

# Does Emotional Intelligence Moderates The Effect of Domestic Violence on Women Health Status? A Case Study of District Rawalpindi

Tahseen Ajaz\* and Muhammad Tariq Majeed†

## Abstract

*Women are more vulnerable than men in Asian societies. Women are more exposed to domestic violence (DV) specifically intimate partner violence (IPV). Consequences of domestic violence are the risk factors of health which victimized women face during and after violence. They might have bad physical health and poor mental health. Current research disentangles the effects of domestic violence/intimate partner violence on health status of married women of District Rawalpindi, Pakistan. Study strongly correlated DV/IPV with poor health of women specifically her mental health deteriorates more than overall and physical health. Her well-being is affected adversely. Study reveals that 47% of respondents are suffering from bad mental health. Possible factors of violence detected by this survey are husband dominance, marital conflicts and less decision making power with women. This research also hypothesized that emotional intelligence (EI) moderates the impact of violence on health state of women. So it is evident that EI is useful to mitigate bad effects of verbal or physical abuses a women face.*

**Keywords:** Domestic Violence, Emotional Intelligence, Victimized Women, Mental Health, Physical Health, Happiness

## Introduction

Violence against women (VAW) has serious health implication that are faced by many women directly in the form of serious injuries, disability and death and indirectly through variety of health issues such as stress-induced physiological behavior and abusive relationships. Gender based violence (GBV) is a term used by the United Nations and other international organizations, and is often referred to as violence against women. GBV and violence against women is a global phenomenon that gains much interest among researchers in both developing and developed countries. The concept of domestic violence (DV) is multidimensional, researchers have explained this concept according to their own understanding and research framework but still they face challenge to have its operational definition.

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\* Tahseen Ajaz , PhD research scholar of Economics, Quaid I Azam University, Islamabad, Pakistan. Email:[sheenasatti@gmail.com](mailto:sheenasatti@gmail.com)

† Dr. Muhammad Tariq Majeed, Assistant Professor of Economics, Quaid I Azam University, Islamabad, Pakistan, respectively.

Violence against women (VAW) is well-defined as “any act ... 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 in private life” (United Nations, 1993). Domestic violence (DV) is an important aspect of women’s welfare. DV has several health (physical & psychological) and social consequences for women (WHO, 2002). Violence and assault against women within the community and within intimate relations have potential direct health effects like injury and physical disorders and indirect health issues as well that contribute to the expansion of future health problems (arthritis, asthma, chronic pain, migraine, heart disease and gynecological problems (Tjaden & Thoennes, 1998; Coker *et al.*, 2000).

According to Pakistan Demographic Health Survey (2012-13), one in three women are likely to have experience of intimate partner violence (IPV) and assault in their lifetime. Victimized women are at higher risk of health hazards like unintended pregnancies, abortions, low birth weight babies, mental disorders and sleep disorders. The National Commission on the Status of Women Pakistan (2013) identify VAW women as an important area of research. This commission assesses and develops standardised indicators such as physical violence, harmful customary practices, psychological violence, sexual violence, economic violence, violence against women in the political arena, of violence against women. In the period of 2012-2013, a total of 16,879 cases were reported violence against women and out of these 23% were victimised by sexual assault.

Emotional intelligence (EI) is the best predictor of getting success and benefit in any domain of life (whether it is intimate relationships or other organizational issues) (Goleman, 1995). The concept of emotional intelligence gets attention of many researchers after the definition explained by Goleman (1995) in many other popular books (Cooper & Sawaf, 1998; Gottman & Declaire, 1998). EI is also a major factor determining the health of individuals, societies and nations. There are various definitions of EI such as the ability to monitor one’s own and other peoples’ emotions, to discriminate between different emotions and label them appropriately and to use emotional information to guide thinking and behavior. Some view it as EI is the area of cognitive ability that facilitates interpersonal behavior. Goleman (1995) describes EI as a person's ability to manage his feelings so that those feelings are expressed appropriately and effectively. According to Goleman, emotional intelligence is the largest single predictor of success in the workplace.

*Research Questions*

In current study, we intend to address the issues related to DV/IPV and the association of DV with physical health, mental health and well-being of women in District Rawalpindi, Pakistan. We hypothesized that women victims of any form of DV will be in poor physical and mental health. Specifically, we also predict that victims of DV/IPV have high mental disorders, suffer from certain diseases and have physical health impairment, less access to medical facilities in case of injury. This study tries to answer these questions: **(1)** Is DV negatively associated with women's health status? **(2)** Does emotional intelligence moderates/mitigates the effects of DV/IPV on health status?

**Literature Review**

Understanding VAW is a complex phenomenon these days. Women are likely to be more vulnerable to violence as compared to men. The violence starts from their pre-birth periods (sex selective abortions) and continues in their whole life span (childhood, adolescence, their reproductive age and beyond). Understanding the different types of violence that female face in their life is significant for prevention, policy making and services for survivors. The Human Rights Commission of Pakistan has reported that 80% of wives in rural Punjab face violence from their husbands, and nearly 50% of wives in developed urban areas admitted that their husbands beat them. (US State Department Human Rights Report 2010: Pakistan).

*Domestic Violence/ Intimate Partner Violence & Women's Health*

Various studies have shown the large social and economic costs of DV against women (Carrilo, 1992, Hiese, *et al.*, 1999). Walby (2004, 2005) argues that DV has overwhelming effects on individuals as well as society along with the costs associated with this type of violence. The costs associated with this are: services costs provided by police, health care systems, other civil services costs, loss of economic costs due to victims who are employed and mainly the cost of pain and suffering borne by the victims (Miller *et al.*, 1996). All these costs are partly borne by the state, employers and the victims themselves.

Gender-based abuse is in debate from than 50 years in sociology, criminology, anthropology and psychological areas. Many theorists emphasize that husbands beat their wives due to poor impulse control (Miller, 1994; Crowell & Burgess, 1996). Following Belsky (1980), Carlson (1984), Edleson & Tolman (1992) and Corsi (1994); Heise (1998) takes one step further and uses ecological concept for GBV. Ecological framework is a multifaceted phenomenon based upon personal and socio-cultural factors used for VAW which comprise of macro-system, ecosystem, micro-system and personal history.

The factors attribute to abusive behavior in men might be the abuse he faced in his childhood (Dodge *et al.*, 1990) or violent behavior by father figure (Whiting & Edwards, 1965; Ember & Ember, 1993; Miedzian, 2002; Fulu & Miedema, 2015) and now he urges to have control over someone. Secondly, he might belong to a system where male prove their dominance (Levinson, 1989) by beating the women. Thirdly, he might lose his job and his woman (wife) takes over the responsibility and becomes empower. All these factors combine to arise conflict in the relationships and become the root cause of violence. These factors act as ecosystem stressors.

DV is considered as personal matter in Asian economies, argued by Fikree & Bhatti (1999). It is a matter of shame and blame for women. Authors view that, it is difficult to measure exactly to what extent DV affects health of victimized women. DV mainly affects physical, mental and psychological health along with some gynecological issues. Results significantly show that DV in Karachi is at alarming stage and women are suffering from physical and mental disorders.

