dad you don't know how grateful I am that you believed in me and gave me the chance to do exploit. This I promise is just the beginning of greater things to come. Thank you to my siblings Maureen, Victor and Linda, my friends Mercy, Lilian, Ruth, Mary, Flora, Preetika and Deepali. Above all thank you so much Anne Wang'ombe for not just being a supervisor but also a friend, confidant, adviser and if you allow me, mother.

Once more thank you God for you make the end more beautiful than the beginning and for that I praise your holy name.

ACRONYMS

GBV	Gender based violence
WHO	World Health Organization
IPV	Intimate Partner Violence
VAW	Violence against women
DV	Domestic Violence

ABSTRACT

This study examines the determinants of violence against women in Kenya. The data used in this study comes from the Demographic and Health Surveys, (DHS). Parsimonious Logistic regression models were estimated based on this data with the three forms of violence that is Sexual, Physical and Emotional as the dependent variables and a set of demographic variables that is age, marital status, education level, occupation, religion, region, residence and wealth index as the explanatory variables. The results presented in this paper suggest that the DHS data can be used to determine the correlates of violence against women.

CHAPTER 1

INTRODUCTION

1.1 Overview

Violence is in itself a fundamental violation of human life and freedom, and hence directly lowers individual welfare. Violence which can be described as an aggression towards somebody, leads to physical and emotional injuries. It has been acknowledged worldwide that domestic violence is a violation of the basic human rights. In our world today we are experiencing many forms of abuse especially sexually. When we look at our society at this time so much goes on but no one talks about it. Both men and women not forgetting children are caught in this snare of violence. This is a trap that has seen many perpetrators walk away without being punished because these cases are not being reported as fast as they happen. Many women are harassed day by day in their houses, work places, streets etc and these includes young girls whom the same happens in schools, in their own homes and by their close relatives and strangers.

Decreasing domestic violence is going to take a while since as much as organizations are trying to empower women in the area of rights issues; we still have low reporting rates of the occurrences of such acts in very many areas and parts of not only our country Kenya, but also Africa as a continent and the world at large. The reasons for this, especially at a time like now when education for all ,and the girl child for that matter, is supported fully by the UN agencies through MDG number 3 which is to promotes gender equality and empower women targeting the following areas

- 3.1 Ratios of girls to boys in primary, secondary and tertiary education
- 3.2 Share of women in wage employment in the non-agricultural sector

- 3.3 Proportion of seats held by women in national parliament

, could be because of the way the woman is brought up in the society. It will be noted that most cultures do not entertain the say of a woman rather they take them as persons to be seen and not to be heard.

For this study to be effective, then we must be able to tell what factors lead to such acts, is it religion, lack of education, lack of employment, culture or place of residence just to mention but a few.

Domestic violence is an important public health problem. Currently, approximately 6% of women and 4% of men are assaulted each year by an intimate partner (Finney A., 2004). There are multiple and important associations with a wide variety of adverse health problems. Many women do not disclose until they have experienced several episodes of abuse (Bewley S., et al., 1997). Women who have experienced abuse seem to assess their risk of rate assault (Heckert D.A., et al., 2004). In the USA, Africa-american perpetrators are more likely to do it again (Kingsnorth R., 2006).

(Lynn F. K., 2006) notes that one of the most salient contexts for children's development is the family environment and when family relations go awry, children exhibit a variety of behavior problems (Marsh and Barkely, 2003). Being exposed to domestic violence is perhaps one of the most stressful life circumstances for children. Consequently, children from domestically violent homes show a variety of mental health problems. One of the most consistent findings is that children from domestic violent homes show externalizing problems such as aggression, delinquency, and hostility towards others. (Fantuzzo et al., 1991; Jounles et al., 2001; Jaffe et al., 1986; O'keefe, 1994; Wolfe et al., 1985; Wolfe and Korsch, 1994) they are also at increased risk for difficulties with anxiety (Christopolous et al., 1987; Huges,

1988), depression (Spaccarelli et al., 1994 ;Stemberg et al., 1993) and self esteem (Hughes, 1988)

1.2 Literature Review

Gender Based Violence (GBV) is undoubtedly one of the most common forms of violence in the world. GBV includes physical violence, emotional violence, sexual violence and economic violence. Recent multi-country studies, using a common methodology and definitions, have found high prevalence of physical and sexual violence against women by intimate male partners, whether measured in the past 12 months or over women's lifetimes. Other forms of GBV such as rape, trafficking, dowry-related violence and female genital mutilation are also important and have been recently documented (Bloch, F. and Rao, V. 2002)

