

**Health Impact of Domestic Violence on Victims and Witnesses**  
*An Initiative of United Cultures of Canada Association*

**Health Issues following Post Traumatic Stress due to  
Intimate Partner Violence (IPV)**

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## Background Information

The most common form of health impact that arises following IPV is chronic stress. Stress is associated with cardiovascular diseases, circulatory diseases, nervous disorders, asthma, chronic pain, gastrointestinal symptoms and migraines. Therefore IPV is often correlated with these diseases although the direct cause – effect relationship in many cases is unknown. This paper discusses some of these diseases and the research that has been conducted<sup>1</sup>.

Three compensatory mechanisms to regulate the human body and deal with stress which include:

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1. Homeostasis<sup>2</sup> – physiologic regulation of the body to deal with change in body temperature, blood pressure, pH
2. Allostasis<sup>3</sup> - It is the ability of the body to increase or decrease vital body function in order to compensate for changing conditions such as fatigue, hunger and stress.
3. Allostatic Load<sup>4</sup> – It is the strain to the body and brain as a result of prolonged and elevated physiological activity

Allostasis and Homeostasis operate via stimulation of the brain and Autonomic Nervous system and neuroendocrine system. These stress mediators affect the immune system, cardiovascular system and other systems. Therefore a prolonged period of Allostatic Load may directly impact these systems and make an individual more vulnerable to various diseases<sup>5</sup>. Furthermore, since

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<sup>1</sup> <http://www.cdc.gov/violenceprevention/intimatepartnerviolence/consequences.html>

<sup>2</sup> [http://www.medscape.com/viewarticle/749334\\_3](http://www.medscape.com/viewarticle/749334_3)

<sup>3</sup> [http://www.medscape.com/viewarticle/749334\\_3](http://www.medscape.com/viewarticle/749334_3)

<sup>4</sup> [http://www.medscape.com/viewarticle/749334\\_3](http://www.medscape.com/viewarticle/749334_3)

<sup>5</sup> [http://www.medscape.com/viewarticle/749334\\_3](http://www.medscape.com/viewarticle/749334_3)

Stress affects the Nervous system, hyperactivity of stress mediators may persist and be triggered by memory alone despite the individual having left the violent relationship. Indirect effects to health are due to excessive smoking and alcohol abuse that arise as behavioral changes in order to cope with stress.

## **Asthma**

A paper by Rosalind J Wright, discusses the implications of IPV on occurrence of asthma in children. It demonstrates that the effectiveness of regulatory responsiveness to stress is dependent on caregiver – child regulation<sup>6</sup>. Self regulation is necessary to cope with stress and aids in governing social behavior and emotional expression. It is also associated with resilience in children. Therefore changes in maternal child interaction can directly lead to disrupted self regulation and an inability to cope with stressful environment thus leading to Asthma. Since IPV directly influences the maternal child interactions it has been associated with higher rates of Asthma. (Note although in most cases IPV can lead to poor parenting but in many cases it can also lead to better parenting) The experiment described in the paper includes 4789 women from 75 hospitals with 3116 children remaining at the end of the analysis. A baseline interview was conducted followed by an interview at 12 months and 36 months. IPV within these families was examined along for women that experienced IPV before 12 months, between 12 and 36 months and also from birth to 36 months. Another factor that was examined was supportive care giving which involves exposing children to physical affection, activities such as interactive toys and assisting them with their daily needs. Since these factors demonstrate maternal child interaction. Based on the results it was found that children of mothers experiencing IPV with lower mother

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<sup>6</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3094096/pdf/nihms287186.pdf>

child interaction had higher incidences of Asthma compared to those children who were not exposed to IPV but had low mother child interactions. However no association was found amongst children experiencing IPV and high maternal child interaction and children with high maternal child interaction and no IPV. The research also showed that a positive supportive care giving environment can act as a buffer and reverse the impact of early stages of IPV.

Thus increased stress leads to alterations in the hypothalamic pituitary adrenal axis leading to increased production of cortisol<sup>7</sup>. These prolonged cortisol elevations lead to a down regulation in the number of cortisol receptors in the immune cells. Decrease in receptors leads to inflammatory response which includes airway hyper reactivity thus leading to asthma.