Violence and assault against women within the community and also within intimate relations have potential direct health effects like injury and physical disorders and contribute to the expansion of future health problems such as arthritis, asthma, chronic pain, migraine, gastrointestinal issues, heart disease and gynecological problems (Tjaden & Thoennes, 1998; Coker *et al.*, 2002; Campbell, 2002; Walby & Alen, 2004), sleep disorders (Humphreys & Lee, 2005) and more dangerous outcome of DV is death (Povey, 2004).

Campbell *et al.*, (2002) explain that women who face the psychological violence report lower self-rated health and are at greater health risk as compare to those who have less chance of violence. IPV has long term health issues on victim women. In a similar study of self-identified women of Latina, reports IPV are experience three times more posttraumatic stress disorder than those who does not report it (Fedovskiy *et al.*, 2008; Ouellet-Morin *et al.*, 2015).

VAW is a worldwide issue. According to WHO facts and figures, 1 out of every 3 women (35%) worldwide experience IPV either in the form of physical or sexual assault in their life time.<sup>‡</sup> Such violence effect, physical, sexual and psychological health of women (Garcia-Moreno *et al.*, 2006; Abramsky *et al.*, 2011). In WHO study, Garcia-Moreno *et al.* (2006) view that physical violence by intimate partner result in memory loss, problems in performing daily household activities, other body pains, severe injuries, reproductive issues (Evins & Chescheir,

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<sup>‡</sup><http://www.who.int/mediacentre/factsheets/fs239/en/>

1996; Plichta & Abraham, 1996; Glander *et al.*, 1998; Cleland & Harlow, 2003) and above all mental health of his female counterpart affects badly (Campbell *et al.*, 2002; Plichta, 2004; Silverman *et al.*, 2006; Sharps *et al.*, 2007; Ellsberg *et al.*, 2008; Abramsky *et al.*, 2011; Wong & Mellor, 2014; Levendosky *et al.*, 2018). So, general health of victimized women is very poor.

IPV comprises violence amongst people in a close relationship, including recent and previous spouses. Garcia-Moreno *et al.* (2006, 2015) discuss that IPV is directly associated with physical health issues such as injuries, chronic pains, and mortality (Plichta & Falik, 2001; Campbell, 2002; Campbell *et al.*, 2002) and indirectly associated with mental illness and other health outcomes. Mental health issues involve anxiety, emotional distress, depression and stress then lead to suicidal attempts subject to severity of violence (Fischbach & Herbert, 1997; Coker *et al.*, 2002; Patel, 2007; Guerin & de Oliveira Ortolan, 2017).

In a theoretical study, Humphreys (2007) argues that IPV results in health inequalities in UK (WHO, 2002). Poverty and ethnic class differences are main determinants of DV while there is lack of social work for the classes. Social divisions in UK cause health inequalities. In short, health inequality encompasses the area of VAW. Similarly, absence of social work in this area is also a pinned point. As social workers are in the position to affect and highlight such issues. Their role and intervention can lessen the extent of IPV.

On the similar lines, Abramsky *et al.* (2011) elaborate the factors associated with IPV. Data is collected from WHO multi-country study and its comparability is checked through questionnaires and interviews. Results depict that IPV risk reduces if male counterpart has completed secondary education as compared to individuals completing only primary education while lowest risk is associated with those having higher education. Early life experience of abuse by children, girls married in early age, inequality in education between a women and man, supportive attitude towards husband in beating wife, use of alcohol, male with aggressive behavior, women having children from previous relationship, extramarital relationship and dowry are associated with increased risk of IPV while higher socioeconomic status is associated with low risk of IPV. Study suggests that to reduce IPV, preventive strategies are to be formulated by local government, civil society and international community.

Women who experience violence during reproductive age are at higher risk of unintended pregnancy, chances of miscarriage and give low birth weight babies (Campbell *et al.*, 2002; Coker *et al.*, 2002; Pallitto & O'Campo, 2005; Silverman *et al.*, 2007; Ellsberg *et al.*, 2008;

O'Donnell *et al.*, 2009). Aizer (2011) collected data from maternal hospitals from 1991-2001 and studied the effects of assault on pregnant women and health of new born. Women victimized of DV/IPV suffer from low health and earning (Aizer, 2010). Also social status of women account for being victim, women with low income back ground are at direct physical assault from their counterpart during pregnancy. On the other hand, violence affects infant health during pregnancy and estimates show that babies born with low weights on average 163gm less than normal which is associated with high external costs. Costs associated are first with complicated deliveries of assaulted pregnant women, then on medical care of low weight infant in early days or first year of birth.

In a companion study, Pallitto *et al.* (2013) analyze the effects of IPV on behavior of women on seeking abortion where unintended pregnancies occur. Using population data by conducting a survey in 10 countries, the study finds strong association between physical violence, sexual abuse and unintended pregnancy. These unintended pregnancies occur due to sexual violence and fear of women to negotiate with her husband's on use of contraceptive methods which lead to abortions mostly (Pallitto & O'Campo, 2005; Silverman *et al.*, 2007; Miller *et al.*, 2010; Burton *et al.*, 2016). Abortion rate can be reduced as a result of reduction in violent behavior of intimate partners. Findings also show that unsafe abortion can cause serious health effects like maternal mortality and also creates complications and sometimes lead to death (WHO, 2005; Singh *et al.*, 2015).

DV is characterized as a violent crime (Dodd *et al.*, 2004; Howard *et al.*, 2010; Trevillion *et al.*, 2012) and cause serious physical and mental health disorders. Ouellet-Morin *et al.* (2015) document severe mental health effects of IPV after cure of physical injuries. Depression, stress post-traumatic stress and mental disorders are four times higher in victims of violence than an average person (Golding, 1999; Campbell, 2002; Coker *et al.*, 2002; Pico-Alfonso *et al.*, 2006; Holt *et al.*, 2008; Beydoun *et al.*, 2017). The study aims to empirically test the association of IPV on women's mental health without and with prior history of depression, the association of IPV and maltreatment in childhood, and whether IPV causes depression only or other issues like psychosis spectrum symptoms. Empirical findings indicate that victimized women suffer from depression as well as psychosis spectrum symptoms. So, the physicians with such patients should investigate about past and present history of depression so that proper care and treatment can be given to them (Howard *et al.*, 2010; Feder *et al.*, 2011; WHO, 2013; García-Moreno *et al.*, 2015).

*Emotional Intelligence and Health*

The ability to observe own and other person's emotions is also a virtuous predictor of health. Numerous studies Schutte *et al.* (1998), Austin *et al.* (2005), Schutte *et al.* (2007) Abe (2011) assert that understanding and discrimination of own and other emotions and ability to manage things accordingly plays a beneficial impact on health. So, emotional intelligence also an important factor which determine the health of individuals and it is the major predictor of success in the workplace (Goleman,1995). Various studies define emotional intelligence differently, some view it as cognitive ability that facilitates interpersonal behavior. Goleman (1995) describes emotional intelligence (EI) as a person's ability to manage his feelings and expressed them properly and effectively.

Lower EI is highly associated with increased alexia and decreased impulse control (Schutte *et al.*,1998). The study analyses the 346 participants of university students of the metropolitan area in the southeastern United States. Awareness, expression of emotions, depressed mood and ability to regulate emotions are used as a proxies of EI and finds that scale of emotional intelligence is negatively associated with alexia.