Gender-based violence (GBV) is a pervasive human rights issue with public health consequences. It often goes unrecognized and unreported, is accepted as part of the "nature of things" and is shrouded in a culture of silence (USAID, 2008). Violence against women is one of the most systematic and prevalent human rights abuses in the world. It is directed against a woman because she is a woman or affects women disproportionately. Such gender-based violence against women is a form of discrimination and deeply rooted in power imbalances and structural relationships of inequality between women and men. Violence against women is a global phenomenon, occurring in every continent, country and culture. It harms families, impoverishes communities and reinforces other forms of inequality and violence throughout societies (UNDAW, UNECE, UNSD, 2007)

Although reliable data on the prevalence of the various forms of GBV remains scarce, the Demographic and Health Surveys (DHS) program have been contributing to the growing body of evidence on one important aspect of GBV by providing national level population-based data on the prevalence, risk factors and consequences of domestic violence experienced by women (USAID, 2008).

A common assumption in the literature on domestic violence is that women who are poor are more likely to experience violence than women who are not poor (Ellsberg et al., 1999; Heise, 1998; Jewkes, 2002). Poverty is not necessarily seen as a causal factor, but it is generally assumed to significantly increase the risk of domestic violence. On the other hand, the association between poverty and domestic violence is unlikely to be entirely unidirectional: the perpetration and experience of such violence may contribute to aggravating, perpetuating, or even "causing," household poverty (Byrne et al., 1999). Although research adequately documenting the assumed relationships between domestic violence and poverty is limited, the very likelihood of circularity in the poverty-violence relationship suggests an urgency to understand whether and how violence and poverty are related and whether the circumstances of women caught at the nexus of poverty and violence differ from those of other women, particularly women who may also be beaten but are not poor. In particular, is there reason to expect that health outcomes for women who experience domestic violence are going to be more negative the poorer the women are, or do poverty and the experience of violence exert unrelated but mutually reinforcing effects that mark women at the nexus of poverty and violence as particularly doomed? (Kishor, Sunita, Ed. 2005).

World health organization (WHO, 2004) reports that among women aged 15-45 years, gender based violence accounts for more deaths and disability than cancer, malaria and traffic

injuries put together. This has become an important factor affecting women's reproductive health.

In a study of Johnson and Kishor (2005,255) they found out that women in countries like Cambodia, Colombia, The Dominican Republic, Egypt, Haiti, India, Nicaragua,Peru and Zambia experience domestic violence from their spouse regardless of their physical state. This implies that the women in these countries do receive abuse even in their periods of pregnancies. The study indicates that such abuse is detrimental to the health and rights of women as well as the development of individual nations.

Ann L.C.(2004) notes that the women's movement of the late 1960's advocated for a more comprehensive tertiary prevention for intimate partner violence (IPV) .Schechter (1982) to include law enforcement and legal responses to IPV. The women's movement also inspired creation of battered women's shelter and community based support services for women seeking assistance in coping with IPV or safely leaving a violent relationship. These essential life saving services are tertiary prevention because violence has already occurred, and, for many women, violence has become chronic and health consequences have already occurred as (Hyman, Gurage, Stewart and Ahmad, 2000) argued. IPV is societal and community issue, thus strategies targeting individuals or families are insufficient to address the problem, primary prevention is critical. The focus of primary prevention is largely educational and involves changing social norms and individual attitudes. It is important to note that violence is a learned response to a stressor (Spivak, Hausman and Prothrow-Stith, 1989) supported by attitudes of acceptance of the behavior. Unlearning the behavior is; of course, more difficult than never learning to use violence, therefore the focus in primary prevention is learning not to use violence.

As researchers, we must always be willing to change our minds about the subjects we study, Santre (1963) put it, to "think against ourselves" (p. 168). Only by keeping an open mind and thinking differently about the problem of violence against women will we be able to develop new approaches, new theories, and new paradigms that will reduce violence against women. (Patricia Tjaden, 2004) including child and adolescent victims in the definition of violence against women and the relationship between victimization as a minor and victimization as an adult. Remember less restrictive definition yield higher prevalence rates, whereas more restrictive definition yield lower rates.