#### Goals of Research:

To create a medical database where patients specifically suffering from IPV associated medical symptoms within Edmonton is recorded, along with their measurements of cortisol levels over a period of 6 months. This data can be accessed/ added by other provinces and cities to record some general patterns amongst the patients their vulnerability to other diseases recorded over a period of time. This will also prevent more severe cases of IPV related medical issues as women with elevated levels of hormones will be treated before the symptoms become worse.

#### **Cardiovascular Diseases as a result of IPV**

This section discusses the recent research that has been conducted to correlate cardiovascular diseases with IPV.

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<sup>7</sup> <http://www.sciencedirect.com/science/article/pii/S014521341200066X>

Stress caused as a result of IPV may lead to changes in victims' lifestyle. Examples of stress coping mechanisms amongst women would include smoking and Alcohol. Although Smoking might have an initial calming effect, it has long term damage which persists even after the victim has left the violent relationship. In the paper "Intimate partner violence and cardiovascular risk: is there a link?", a secondary analysis is conducted with a community sample of 309 women who have recently left an IPV relationship. The results of this examination found that 44.1% of the victims were smokers, 53.2 % were overweight and 54.7% of the victims had a higher blood pressure. 50.8% of the women from this population had symptoms of cardiovascular diseases.

An explanation for elevated levels of smoking, blood pressure, obesity might also be due to the socioeconomic factors that are an indirect result of IPV in women such as looking for housing, working extra hours, looking after their families.

## **Treatment**

Government has placed a variety of social aid services to aid victims of IPV and to deal with the post traumatic stress. One way to further reduce the occurrence of cardiovascular diseases might be to come up with better coping mechanisms rather than smoking and alcohol.

## **Migraines**

Migraine, a neurological disorder which is often characterized by chronic headaches lasting from 2 to 72 hours is also an effect of IPV. As discussed earlier, IPV triggers neuroendocrinal known as the Hypothalamus pituitary adrenal pathway which is associated with a depressive state and an increase in chronic pain. In the paper "Association between Intimate Partner Violence, Migraines and Probable Migraines", the correlation between IPV and migraines was

examined amongst 2066 Peruvian women who were interviewed in their post partum state.<sup>8</sup> This interview was targeted at women between the ages of 15 – 49 years. The women were categorized based on acts of physical violence against them which included hitting, kicking, twisting arm, throwing things or threatening. They were also categorized based on acts of sexual violence against them. Based on the data, it was found that women who had experienced IPV in their lifetime had a 40% increased chance to suffer from migraines. Furthermore, in an individual pilot study, the researchers found that women who had suffered IPV and were also in a depressive state had a 2.5 fold increase in chances of suffering from migraines<sup>9</sup> (Note: that depression may also be a result of IPV. Women who had suffered from both physical and sexual violence were more likely to be in a state of depression as compared to women who had only suffered from physical violence)

### **Sleep Disorders**

Sleep disorders such as insomnia also result from IPV and depressive state in Women. IPV negatively impacts both the quality and quantity of sleep. Women who suffer from IPV often find themselves more vulnerable to their violent partner while being asleep as they are defenseless and unaware. Sleep Deprivation amongst the victims might also be used as a strategy to perpetrate violence<sup>10</sup>.

In the paper “Subjective Sleep Quality in Women Experiencing Intimate Partner Violence: Contributions of Situational, Psychological, and Physiological Factors” an experiment conducted to examine the quality of sleep amongst battered women found that women might suffer from

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<sup>8</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3662491/>

<sup>9</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3662491/>

<sup>10</sup> <http://www.hindawi.com/journals/ijfm/2013/313909/#B72>

sleep latency and more awakening despite of having left the violent relationship. These symptoms of sleep deprivation might last for up to 5 years<sup>11</sup>. This disruption to sleep might be a result of bad dreams or recalling of incidences of domestic violence by women. Furthermore, in a more qualitative research, it was found that women suffering from physiological impacts of IPV which include Post Traumatic stress have 70 – 80 % greater chances of awakening, nocturnal arousal and rapid eye movement during sleep<sup>12</sup>.