Austin *et al.* (2005) assess associations between EI at both the scale and subscale level. The study also finds many linkages among various variables that is alexia, life satisfaction, social network size and quality of these networks. The findings state that EI is negatively associated with alexia and consumption of alcohol and positively linked with life satisfaction, social network size and quality. EI is strongly related to social network size compare to personality. On the other hand, quality of social network, life satisfaction, alcohol consumption, visit of doctor consultations and health status are more powerfully related to personality. Trait emotional intelligence and health has causal relationship (Schutte *et al.*, 2007). The association between emotional intelligence and mental health is insignificant.

Marks *et al.* (2016) examine the mediating role of emotional intelligence in the relationship between adult insecure attachment and ill health. The survey based study used four sides of subjective health: somatic, anxiety/insomnia, social dysfunction and severe depression. Both anxious/insecure attachment and avoidant insecure attachment linked with lower EI, which then related to poorer subjective health outcomes. EI partly have the relationship between anxious insecurity and health outcomes. However, emotional intelligence plays a mediating role in relationship between avoidant insecurity and health outcomes. The results support prior expectations of the model in which insecure

attachment is allied with reduced emotional intelligence, which ultimately brings poor health outcomes.

**Methodology**

The conceptual framework adopted in this analysis is simply extension of Grossman model of health production function. Grossman (1972) claims that consumers demand good health when they invest in medical services. The utility depends on the initial stock of health and on the medical care in which the individual invests over time, so the health production function for utility is the function of individual inputs and medical care services

Then Erbsland *et al.* (1994) elaborate Grossman investment function and introduce environment as latent variable. Model takes fluctuations in environment to influence the rate at which an individual's stock of health depreciates. Similarly, Evans and Stoddart (1990) segregated environment into two aspects, that is, social and physical environment and extends the categories of health determinants given in The White Paper by Lalonde (1974).

The concept of social environment dates back to Durkheim's work on the relationship between society and health. By using the concept of suicide, Durkheim explains how 'social facts' pattern our lives and health, so individual behaviour depends not only on psychological foundation but also on social norms.

$$Health = f(Social\ Environment) \dots \dots \dots (D)$$

Social environment also features DV which adversely affects physical, psychological and mental health of women and creates stress (Morenoff *et al.*, 2001).

VAW effects women's mental and physical health badly and causes injuries, depression, gynecological issues and disabilities in women. Much of the DV is hidden from the society so its preventive measures are hard to take (Garcia-Moreno, 2001). Psychologists are of the view that psychological abuse has more devastating effect on physical and mental health than physical abuse (Shane & Elsberg, 2002). Heise *et al.* (1999) claim that women who experience violence or have experienced in their childhood are at greater health risk including their damage of behavior, post-traumatic stress, depression and low self-esteem (Humphreys, 2007).

$$Health = f(Domestic\ Violence) \dots \dots (D')$$

In daily life, people have to deal with different types of emotions effectively to increase their well-being. It is only possible if people are emotionally enough intelligent and think rationally to deal with all circumstances commendably (Martins *et al.*, 2010). Another feature of social environment is emotional intelligence, defined as the ability of an

individual being aware, to control and express emotions and to handle personal relationships. Ciarrochi *et al.* (2002) view that low level of emotional intelligence such as low thinking about feelings, low psychosomatic mindedness is associated to low mental stress while reverse holds if individual has strong feelings and thinking about anything (McCallum & Piper, 2000).

$$Health = f(Emotional\ Intelligence) \dots \dots (D''')$$

Does EI effectively moderate the relationship between women health and DV? Findings advocate the direct links of both violence and behavior on mental health. Nevertheless, there is little evidence if behavior and emotional EI such effects (stress and anxiety) on health. So the hypothesis of the study are:

- *H1a: Violence/victimization would be negatively associated with women health status.*
- *H2a: Emotional intelligence would be positively associated with women health status.*
- *H3a: Emotional intelligence would act as a moderator between violence and women health.*

*Empirical Model*

Fletcher (2010) extended Grossman (1972) input-output health production model. The study visualizes that violence is a potential cause of health expenditures or depreciation, as incremental changes in violence leads to increased health expenditures in terms of injuries. In the light of above conceptual framework the model has following form:

$$Health_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV_i + u_i \dots \dots \dots (3.1)$$

$$Health_i = \alpha_i + \alpha_1 X_i + \alpha_2 EI_i + u_i \dots \dots \dots (3.2)$$

$$Health_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV * EI_i + u_i \dots \dots (3.3)$$

*Physical Health*

To measure the physical health, we use self-rated health as an indicator of health. Whereas vector “X” includes demographic and socioeconomic factors.

$$PH_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV_i + u_i \dots \dots \dots (3.1a)$$

$$PH_i = \alpha_i + \alpha_1 X_i + \alpha_2 EI_i + u_i \dots \dots \dots (3.2a)$$

$$PH_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV * EI_i + u_i \dots \dots (3.3a)$$

*Mental Health*

To measure the mental health, we use self-rated mental health and an index of stress as an indicator of health. Whereas vector “X” includes demographic and socioeconomic factors of individuals.

$$MH_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV_i + u_i \dots \dots \dots (3.1b)$$

$$MH_i = \alpha_i + \alpha_1 X_i + \alpha_2 EI_i + u_i \dots \dots \dots (3.2b)$$

$$MH_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV * EI_i + u_i \dots (3.2b)$$

*Well-Being*

To measure the well-being of women, we use level of satisfaction with life and level of happiness as an indicator of well-being. Whereas vector “X” includes demographic and socioeconomic factors of individuals

$$HP_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV_i + u_i \dots \dots \dots (3.1c)$$

$$HP_i = \alpha_i + \alpha_1 X_i + \alpha_2 EI_i + u_i \dots \dots \dots (3.2c)$$

$$HP_i = \alpha_i + \alpha_1 X_i + \alpha_2 DV * EI_i + u_i \dots \dots \dots (3.3c)$$

Where, *PH* is physical health, *MH* is mental health, *DV* is domestic violence, *HP* is happiness, *EI* is emotional intelligence while *DV\*EI* is interactive term of domestic violence and emotional intelligence.

**Data and Construction of Variables**

In order to analyze the data, this section describes the data sources, data collection methods, definition and construction of variables. As the objective of this chapter is to find the impact of violence on health of married women. In this study, we use primary data to investigate the relationship between violence and health outcomes of married women of district Rawalpindi. A questionnaire is designed to collect the information about our study. Dependent variable is health status while main variables of interest are different forms of domestic violence that is physical, verbal and emotional abuse. On the other hand, demographic, socio-economic and environmental variables are also used in the analysis as covariates. Mean and standard deviation of the data is given in Appendix A-1.

*Health:*

To measure health outcomes, we take WHO constitution (1948) definition, where it states that, “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Health is dependent variable in this study. The question is taken from World Values Survey (2014), Pakistan Demographic Survey (2014) and Quality of Life Index (2015). Physical health is a state of health in which individuals have the ability to perform daily and occupational activities more specifically. We measure physical health of the respondent by asking the questions about mobility (Do you have any problem in walking?), usual activities (Do you have any problem in performing usual activities like work, study, and leisure activities etc.?) and pain (Do you have any pain/discomfort in your body?).