Kilpatrick (2003) asserts that sound information about the prevalence, nature and consequences of violence against women (VAW) from the foundation of public health approach toward violence prevention. In this context, surveillance refers to "ongoing, systematic collection, analysis and interpretation of outcome specific data" (thacker and Berkelman, 1988, p. 164). To conduct such surveillance requires us to first define the underlying problem, determine how big it is, and then monitor its trends over time. This involves more than simply counting cases. It includes obtaining information on factors such as demographic characteristics of the person involved, the temporal and geographic characteristics of the incident, the victim-perpetrator relationship, and the severity and cost of associated injuries. Analyzing data about prevalence and trends provides a picture of the underlying patterns that help characterize the problem, which in turn enables us to explore and test strategies for its amelioration (Saltzman, Green, Marks and Thacker, 2000)

(Maria et al., 2010) The multiple causes of violence against women, according to World Health Organization (WHO) (Krug E. et al., 2002 Velzeborer M. et al., 2003) stem from

various factors ranging from those relating to the norms that rigidly define the social role of men, giving them control and domination over women, to the acceptance of violence as a conflict resolution strategy (Krug E., et al.,2002). Poverty ,low social economic status, unemployment, association with delinquent partners, isolation of the woman and family are community factors and marital discord and the partners control of property and decision making regarding family affairs are factors linked to personal relationships. Factors associated with the aggressor are being male and young, having witnessed domestic violence in childhood, being an absence father or father who rejects the child, a lower level of schooling, depression, personality discords, having suffered abuse in childhood and alcohol consumption (Krug E., et al., 2002).

Violence against women has been on the WHO's list of priorities since 1996 and has been the subject of various studies around the world. These studies have revealed the scale of the problem: a prevalence of 41% was found among women over 16 years of age in London (Richardson J. et al., 2002) united kingdom and in a representative sample of the adult population in China (Parish W.L. et al., 2004), 34% of women and 18% of men investigated had already been subjected to aggression during their relationships.

A multi-country study of women's health and domestic violence (Gracia-Moreno C. et al, 2006) found a 3.7 to 53.7% prevalence of physical or sexual violence perpetrated by an intimate partner in the previous 12 months in Serbia and Montenegro and rural parts of Ethiopia. In Brazil, the study evidenced a prevalence of 9.3% in the city of Sao Paulo and 14.8%in the sugarcane plantation region in the state of Pernambuco.

Schraiber et al. (2006) in a literature review of studies of violence in Brazil, found a greater emphasis on the issue of gender publications between 2000 and 2005 and study services

indicated a higher frequency of violence committed by the partner with rates ranging from 36% to 45% of women reporting physical violence at least once in a life time and from 9% to 19% for sexual violence.

Whitelead A. F. (2005) in a New Zealand study reported lifetime prevalence of physical or sexual abuse was 50.8%. The reported life time prevalence of physical abuse was 43.3% and that of sexual abuse was 32.2%. The reported prevalence of physical abuse within the last year was 13.3% of sexual abuse within the last year was 8.5% and of women reporting a lifetime history of physical abuse, 69% reported that her partner was the perpetrator/one of the perpetrators of abuse.

13 Objectives and Significance of Study

As we closely study this issue of violence against women the main objective would be;

To assess the prevalence of domestic violence in Kenya using three indicators that is sexual, physical and emotional forms of violence.

The significance of this study would be to find out from the three forms of violence i.e. sexual, physical , and emotional what variables among these; age, marital status, education level, occupation, religion, region, residence and wealth index, give us the parsimonious models for each form of violence.

1.4 Methodology

Binary logistic regression will be used to assess the unconditional associations of covariates introduced either as categorical, ordinal or interval variable, with main dependent variables (sexual, physical and emotional forms of violence). Age adjusted odds ratios (ORs), their 95% CIs and p-values will be calculated. A p-value of < 0.05 will be considered as statistically significant. Multivariable-adjusted logistic regression models will be used to assess the independent association of covariates with main outcome measures. In all cases, to test for the appropriateness of the logistic regression models used.

1.5 Definition of terms

Women. The focus for this research, and thus the working definition of—women is females 15 years old or above, whether married or unmarried.

Violence against women. In accordance with the United Nations Declaration on the Elimination of Violence Against Women of 1993 (A/RES/48/104), adopted by the General Assembly as

any act of gender-based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or private life.

The General Assembly Resolution on the Elimination of Domestic Violence Against Women (A/RES/58/147) recognizes that —domestic violence can include economic deprivation and isolation and that such conduct may cause imminent harm to the safety, health or well-being of women.

The same definition was affirmed in the Beijing Platform of Action of 1995, which further delineates the categories of family violence, community violence, and state violence:

Violence against women shall be understood to encompass, but not be limited, to the following:

1. Physical, sexual, and psychological violence occurring in the family, including battering, sexual abuse of female children in the household, dowry-related violence, marital rape, female genital mutilation, and other traditional practices harmful to women, non-spousal violence, and violence related to exploitation;

2. Physical, sexual, and psychological violence occurring within the general community, including rape, sexual abuse, sexual harassment, and intimidation at work, in educational institutions, and elsewhere, trafficking in women, and forced prostitution;

3. Physical, sexual, and psychological violence perpetrated or condoned by the State, wherever it occurs.

Domestic violence. Domestic violence takes place between intimate partners as well as between family members (for example, mothers-in-law and daughters-in-law, brothers and sisters, fathers and daughters). Domestic violence may include sexual, physical, and psychological (emotional) abuse.

Gender-based violence. This is an overall term for any harm that is perpetrated against a person's will and that results from power inequities that are based on gender roles. Globally, gender-based violence always has a greater negative impact on women and girls; thus, the term is often used interchangeably with violence against women.

Intimate partner. Intimate partners may or may not be cohabitating, and the relationship need not involve sexual activities. It includes current or former spouses (legal and common-law), and non-marital partners (boyfriend, girlfriend, same-sex partner, dating partner).

Sexual violence. This term includes an attempt at or a completed sex act without consent or involving a victim unable to consent or refuse, abusive sexual contact (intentional sexual touching directly or through clothing), or non-contact sexual abuse (acts such as voyeurism, intentional exposure of an individual to exhibitionism, verbal or behavioral sexual harassment, threats of sexual violence to accomplish some other end, or taking nude photographs of a sexual nature of another person without his or her consent or knowledge).

CHAPTER 2

MODEL OF STUDY

2.1 Theoretical background

The logistic model provides a method for modeling binary response variables taking values 1 and 0 that is following a binomial distribution. Logistic or logit function is used to transform an 'S' shaped curve into an approximately straight line and to change the range of the protection from 0-1 to $-\infty$ to $+\infty$. The logit function is defined as the natural log of odds of the response i.e.

$$\text{Logit}(p) = \ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \dots + \beta_q X_q$$

From the above equation then we can rewrite

$$p(X_1, X_2, \dots, X_q) = \frac{\exp(\beta_0 + \beta_1 X_1 + \dots + \beta_q X_q)}{1 + \exp(\beta_0 + \beta_1 X_1 + \dots + \beta_q X_q)}$$

The logit function can take any real value but the associated probability' lies between [0,1].

The parameter β_j associated with the explanatory variable X_j is such that $\exp(\beta_j)$ is the odds that the response variable takes the value one when X_j increases by one, conditional on the other explanatory variables remaining constant.

The parameters of the logistic regression model (the vector of regression coefficient β) are estimated by maximum likelihood.

CHAPTER 3

APPLICATION AND CONCLUSIONS

3.1 Data source and Assumptions

The data source is, the Kenya Demographic Health Survey, 2003 since it is then that for the first time that the questions for domestic violence were included. The survey only covers domestic violence occurring within household. The Demographic and Health Surveys utilized a two-stage sample design. The first stage involved selecting sample points (clusters) from a national master sample maintained by Central Bureau of Statistics (CBS) the fourth National Sample survey and Evaluation Programme (NASSEP) IV. In 2003, a total of 400 clusters, 129 urban and 271 rural, were selected. From these clusters, the desired sample of households was selected using systematic sampling methods. Given the sensitivity of the matter, several steps were taken to ensure validity of the data and security of respondents and interviewers.

The need for establishing rapport with the respondent and ensuring confidentiality and privacy during the interview is important for the entire survey, but is critical in ensuring the validity of the data on domestic violence. Complete privacy is also essential for ensuring the security of the respondent and the interviewer. Asking about or reporting violence, especially in households where the perpetrator may be present at the time of interview, carries the risk of further violence.