According to WHO, mental health is “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community”. We use self-

reported mental health as an indicator of mental health status. On the other hand, we measure well-being by using happiness as an indicator by following existing literature (Ryff, 1989; Diener *et al.*, 1999; Agarwala *et al.*, 2014; Diener *et al.*, 2017; Gómez *et al.*, 2017; Jayawickreme *et al.*, 2017; Michalos, 2017).

*Violence:*

The term VAW has been defined as the range of sexually, psychologically, and physically coercive acts used against women by current or former male intimate partners. (WHO, 1997). Violence and assault against women within the community and also within intimate relations have potential direct health effects like injury and physical disorders and contribute to the expansion of future health problems as well. DV has three categories which are emotional violence (EV), verbal abuse (VA) and physical violence (PV).

*Emotional Intelligence:*

Another independent variable is emotional intelligence. To investigate the link between EI and health outcome, data on EI is obtained by using Daniel Goldman’s survey. This scale obtained on 15 questions.

EI is the term defined by Goleman (1995), in his book “*Emotional Intelligence*”. The emotional intelligence is the ability to understand own and other’s emotions and manage own emotions in optimistic ways to release stress, communicate effectively, empathy with others, overcome challenges and to resolve conflicts. Goleman has identified five dimensions includes self-awareness, self-regulations, motivation, empathy and social skills. Table 1 gives the description of variables and their measurement in detail.

**Table 1: Description of Variables**

<b>Variables</b>	<b>Survey Question</b>	<b>Measurement</b>
<i>Health Status Dependent Variable</i>		
<b>Overall Health</b>	All in all, how would you describe your state of health in these days?	0 = Poor health 1 = Good health
<b>Physical Health</b>	What is your physical health status?	0 = Poor health 1 = Good health
<b>Mental Health</b>	What is your mental health status?	0 = Poor 1 = Good
<b>Well-Being</b>	Taking all things together would you say that you are happy or not in your life?	0 = Not happy 1 = Happy
<i>Violence (DV/IPV) Independent Variables</i>		
<b>Emotional Violence</b>	<b>Several questions were asked:</b>	1= Never
	Does your husband humiliate you in front of others?	2 = Rarely 3 = Occasionally
	Does your husband try to control all your freedom?	4 = Very often

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	Does your husband insult your family? Does your husband forcibly try to restrict your movements? Does your husband criticize you and put you down? Does your husband force you to do things against your will? Is your husband overly critical of daily things, such as your cooking, clothes, or appearance?	
<b>Verbal Abuse</b>	<b>Several questions were asked:</b> Does your husband verbally attack your personality? Does your husband speak to you differently in private and in public? Does your husband act as though you were attacking them when you try to explain your feelings? Do you feel as though your self-esteem and your self-confidence have decreased? Do you find yourself spending a lot of time working out either how not to upset your husband or wondering what you did or said which did upset your husband?	1 = Never 2 = Rarely 3 = Occasionally 4 = Very often
<b>Physical Violence</b>	Have you physically assaulted by your in laws (husband, mother in law, sister in law etc.)?	0 = Never 1 = Rarely 2 = Sometimes 3 = Frequently
<b>Emotional Intelligence</b>	How emotionally intelligent are you? (15 questions are asked from the respondents and are measured on the scale of 1-5).	1 = Always 2 = Often 3 = Sometimes 4 = Rarely 5 = Not at all
<b>Covariates</b>		
<b>HH Income</b>	What is your total family monthly income?	0 = None 1 = Below 10000 2 = 11000-25000 3 = 26000-50000 4 = 51000-75000 5 = 76000-100000 6 = Above 100000
<b>No of Children</b>		
<b>Marital Status</b>	What is your marital status?	1 = Married 2 = Widowed 3 = Divorced 4 = Separated
<b>Age</b>	What is your age?	1 = 18-25 2 = 26-35 3 = 36-50 4 = Above 50
<b>Life Events</b>	Have you enough food for three meals a day?	1 = Dissatisfied 2 = Uncertain

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		3 = Neutral
		4 = Satisfied
		5 = Very satisfied
<b>No of Hospital Visits</b>	In the last six months, how often do you visit the hospital?	1=Once in six month 2 = Once in a month 3 = Once in a week 4 = Daily
<b>Air Pollution</b>	From the list below which events affect your health more?	1= Too much rains 2 = Low temperature 3 = High temperature 4 = Floods 5= Drought 6 = Short rainfall 7 = Delay in rain 8 = Dry spells
<b>Women Empowerment</b>	How much you have decision making power in your children's education and marriage decisions?	1 = Mainly wife 2 = Wife & husband 3 = Mainly husband 4 = Someone else

*Statistical Analysis*

This analysis investigates the incidence of different types of violence (Emotional, verbal and psychological violence) and their links with physical health, mental health and well-being of married women aged between 16 to 65 years and more.

Descriptive analysis of the data reveals the existence of different forms of DV/IPV among married women. Association between health status of women and three forms of violence is explored through cross tabulation and logistic regressions. The dependent variable consisting of health outcomes is binary. Emotional violence, verbal abuse, physical violence, emotional intelligence and its interactions with three forms of violence along with covariates are independent variables. Demographic data including No. of children, marital status, age, No. of hospital visits, socio-economic data on HH income, life events, women empowerment and environmental data on air pollution is also obtained. These variables are entered into all regression models as covariates in statistical analysis.

All data is analyzed using Stata 12. There was missing data for non-respondents so it is excluded from the analysis. Out of 700 questionnaires, 504 are reported fully, the reason for non-participation of women in survey is mainly their fear of telling about family violence.

**Results of Descriptive Analysis**

We conduct descriptive analysis and then logistic regression to determine whether domestic violence/victimization produce health hazards in women of District Rawalpindi (Pakistan). We also intend to visualize the association between emotional intelligence and women health status and determine whether emotional intelligence moderates the effect of domestic violence on women health.

**Table 2: Frequency Distribution of Different Forms of Health Status (n = 504)**

Characteristics	Frequency (N)	Percent (%)
Overall Health		
<b>0</b>	159	31.55
<b>1</b>	345	68.45
Physical Health		
<b>0</b>	144	28.57
<b>1</b>	360	71.43
Mental Health		
<b>0</b>	233	46.23
<b>1</b>	271	53.77
Well-Being		
<b>0</b>	148	29.37
<b>1</b>	356	70.63

There were total 700 participants surveyed out of which 504 questionnaires were responded fully. The youngest women participant is of 16 years of age at the time of marriage and the eldest one at the time of marriage is of 33 years. Descriptive analysis show that one out of every four women report poor overall health (159/504), 31.55% of total sample (see Table 2). 71% women report physical violence which comprise assault by husband as well as in-laws. Almost half of the respondents (54%) report mental illness issues and 29% are unhappy in their married life due to DV/IPV.

**Table 3: Frequency Distribution of Domestic Violence Variables (n = 504)**

Characteristics	Frequency (N)	Percent (%)
Emotional Violence		
<b>&lt;16</b>	286	56.75
<b>17-24</b>	125	24.8
<b>&gt; 25</b>	93	18.45
Verbal Abuse		
<b>&lt;14</b>	256	50.8
<b>15-21</b>	141	27.98
<b>&gt;22</b>	107	21.23
Physical Violence		
<b>Never</b>	275	55
<b>Rarely</b>	45	9
<b>Sometimes</b>	63	12.6
<b>Often</b>	5	1
<b>Frequently</b>	112	22.4

As far as emotional violence is concerned, 12 questions were asked from the women, we have taken the sum of their responses and scale them as low (<16), moderate (17-24) and extreme emotional

violence (>25). Verbal abuse is also scaled like low, moderate and extreme where <14 ranges for lower level of abuse, 15-21 calls for moderate while >22 shows extreme level of verbal abuse to women from their intimate partner or in laws. Lastly, 45% of women reported physical violence (229/504) which includes those women who experienced physical violence rarely, sometimes and frequently in their married life (see Table 3). Table 4 gives descriptive analysis of covariates used in the study. Summary statistics of data is given in Appendix A-2.