Given these concerns related to the collection of data on violence, organizers of the 2003 KDHS took the following steps to ensure the validity of the data and the security of respondents and interviewers:

- The module was specially designed to allow the interviewer to continue the interview only if privacy was ensured. If privacy could not be obtained, the interviewer was instructed to skip

the module, thank the respondent, and end the interview. In Kenya, less than 2 percent of women selected for interview with the module could not be interviewed because of security considerations.

- Only one eligible woman in each selected household was administered the questions on domestic violence. In households with more than one eligible woman, the woman administered the module was randomly selected through a specially designed simple selection procedure. By interviewing only one woman in each household with the module, any security breach due to other persons in the household knowing that information on domestic violence was given was minimized.

- Informed consent of the respondent was obtained for the survey at the start of the individual interview. In addition, at the start of the domestic violence section, each respondent was read a statement informing her that she was now going to be asked questions that could be personal in nature because they explored different aspects of the relationship between couples. The statement assured her that her answers were completely confidential and would not be told to anyone else and that no one else in the household would be asked these questions.

Research on violence suggests that the most common form of domestic violence for adults is spousal violence. Thus, spousal violence was measured using a modified and greatly shortened Conflict Tactics Scale (CTS) (Strauss, 1990). The CTS scale has been found to be effective in measuring domestic violence and can be easily adapted for use in different cultural situations. In the 2003 KDHS, spousal violence was measured using the following set of questions:

Does/Did your (last) husband/partner ever—

- a) Push you, shake you, or throw something at you?
- b) Slap you or twist your arm?
- c) Punch you with his fist or with something that could hurt you?
- d) Kick you or drag you?
- e) Try to strangle you or burn you?
- f) Threaten you with a knife, gun, or other type of weapon?
- g) Attack you with a knife, gun, or other type of weapon?
- h) Physically force you to have sexual intercourse even when you did not want to?
- i) Force you to perform types of other sexual acts you did not want to?

The questions were asked with reference to the current husband for women currently married and the last husband for women not currently married. Women could answer with "yes" or "no" to each item, and in cases when the answer was "yes," women were asked about the frequency of the act in the 12 months preceding the survey. A "yes" answer to one or more of items *a to g* constitutes evidence of physical violence, while a "yes" answer to items *h or i* constitutes evidence of sexual violence.

A similar approach was used to measure the prevalence of emotional violence. Respondents were asked the question—

Does/Did your last husband ever:

- a) Say or do something to humiliate you in front of others?
- b) Threaten you or someone close to you with harm?

Women could answer "yes" or "no" to each item, and for items they answered "yes" to, they were asked about frequency of occurrence in the 12 months preceding the survey.

This approach of asking separately about specific acts has the advantage of not being affected by different understandings of what constitutes violence. A woman has to say whether she has, for example, ever been slapped, not whether she has ever experienced any violence. All women would probably agree on what constitutes a slap, but what constitutes a violent act or is understood as violence may vary across women as it does across cultures. In fact, summary terms such as "abuse" or "violence" were avoided in training and not used at all in the title, design, or implementation of the module. This approach has the advantage of giving the respondent multiple opportunities to disclose any experience of violence and, if the different violent acts included in the list are chosen carefully, also allows the assessment of the severity of violence.

In addition to spousal violence, women were asked whether they had experienced violence at the hands of anyone other than their current or last husband: "From the time you were 15 years old, has anyone other than your (current/last) husband hit, slapped, kicked, or done anything else to hurt you physically?" Women who responded "yes" to this question were asked who had done this and the frequency of such violence during the 12 months preceding the survey.

Although this approach to questioning is widely considered to be optimal, the possibility of some underreporting of violence cannot be entirely ruled out in any survey. Caution should always be exercised in interpreting not only the overall prevalence of violence data, but also differentials in prevalence between subgroups of the population. Although a large part of any substantial difference in prevalence of violence between subgroups undoubtedly reflects

actual differences in prevalence, differential underreporting by women in the different subgroups can also contribute to exaggerating or narrowing differences in prevalence to an unknown extent.

In the 2003 KDHS, men were not asked about their experience of violence because of security reasons. However, women were asked whether they had ever hit, slapped, kicked, or done anything else to physically hurt their husband or partner at any time when he was not already beating or physically hurting them. They were further asked whether their husband/partner drinks alcohol or takes illegal drugs, which is often associated with violence.

3.2 Results

A summary of the frequencies for the three forms of violence is represented in the following tables;

Selection for domestic violence module

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Woman not selected	2218	27.1	27.1	27.1
	Woman selected and interviewed	5878	71.7	71.7	98.8
	Woman selected, but privacy not possible	80	1.0	1.0	99.8
	Woman selected, but not interviewed	19	.2	.2	100.0
	Total	8195	100.0	100.0	

After filtering out the women not selected for the domestic violence interview we remain with the following;

Selection for domestic violence module

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Woman selected and interviewed	5878	98.3	98.3	98.3
	Woman selected, but privacy not possible	80	1.3	1.3	99.7
	Woman selected, but not interviewed	19	.3	.3	100.0
	Total	5977	100.0	100.0	

Applying our model, that is ,the logistic regression model then having in mind that our independent variables are ; age, Marital Status, Education level, Occupation, Religion, Region, Residence and Wealth Index as our X1 to X8 respectively and the dependent

variables Y1 to Y3 as Sexual, Physical and Emotional respectively. Then our models are a matrix representation as follows;

VARIABLE	B	S.E.	Exp(B)	P-Value	Lower	Upper
MARITAL STATUS						
Never Married	<i>Reference</i>					
Married	<i>-39.918</i>	<i>2.388E7</i>	<i>.000</i>	<i>1.000</i>	<i>.000</i>	
Living Together	<i>-.834</i>	<i>.164</i>	<i>.434</i>	<i>.000</i>	<i>.315</i>	<i>.599</i>
Widowed	<i>-.690</i>	<i>.215</i>	<i>.502</i>	<i>.001</i>	<i>.329</i>	<i>.764</i>
Divorced	<i>-40.207</i>	<i>5.363E7</i>	<i>.000</i>	<i>1.000</i>	<i>.000</i>	
Not Living together	<i>.476</i>	<i>.276</i>	<i>1.609</i>	<i>.085</i>	<i>.937</i>	<i>2.762</i>
REGION						
Nairobi	<i>Reference</i>					
Central	<i>2.000</i>	<i>.608</i>	<i>7.388</i>	<i>.001</i>	<i>2.243</i>	<i>24.330</i>
Coast	<i>2.209</i>	<i>.598</i>	<i>9.110</i>	<i>.000</i>	<i>2.822</i>	<i>29.409</i>
Eastern	<i>1.531</i>	<i>.613</i>	<i>4.621</i>	<i>.013</i>	<i>1.390</i>	<i>15.362</i>
Nyanza	<i>2.909</i>	<i>.596</i>	<i>18.333</i>	<i>.000</i>	<i>5.702</i>	<i>58.942</i>
Rift Valley	<i>2.953</i>	<i>.596</i>	<i>19.168</i>	<i>.000</i>	<i>5.956</i>	<i>61.683</i>
Western	<i>2.253</i>	<i>.596</i>	<i>9.514</i>	<i>.000</i>	<i>2.959</i>	<i>30.593</i>
North Eastern	<i>2.933</i>	<i>.596</i>	<i>18.786</i>	<i>.000</i>	<i>5.847</i>	<i>60.364</i>
EMPLOYMET						
Not Working	<i>Reference</i>					
Prof. Tech. Manager	<i>-.680</i>	<i>.239</i>	<i>.507</i>	<i>.004</i>	<i>.317</i>	<i>.809</i>
Clerical	<i>-.644</i>	<i>.342</i>	<i>.525</i>	<i>.060</i>	<i>.269</i>	<i>1.027</i>
Sales	<i>-.066</i>	<i>.442</i>	<i>.937</i>	<i>.882</i>	<i>.394</i>	<i>2.226</i>
Agriculture	<i>-.005</i>	<i>.239</i>	<i>.995</i>	<i>.983</i>	<i>.623</i>	<i>1.590</i>
House hold	<i>.159</i>	<i>.228</i>	<i>1.172</i>	<i>.487</i>	<i>.749</i>	<i>1.833</i>
Services	<i>.062</i>	<i>.326</i>	<i>1.064</i>	<i>.848</i>	<i>.562</i>	<i>2.016</i>
Skilled Manual	<i>-.333</i>	<i>.379</i>	<i>.717</i>	<i>.380</i>	<i>.341</i>	<i>1.507</i>
Unskilled Manual	<i>-39.141</i>	<i>4.107E8</i>	<i>.000</i>	<i>1.000</i>	<i>.000</i>	
CONSTANT	<i>-3.382</i>	<i>.645</i>	<i>.034</i>	<i>.000</i>		