**Table 4: Frequency Distribution of Covariates (n = 504)**

Characteristics	Frequency (N)	Percent (%)	Characteristics	Frequency (N)	Percent (%)
<b>Demographic Variables</b>			<b>Socio-Economic Variables</b>		
<i>No. of Children</i>			<b>HH Income</b>		
<b>No child</b>	15	2.98	No Income	5	0.99
<b>1</b>	93	18.45	>10000	61	12.10
<b>2</b>	113	22.42	11000-25000	199	39.48
<b>3</b>	77	15.28	26000-50000	125	24.80
<b>4</b>	138	27.38	51000-75000	77	15.28
<b>5</b>	52	10.32	76000-100000	15	2.98
<b>6</b>	16	3.17	<100000	22	4.37
<i>Marital Status</i>			<b>Life Events (enough food for three meals a day)</b>		
<b>Married</b>	461	91.47	Dissatisfied	5	0.99
<b>Widowed</b>	0	0	Uncertain	20	3.97
<b>Divorced</b>	22	4.37	Neutral	37	7.34
<b>Separated</b>	21	4.17	Satisfied	153	30.36
<i>Age</i>			Very Satisfied		
<b>18-25</b>	73	14.48	289		
<b>26-35</b>	201	39.88	57.34		
<b>36-50</b>	137	27.18	<b>Women Empowerment</b>		
<b>&lt;50</b>	93	18.45	Wife Dominance		
<i>No. of Hospital Visits</i>			201		
<b>No visit</b>	63	12.50	39.98		
<b>Daily</b>	91	18.06	Husband Dominance		
<b>Once in a week</b>	60	11.90	264		
<b>Once in a month</b>	122	24.21	60.13		
<b>Once in 6 months</b>	168	33.33	<b>Environmental Variable</b>		
			<b>Air Pollution</b>		
			Too much rains		
			166		
			32.94		
			Low Temperature		
			50		
			9.92		
			High Temperature		
			144		
			28.57		
			Floods		
			2		
			0.40		
			Drought		
			60		
			11.90		
			Short & Intense Rains		
			28		
			5.56		
			Delay in Rains		
			19		
			3.77		
			Dry Spells		
			35		
			6.94		

**Results of Logistic Regressions**

To empirically estimate health status and DV/IPV we are using logistic regressions as health variables are qualitative dichotomous. As coefficients of logistic regression cannot be interpreted we will move towards odd ratios to explain the direction of variables and marginal effects for magnitude of the model.

**Table 5: Overall Health, Domestic Violence & Emotional Intelligence**

VARIABLES	Overall Health	Overall Health	Overall Health	Overall Health	Overall Health	Overall Health	Overall Health
Emotional Violence	<b>-0.0332**</b> (0.0129)						
Verbal Abuse		<b>-0.0769***</b> (0.0174)					
Physical Violence			<b>-0.0835*</b> (0.0644)				
Emotional Intelligence				<b>0.154*</b> (0.106)			
Emotional Intelligence*					<b>0.00804*</b> (0.00505)		
Emotional Intelligence* Verbal Abuse						<b>0.0101*</b> (0.00605)	
Emotional Intelligence* Physical Violence							<b>0.0903*</b> (0.0524)
HH Income	<b>0.160*</b> (0.0904)	<b>0.195**</b> (0.0923)	<b>0.166*</b> (0.0924)	<b>0.134*</b> (0.0909)	<b>0.130*</b> (0.0913)	<b>0.133*</b> (0.0912)	<b>0.154*</b> (0.0911)
No of Children	0.0928 (0.0740)	0.0803 (0.0743)	0.0817 (0.0732)	0.0938 (0.0741)	0.0932 (0.0739)	0.0947 (0.0741)	0.0928 (0.0737)
Marital Status	-0.115 (0.154)	-0.0988 (0.153)	<b>-0.227*</b> (0.147)	<b>-0.237*</b> (0.148)	<b>-0.262*</b> (0.150)	<b>-0.263*</b> (0.150)	<b>-0.203*</b> (0.147)
Age	<b>-0.663***</b> (0.126)	<b>-0.652***</b> (0.127)	<b>-0.655***</b> (0.126)	<b>-0.665***</b> (0.126)	<b>-0.663***</b> (0.126)	<b>-0.661***</b> (0.126)	<b>-0.632***</b> (0.127)
Life Events	<b>-0.303**</b> (0.135)	<b>-0.404***</b> (0.143)	<b>-0.323**</b> (0.134)	<b>-0.271**</b> (0.133)	<b>-0.267**</b> (0.134)	<b>-0.260*</b> (0.134)	<b>-0.267**</b> (0.135)
No. of Hospital Visits	-0.0473 (0.0812)	-0.0826 (0.0843)	-0.0202 (0.0795)	-0.00659 (0.0792)	0.00309 (0.0798)	-0.00262 (0.0794)	-0.00805 (0.0794)
Air Pollution	<b>-0.0793*</b> (0.0494)	-0.0456 (0.0501)	<b>-0.0982*</b> (0.0503)	<b>-0.0837*</b> (0.0492)	<b>-0.0840*</b> (0.0492)	<b>-0.0812*</b> (0.0493)	<b>-0.0980*</b> (0.0504)
Women Empowerment	0.144 (0.147)	0.153 (0.150)	0.156 (0.147)	0.172 (0.148)	0.168 (0.148)	0.177 (0.148)	0.182 (0.147)
Constant	3.857*** (0.944)	4.767*** (1.022)	3.505*** (0.909)	3.194*** (0.904)	3.194*** (0.904)	3.141*** (0.906)	3.017*** (0.928)
Observations	504	504	500	504	504	504	500

Women who experienced emotional violence, verbal abuse and physical violence have adverse effects on health status of married women (see Tables 5,6,7 & 8). We then evaluate in column 4 of these tables whether emotional intelligence has any linkages with health status of women. Following Goleman (1995), we asked 15 questions to judge how emotionally intelligent these women are. We made a PCA of these questions and find that more the woman is emotionally strong, more improved her health status is.