Table 1: Table of effects for the best fitting Logistic regression model for Sexual Violence

VARIALE	B	S.E.	Exp(B)	P-Value	Lower	Upper
AGE						
15-19	<i>Reference</i>			<i>.000</i>		
20-24	<i>-.715</i>	<i>.187</i>	<i>489</i>	<i>.000</i>	<i>.339</i>	<i>.706</i>
25-29	<i>-.345</i>	<i>.151</i>	<i>.708</i>	<i>.022</i>	<i>.527</i>	<i>.952</i>
30-34	<i>-.019</i>	<i>.147</i>	<i>.981</i>	<i>.898</i>	<i>.736</i>	<i>1.309</i>
35-39	<i>-.024</i>	<i>.150</i>	<i>.976</i>	<i>.871</i>	<i>.727</i>	<i>1.310</i>
140-44	<i>.238</i>	<i>.156</i>	<i>1.269</i>	<i>.127</i>	<i>.934</i>	<i>1.722</i>
4549	<i>.195</i>	<i>.162</i>	<i>1.216</i>	<i>.228</i>	<i>.885</i>	<i>1.671</i>
MARITAL STATUS						
Never Married	<i>Reference</i>					
Married	<i>-41.006</i>	<i>2.388</i> <i>E7</i>	<i>.000</i>	<i>1.000</i>	<i>.000</i>	<i>.</i>
Living Together	<i>-.812</i>	<i>.136</i>	<i>.444</i>	<i>.000</i>	<i>.340</i>	<i>.580</i>
Widowed	<i>-.696</i>	<i>.175</i>	<i>.499</i>	<i>.000</i>	<i>.354</i>	<i>.703</i>
Divorced	<i>-41.719</i>	<i>5.382</i> <i>E7</i>	<i>.000</i>	<i>1.000</i>	<i>.000</i>	<i>.</i>
Not Living together	<i>.492</i>	<i>.247</i>	<i>1.636</i>	<i>.046</i>	<i>1.008</i>	<i>2.654</i>
REGION						
[Nairobi	<i>Reference</i>					
Central	<i>.137</i>	<i>.230</i>	<i>1.147</i>	<i>.551</i>	<i>.730</i>	<i>1.802</i>
[Coast	<i>.265</i>	<i>.230</i>	<i>1.303</i>	<i>.249</i>	<i>.830</i>	<i>2.045</i>
Eastern	<i>-.541</i>	<i>.199</i>	<i>.582</i>	<i>.007</i>	<i>.394</i>	<i>.860</i>
Nyanza	<i>.004</i>	<i>.233</i>	<i>1.004</i>	<i>.986</i>	<i>.636</i>	<i>1.584</i>
Rift Valley	<i>.819</i>	<i>.231</i>	<i>2.269</i>	<i>.000</i>	<i>1.443</i>	<i>3.568</i>
i Western	<i>.189</i>	<i>.220</i>	<i>1.208</i>	<i>.391</i>	<i>.784</i>	<i>1.861</i>
North Eastern	<i>1.218</i>	<i>.226</i>	<i>3.380</i>	<i>.000</i>	<i>2.172</i>	<i>5.258</i>
EDUCATION LEVEL						
No Education	<i>Reference</i>					
Pnmary	<i>1.034</i>	<i>.196</i>	<i>2.812</i>	<i>.000</i>	<i>1.917</i>	<i>4.126</i>
Secondary	<i>.992</i>	<i>.172</i>	<i>2.698</i>	<i>.000</i>	<i>1.927</i>	<i>3.777</i>

Higher	<i>.552</i>	<i>.179</i>	<i>1.737</i>	<i>.002</i>	<i>1.223</i>	<i>2.466</i>
VARIALE	B	S.E.	Exp(B)	P-Value	Lower	Upper
RELIGION						
Catholic	<i>Reference</i>					
Protestant	<i>1.934</i>	<i>1.052</i>	<i>6.919</i>	<i>.066</i>	<i>.879</i>	<i>54.434</i>
Muslim	<i>1.787</i>	<i>1.051</i>	<i>5.969</i>	<i>.089</i>	<i>.761</i>	<i>46.822</i>
No Religion	<i>1.542</i>	<i>1.062</i>	<i>4.672</i>	<i>.147</i>	<i>.583</i>	<i>37.463</i>
Other	<i>1.685</i>	<i>1.071</i>	<i>5.395</i>	<i>.116</i>	<i>.661</i>	<i>44.021</i>
CONSTANT	<i>-2.676</i>	<i>1.097</i>	<i>.069</i>	<i>.015</i>		