**Table 6: Physical Health, Domestic Violence & Emotional Intelligence**

VARIABLES	Physical Health	Physical Health	Physical Health	Physical Health	Physical Health	Physical Health	Physical Health
Emotional Violence	<b>-0.0203*</b> (0.0131)						
Verbal Abuse		<b>-0.0631***</b> (0.0174)					
Physical Violence			<b>-0.160**</b> (0.0651)				
Emotional Intelligence				<b>0.290***</b> (0.111)			
Emotional Intell.*					<b>0.0146***</b> (0.00555)		
Emotional Intell.* Verbal Abuse						<b>0.0204***</b> (0.00662)	
Emotional Intell.* Physical Violence							<b>0.249***</b> (0.0607)
HH Income	<b>0.187**</b> (0.0922)	<b>0.219**</b> (0.0938)	<b>0.223**</b> (0.0953)	<b>0.160*</b> (0.0937)	<b>0.151*</b> (0.0939)	<b>0.155*</b> (0.0943)	<b>0.219**</b> (0.0964)
No of Children	-0.0717 (0.0759)	-0.0782 (0.0765)	-0.0798 (0.0762)	-0.0539 (0.0764)	-0.0578 (0.0760)	-0.0538 (0.0764)	-0.0513 (0.0776)
Marital Status	<b>0.418**</b> (0.169)	<b>0.469***</b> (0.169)	<b>0.336**</b> (0.164)	<b>0.326**</b> (0.164)	<b>0.297*</b> (0.165)	<b>0.290*</b> (0.165)	<b>0.391**</b> (0.164)
Age	<b>-0.672***</b> (0.129)	<b>-0.668***</b> (0.131)	<b>-0.663***</b> (0.130)	<b>-0.684***</b> (0.131)	<b>-0.674***</b> (0.131)	<b>-0.673***</b> (0.131)	<b>-0.603***</b> (0.134)
Life Events	<b>-0.203*</b> (0.133)	<b>-0.279**</b> (0.139)	<b>-0.235*</b> (0.132)	-0.166 (0.131)	-0.163 (0.131)	-0.146 (0.132)	-0.0917 (0.134)
No. of Hospital Visits	-0.0790 (0.0823)	<b>-0.113*</b> (0.0856)	-0.0777 (0.0821)	-0.0420 (0.0811)	-0.0282 (0.0813)	-0.0362 (0.0813)	-0.0521 (0.0832)
Air Pollution	<b>-0.0646*</b> (0.0500)	-0.0383 (0.0505)	-0.0510 (0.0512)	-0.0624 (0.0500)	-0.0629 (0.0498)	-0.0570 (0.0499)	-0.0389 (0.0527)
Women Empowerment	-0.0376 (0.150)	-0.0411 (0.152)	-0.0539 (0.151)	-0.0225 (0.150)	-0.0365 (0.150)	-0.0231 (0.151)	-0.0111 (0.152)
Constant	3.459*** (0.944)	4.293*** (1.020)	3.396*** (0.923)	2.990*** (0.910)	3.015*** (0.908)	2.914*** (0.913)	2.164** (0.951)
Observations	504	504	500	504	504	504	500

To test moderation effects by using interaction terms, we follow Aiken and West (1991), we take product of our main focused variables of domestic violence and emotional intelligence and use these product terms in our analysis. We find that there is significant interaction between women health status and emotional intelligence variables in envisaging emotional violence, verbal abuse and physical violence. We control the effect of demographic variables (No. of children, marital status, age, No. of hospital visits), socio-economic variables (HH income, life events, women empowerment) and environmental variables (air pollution) in each model. We find that HH income is the main determinant of women health and women are at increased risk of overall health deterioration when we take into account age, undesirable life events and air pollution.

**Table 7: Mental Health, Domestic Violence & Emotional Intelligence**

VARIABLES	Mental Health	Mental Health	Mental Health	Mental Health	Mental Health	Mental Health	Mental Health
Emotional Violence	- <b>0.0290**</b> (0.0121)						
Verbal Abuse		- <b>0.0979***</b> (0.0177)					
Physical Violence			- <b>0.383***</b> (0.0642)				
Emotional Intelligence				<b>0.404***</b> (0.101)			
Emotional Intell.* Emotional Violence					<b>0.0211***</b> (0.00489)		
Emotional Intell.* Verbal Abuse						<b>0.0258***</b> (0.00587)	
Emotional Intell.* Physical Violence							<b>0.119**</b> (0.0521)
HH Income	-0.0763 (0.0808)	-0.0234 (0.0839)	-0.0399 (0.0834)	<b>-0.137*</b> (0.0819)	<b>-0.160*</b> (0.0828)	<b>-0.150*</b> (0.0826)	-0.0882 (0.0808)
No. of Children	<b>-0.138**</b> (0.0694)	<b>-0.151**</b> (0.0711)	<b>-0.171**</b> (0.0718)	<b>-0.126*</b> (0.0702)	<b>-0.139**</b> (0.0702)	<b>-0.133*</b> (0.0703)	<b>-0.143**</b> (0.0695)
Marital Status	<b>0.723***</b> (0.165)	<b>0.891***</b> (0.178)	<b>0.582***</b> (0.161)	<b>0.566***</b> (0.157)	<b>0.515***</b> (0.162)	<b>0.514***</b> (0.162)	<b>0.625***</b> (0.155)
Age	- <b>0.562***</b> (0.119)	<b>-0.551***</b> (0.122)	- <b>0.522***</b> (0.121)	- <b>0.557***</b> (0.121)	- <b>0.305***</b> (0.120)	<b>-0.533***</b> (0.120)	<b>-0.534***</b> (0.121)
Life Events	<b>0.268**</b> (0.114)	<b>0.203*</b> (0.118)	<b>0.208*</b> (0.121)	<b>0.302***</b> (0.115)	<b>0.305***</b> (0.115)	<b>0.323***</b> (0.116)	<b>0.327***</b> (0.116)
No. of Hospital Visits	0.0526 (0.0730)	0.0358 (0.0756)	0.0492 (0.0754)	<b>0.107*</b> (0.0738)	<b>0.129*</b> (0.0741)	<b>0.113*</b> (0.0738)	0.0694 (0.0728)
Air Pollution	0.0517 (0.0466)	<b>0.104**</b> (0.0490)	<b>0.111**</b> (0.0498)	0.0594 (0.0469)	0.0584 (0.0466)	<b>0.0657*</b> (0.0469)	<b>0.0833*</b> (0.0483)
Women Empowerment	-0.00228 (0.137)	0.0103 (0.143)	-0.0840 (0.145)	-0.0127 (0.138)	-0.0453 (0.140)	-0.0190 (0.139)	-0.00501 (0.137)
Constant	0.466 (0.801)	1.245 (0.840)	0.696 (0.837)	-0.00403 (0.805)	0.101 (0.803)	-0.0483 (0.806)	-0.384 (0.824)
Observations	504	504	500	504	504	504	500

DV/IPV is very common. Findings of tables 5,6,7 & 8 are same and suggest that health and well-being of women deteriorated with all three forms of violence in some way or the other. On the contrary, results entirely change when we add emotional intelligence in the model. Emotional intelligence and its interactive terms are significantly and strongly related to improved health status. Emotionally stable battered women cope up with marital conflicts and violence issues more wisely than others. In logistic regressions, while controlling for environment, demographic and socio-economic differences, we find that HH income and marital status are significantly and positively linked with health status while increasing age, adverse life events like shortage of meals sufficient for one day and air pollution put women health at risk. In Table

8, we find that women empowerment has positive and significant impact on health status of women. Kocacik (2007) argues that the families where collective decisions are taken women are less abused and more empowered.

**Table 8: Happiness, Domestic Violence & Emotional Intelligence**

VARIABLE	Happines s	Happines s	Happines s	Happines s	Happines s	Happines s	Happines s
Emotional Violence	<b>-0.112***</b> (0.0151)						
Verbal Abuse		<b>-0.146***</b> (0.0199)					
Physical Violence			<b>-0.173***</b> (0.0650)				
Emotional Intelligence				<b>0.144*</b> (0.112)			
Emotional Intell.*					0.00492 (0.00535)		
Emotional Violence						0.00365 (0.00631)	
Emotional Intell.* Verbal Abuse							0.0609 (0.0543)
Emotional Intell.* Physical Violence							
HH Income	<b>0.337***</b> (0.103)	<b>0.352***</b> (0.104)	<b>0.259***</b> (0.0965)	<b>0.210**</b> (0.0948)	<b>0.210**</b> (0.0948)	<b>0.214**</b> (0.0944)	<b>0.228**</b> (0.0949)
No of Children	<b>0.160*</b> (0.0849)	0.0918 (0.0827)	0.0614 (0.0776)	0.0813 (0.0784)	0.0739 (0.0779)	0.0701 (0.0779)	0.0713 (0.0772)
Marital Status	<b>0.418**</b> (0.205)	0.275 (0.194)	0.0344 (0.153)	0.0325 (0.154)	0.0244 (0.155)	0.0335 (0.155)	0.0576 (0.154)
Age	<b>-0.679***</b> (0.138)	<b>-0.593***</b> (0.137)	<b>-0.584***</b> (0.130)	<b>-0.607***</b> (0.130)	<b>-0.603***</b> (0.130)	<b>-0.600***</b> (0.130)	<b>-0.575***</b> (0.131)
Life Events	<b>0.408***</b> (0.130)	<b>0.260**</b> (0.131)	<b>0.316***</b> (0.120)	<b>0.371***</b> (0.118)	<b>0.370***</b> (0.119)	<b>0.367***</b> (0.119)	<b>0.376***</b> (0.120)
No. of Hospital Visits	-0.0353 (0.0861)	-0.0403 (0.0873)	0.0156 (0.0784)	0.0307 (0.0781)	0.0319 (0.0786)	0.0252 (0.0781)	0.0243 (0.0777)
Air Pollution	<b>0.148**</b> (0.0584)	<b>0.195***</b> (0.0577)	<b>0.113**</b> (0.0550)	<b>0.113**</b> (0.0546)	<b>0.111**</b> (0.0545)	<b>0.111**</b> (0.0546)	<b>0.106*</b> (0.0551)
Women Empowermen t	<b>0.389**</b> (0.172)	<b>0.434**</b> (0.176)	<b>0.370**</b> (0.159)	<b>0.371**</b> (0.157)	<b>0.365**</b> (0.157)	<b>0.367**</b> (0.157)	<b>0.377**</b> (0.157)
Constant	-0.251 (0.928)	0.505 (0.958)	-0.975 (0.856)	-1.304 (0.847)	-1.267 (0.845)	-1.261 (0.848)	-1.445 (0.880)
Observations	504	504	500	504	504	504	500

**Results of Odd Ratios after Logistic Regressions**

To get a clear picture of direction of variables odd ratios are taken into account in Table 9. We detect that for EV, VA and PV, odd ratio is less than one so odds of health status decreases with increase in DV/IPV. So for emotional intelligence we find positive and significant impact which depicts that with one unit change in EI, the odds of good health increases. After taking into account interactive terms of EI with DV, we find that with one unit increase in these interactions, the odds of

good health status increases. On the contrary, these interactive terms are insignificant in happiness model. It might be due to the reason that the women are emotionally so strong and satisfied that they easily mitigate the bad effects of violence on their well-being.

**Table 9: Odd Ratios of Dependent & Independent Variables**

<b>VARIABLES</b>	<b>Overall Health</b>	<b>Physical Health</b>	<b>Mental Health</b>	<b>Happiness</b>
	Odd Ratios	Odd Ratios	Odd Ratios	Odd Ratios
Emotional Violence	<b>0.9673***</b>	<b>0.9799*</b>	<b>0.9714**</b>	<b>0.8942***</b>
Verbal Abuse	<b>0.9260***</b>	<b>0.9388***</b>	<b>0.9067***</b>	<b>0.8643***</b>
Physical Violence	<b>0.9199*</b>	<b>0.8524**</b>	<b>0.6821***</b>	<b>0.8415***</b>
Emotional Intelligence	<b>1.1668*</b>	<b>1.3363***</b>	<b>1.4978***</b>	<b>1.1545*</b>
Emotional Intell.*	<b>1.0080*</b>	<b>1.0147***</b>	<b>1.0213***</b>	1.0049
Emotional Intell.* Verbal Abuse	<b>1.0102*</b>	<b>1.0206***</b>	<b>1.0261***</b>	1.0037
Emotional Intell.* Physical Violence	<b>1.0945*</b>	<b>1.2824***</b>	<b>1.1261**</b>	1.0628

**Results of Marginal Effects after Logistic Regressions**

For clearer picture about the magnitude of the analysis we take marginal effects of the logistic models. Our focused relationship of the study is the change in predicted probability of good health status due to one unit change in DV/IPV. The predicted probability of good health status decreases by 0.69 percentage points as EV increases by one unit. The probability of better health status decreases by 1.57 percentage points when verbal abuse increases by one unit. Similarly, with one unit increase in PV, the predicted probability of good health decreases by 1.74 percentage points. As we add EI in the analysis in Table 10, we find that the predicted probability of improved overall health status of women increases by 3.20 percentage points with one unit increase in EI. With one unit increase in interactive terms of EV, VA and PV with EI, the predicted probability of good health increases by 0.17, 0.21 and 1.88 percentage points respectively.

Column 2 of Table 10 gives the results of physical health status of married women. The predicted probability of good health status decreases by 0.40 percentage points as EV increases by one unit. The probability of better health status decreases by 1.21 percentage points

when verbal abuse increases by one unit. Similarly, with one unit increase in PV, the predicted probability of good health decreases by 3.08 percentage points. As we add EI in the analysis, we find that the predicted probability of improved physical health status of women increases by 5.60 percentage points with one unit increase in EI. With one unit increase in interactive terms of EV, VA and PV with EI, the predicted probability of good health increases by 0.28, 0.39 and 4.75 percentage points respectively.

**Table 10: Marginal Effect of Dependent & Independent Variables**

VARIABLES	Overall Health	Physical Health	Mental Health	Happiness
	Mfx% (95% CI)	Mfx% (95% CI)	Mfx% (95% CI)	Mfx% (95% CI)
Emotional Violence	-0.69 (-.012 -.002)**	-0.40 (-.012 -.002)*	-0.72 (-.013 -.001)**	-2.11 (-.027 -.015)***
Verbal Abuse	-1.57 (-.023 -.009)***	-1.21 (-.019 -.006)***	-2.43 (-.033 -.016)***	-2.77 (-.035 -.020)***
Physical Violence	-1.74 (-.044 .009)*	-3.08 (-.055 -.006)**	-9.48 (-.126 -.064)***	-3.37 (-.058 -.009)***
Emotional Intelligence	3.20 (-.011 .075)*	5.60 (.015 .097)***	10.02 (.051 .149)***	2.80 (-.015 .071)*
Emotional Intell.*	0.17 (-.003 .004)*	0.28 (.001 .005)***	0.52 (.003 .008)***	0.10 (-.001 .003)
Emotional Intell.* Verbal Abuse	0.21 (-.000 .005)*	0.39 (.001 .006)***	0.64 (.004 .009)***	0.07 (-.002 .003)
Emotional Intell.* Physical Violence	1.88 (-.003 .040)*	4.75 (.025 .070)***	2.94 (.004 .055)**	1.20 (-.009 .033)

Note: OR = Odd Ratios, CR = Confidence Interval, Significant figures are highlighted. Control variables are added in each model.