Table 2: Table of effects for the best fitting Logistic regression model for Physical Violence

VARIABLE	B	S.E.	Exp(B)	P-Value	Lower	Upper
AGE						
15-19	<i>Reference</i>					
20-24	1.409	.416	.244	.001	.108	.553
25-29	-1.626	.327	.197	.000	.104	.374
30-34	-.591	.271	.554	.029	.325	.942
35-39	-.358	.270	.699	.184	.412	1.185
40-44	-.205	.279	.815	.462	.472	1.407
45-49	-.166	.288	.847	.565	.481	1.491
MARITAL STATUS						
Never Married	<i>Reference</i>					
Mamed	-39.084	2.364E7	.000	1.000	.000	a
Living Together	-1.902	.202	.149	.000	.100	.222
Widowed	-1.295	.287	.274	.000	.156	.481
Divorced	-40.221	5.351E7	.000	1.000	.000	I
Not Living together	.352	.311	1.422	.258	.772	2.618
REGION						
Nairobi	<i>Reference</i>					
Central	1.818	.678	6.157	.007	1.629	23.274
Coast	1.131	.641	3.099	.078	.882	10.888
Eastern	.968	.655	2.634	.140	.729	9.518
[Nyanza	1.165	.653	3.205	.074	.891	11.525
Rift Valley	2.433	.619	11.390	.000	3.383	38.349
Western	2.215	.611	9.166	.000	2.766	30.375
North Eastern	2.448	.618	11.561	.000	3.442	38.832
WEALTH INDEX						
Poorest	<i>Reference</i>					
Poorer	.762	.261	2.143	.004	1.285	3.577
Middle	.469	.261	1.598	.072	.958	2.666
Richer	.811	.260	2.250	.002	1.352	3.742
Richest	.655	.256	1.925	.010	1.166	3.177
CONSTANT	-3.153	.687	.043	.000		

I able 3: Table of effects for the best fitting Logistic regression model for Emotional Violence

From Table 1; the final model for Sexual Violence that was fit to the was given by

$$\text{Logit } (p) = 00 - 01X1 - 02X2 - 03X3$$

Where $X1$ is Marital Status, $X2$ is the Region and $X3$ is Employment. This was arrived at using a backward stepwise selection method.

From Table 2; the final model for Physical Violence that was fit to the was given by

$$\text{logit } (p) = 1?0 + P \mid X1 + 02X2 - 03X3 + 0AX4 + 05X5$$

Where $X1$ is Age, $X2$ is Marital Status, $X3$ is the Region, $X4$ is the Education Level and $X5$ is Religion. This was arrived at using a backward stepwise selection method.

From Table 3; the final model for Emotional Violence that was fit to the was given by

$$\text{Logit } (p) = 00 - p \mid X1 + 02X2 + 03X3 + /54X4$$

Where $X1$ is Age, A^2 is the Marital Status, $X3$ is the Region and $X4$ is the Wealth Index. This was arrived at using a backward stepwise selection method.

3.3 Conclusions and Recommendations

From the three parsimonious models attained, all the three indicate that Marital Status and the Region from which the women considered come from are both variables that determine the prevalence of violence against women for sexual, physical and emotional violence.

According to each of the models, the following recommendations are therefore given.

1. Perpetrator programmes as an alternative means of custody .One has to make sure though that there is tangible and discernable indicator of effectiveness.
2. Multifaceted survey including children and university students to eventually produce a multitude of original findings important to potential determinants of domestic violence.
3. Effective primary and secondary prevention strategies are needed in addition to the adequate funding the necessary tertiary prevention approaches to address the epidemic of IPV.

Primary prevention strategies should focus on public health eg anti smoking and anti violence campaigns.

Secondary prevention strategies should focus on screening and an effective intervention to stop disease progression.

Tertiary prevention for IPV includes battered women's shelters, batterer treatment programs, hotlines, support groups, law enforcement and legal or judicial responses intention being to reduce mortality (murder) or disability.

4. Mass media programs to raise public awareness of the magnitude of DV.
5. Implement Abuse Assessment Screen in our healthcare facilities to help in comprehensive data acquisition.

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