Column 3 gives the results of mental health of married women. The predicted probability of good mental health decreases by 0.72 percentage points as EV increases by one unit. The probability of good mental health decreases by 2.43 percentage points when verbal abuse increases by one unit. Likewise, with one unit increase in PV, the predicted probability of good mental health decreases by 9.48 percentage points. After adding EI in the analysis, we find that the predicted probability of good mental health of women increases by 10.02 percentage points with one unit increase in EI. With one unit increase in

interactive terms of EV, VA and PV with EI, the predicted probability of good health increases by 0.52, 0.64 and 2.94 percentage points respectively.

To interpret the marginal effects of happiness, Column 4 of Table 10 depicts that the predicted probability of being happy decreases by 2.11 percentage points as EV increases by one unit. The probability of happiness decreases by 2.77 percentage points when verbal abuse increases by one unit. Also, with one unit increase in PV, the predicted probability of being happy decreases by 3.37 percentage points. By adding EI in the analysis, we find that the predicted probability of improved physical health status of women increases by 5.60 percentage points with one unit increase in EI. Whereas, interactive terms of EI and violence could not show any significant results.

### **Discussion and Conclusion**

To our limited knowledge this is the first study which investigates the relationship of different forms of intimate partner and in laws violence among married women aged between 16 to 65 years and health status by using survey data. Study finds key factors influencing health status of women as household total income, no. of children, marital status, age of the respondent, environmental degradation and husband dominance. Out of these factors our study mainly focused on the effect of violence on health of women.

The study also examines the role of emotional intelligence on health and also that how emotionally intelligent married women moderate the effects of violence on health. This study also analyses the combine effect of social (violence), economic (income employment) and environmental (climate change and air pollution) factors on women health. We follow Grossman Health Production Function (1972) to model this relationship.

All three forms of violence (physical violence, emotional violence and verbal violence) are the strong determinants of health, our results are in line with previous literature on violence and health status of women (Tjaden & Thoennes, 1998; Coker *et al.*, 2000; Straka & Montminy, 2006; Zink *et al.*, 2006). The results show that physical violence has significant effect on overall health (Fikree & Bhatti, 199; Krug *et al.*, 2002; Campbell, 2002; Garcia-Moreno *et al.*, 2006), physical health (Coker *et al.*, 2000, Plichta, 2004, Ellsberg *et al.*, 2008, Greene *et al.*, 2018), mental health (Goodman *et al.*, 1993; Coker *et al.*, 2002; Pico-Alfonso *et al.*, 2006, Mills *et al.*, 2018) and well-being (Dillon *et al.*, 2013). But we cannot find any study from existing literature which finds the effect of violence on happiness (proxy of well-being).

In case of any type of violence, victimized women are at risk of variety of psychological and social problems like anxiety, depression, suicidal behavior and reproductive health problems. Women between 30-45 years of age are more exposed to physical violence as compared to other age groups. The analysis shows that more the physical assault on women more is the dominance and marital conflicts. Similarly, our result justify that 61% women report husband dominance in their household decisions. The results also assert that emotional violence also has potential significant effects on health outcome (Yoshihama *et al.*, 2009). In the same line of physical violence statistical analysis also show that women at age 30-45 are also at higher risk of emotional violence.

This study contributes to the body of knowledge by investigating the role of emotional intelligence and its interaction with violence affecting women health. The analysis show that emotional intelligence effectively moderates the relationship between women health (physical and mental) and domestic violence but has no effect in case of wellbeing. Ciarrochi *et al.* (2002) view that low level of emotional intelligence such as low thinking about feelings, low psychosomatic mindedness is associated to low mental stress while reverse holds if individual has strong feelings and thinking about a subject (McCallum & Piper, 2000). The ability of women being aware, to control and express emotions make it possible to effectively handle relationships issues such as marital conflicts and violence. This findings is supported by Martins *et al.*, (2010) where the emotional intelligence is linked with the ability to think rationally and effectively deal with the challenging situations faced in day to day business.

This study recommends dire need of effective health policies for women. Government should take steps for vulnerable women. Government should make such laws which protect women from DV/IPV and give strict punishment who violate the act.

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**Appendix**

**Table A-1: Mean & Standard Deviation of Variables used in Study**

Overall Health	Mean (Emotional Violence)	Standard Deviation (Emotional Violence)	Mean (Verbal Abuse)	Standard Deviation (Verbal Abuse)	Mean (Physical Violence)	Standard Deviation (Physical Violence)
<b>0</b>	20.6101	8.9598	18.0818	6.8677	1.4151	1.6199
<b>1</b>	18.1768	8.0771	15.2290	6.0287	1.1994	1.6364
Physical Health	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>0</b>	19.5556	8.2545	17.4861	6.8050	1.5563	1.6439
<b>1</b>	18.7000	8.5023	15.5861	6.2106	1.1536	1.6162
Mental Health	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>0</b>	19.7897	8.2595	17.7382	6.4383	1.7948	1.7006
<b>1</b>	18.2177	8.5275	14.7454	6.1166	0.8229	1.4318
Happiness	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>0</b>	23.3986	10.0066	19.5676	7.7899	1.5743	1.6292
<b>1</b>	17.0927	6.8984	14.6994	5.1575	1.1392	1.6191

**Table A-2: Summary Analysis of Women Health Status, Domestic Violence & Emotional Intelligence**

Variables	Observations	Mean	Std. Dev.	Minimum	Maximum
Dependent Variables					
<b>Overall Health</b>	504	0.6845	0.4652	0	1
<b>Physical Health</b>	504	0.7143	0.4522	0	1
<b>Mental Health</b>	504	0.5377	0.4991	0	1
<b>Happiness</b>	504	0.7063	0.4559	0	1
Independent Variables					
<b>Emotional Violence</b>	504	18.9444	8.4329	11	39
<b>Verbal Abuse</b>	504	16.1290	6.4368	7	32
<b>Physical Violence</b>	500	1.2680	1.6326	0	4
<b>Emotional Intelligence</b>	504	1.30e-09	1	-1.4041	1.7908
<b>Emotional Intell.*Emotional Violence</b>	504	1.3553	23.0642	-53.3554	69.8400
<b>Emotional Intell.*Verbal Abuse</b>	504	0.3815	18.4088	-42.1227	53.7232
<b>Emotional Intell.*Physical Violence</b>	500	-0.2197	2.0157	-5.6164	7.1631
Covariates					
<b>HH Income</b>	504	3.6766	1.2375	1	7
<b>No. of Children</b>	504	2.8929	1.4816	0	6
<b>Marital Status</b>	504	1.2123	0.7110	1	4
<b>Age</b>	504	2.4960	0.9542	1	4
<b>Life Events</b>	504	4.3909	0.8623	1	5
<b>No. of Hospital Visits</b>	504	2.4782	1.4252	0	4
<b>Air Pollution</b>	504	3.1488	2.1733	1	8
<b>Women Empowerment</b>	504	1.9643	0.7181	1	4