Women suffering from sleep disorder have often reported cases of back ache, chronic fatigue, headaches and digestion problems. Furthermore, sleep deprivation often leads to immune suppression which is associated with increased cases of flu and an inability to cope with stressful environment<sup>13</sup>.

### **Chronic Pain and Other symptoms**

According to a study conducted by Wuest et. al in a small Canadian population sample, it was found that that 35% of the IPV victims had suffered from severe pain despite of having left the relation for 20 months or more which is significantly higher compared to the 18% national average. Furthermore, a significant amount of population reported pain in more than 3 sites which included joints in 43.2% of the cases. Another interesting set of data obtained by Yoshima et.al found that despite the increased rate of chronic pain in women suffering from IPV, there was no increase in the amount of pain medications including analgesics taken by the victimized women compared to women from normal relationships<sup>14</sup>.

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<sup>11</sup> <http://onlinelibrary.wiley.com/login.ezproxy.library.ualberta.ca/doi/10.1002/its.20495/pdf>

<sup>12</sup> <http://www.hindawi.com/journals/ijfm/2013/313909/#B72>

<sup>13</sup> <http://onlinelibrary.wiley.com/login.ezproxy.library.ualberta.ca/doi/10.1002/its.20495/pdf>

<sup>14</sup> <http://onlinelibrary.wiley.com/login.ezproxy.library.ualberta.ca/doi/10.1002/its.20495/pdf>

Other incidence of chronic pain such as pain in “every bone in my body” was reported in many victims. These victims also showed 28% increase in psychosomatic complaints such as reported weight loss, behavioral changes due the psychological trauma<sup>15</sup>.

Recent studies have shown that IPV involving sexual violence is associated with higher reported incidences of vaginal discharge, feeling of a burning sensation during urination, sexually transmitted diseases such as AIDS/ HIV and increased occurrence of cervical cancer amongst women.

Furthermore a research conducted by World Health Organization spanning 10 countries found that IPV was also associated with reported memory loss, dizziness and loss of concentration in the victims over a long period of time.

### **IPV and Morbidity – An interesting new research**

Some recent research from paper “Telomere Shortening in Formerly Abused and Never Abused Women” has shown that IPV induced stress leads to shortening of telomere length which might lead to increased chances of heart diseases and fast cellular ageing leading to an increase in morbidity. Telomeres are repetitive strands of DNA that indicates biological age and allows for genetic stability<sup>16</sup>. Therefore shortening of telomere can have serious health consequences.

In the experiment conducted by Humphreys et.al, 66 women who suffered from IPV and 46 women without IPV were examined for telomere length via blood samples. Based on the results of the experiment, it was found that women who had suffered from IPV had significantly shorter

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<sup>15</sup> <http://onlinelibrary.wiley.com/login.ezproxy.library.ualberta.ca/doi/10.1002/its.20495/pdf>

<sup>16</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3207021/>

telomere length compared to women from non violent environment. Furthermore, the telomere length was found to be even shorter amongst IPV victims who had a child.

Another interesting finding from this research was the fact that the telomere length was found to be shortened depending on the duration of the IPV associated relationship rather than its intensity. This is significant as it allows correlating morbidity and aging with the duration of a violent relationship<sup>17</sup>.

Despite the interesting and useful findings by Humphreys et. al into IPV association to telomere length, much more research needs to be done into this topic. More research into this topic might allow nurses and social workers to tackle this issue more efficiently. Some suggested treatments to counter this biological change are via exercise, better sleeping patterns and nutritional habits.

### **Consequences of IPV to the society**

Based on the Centers for Disease Control and Prevention database, a survey conducted to estimate costs for treatment for women suffering from IPV in 1995 showed \$5.8 billion in expenditure. Furthermore, in many cases these increased costs for medical treatment can last for up to 15 years<sup>18</sup>. Similarly, another survey released in 2003 based on 1995 – 96 data showed that 807000 overnight hospital stays and 971000 outpatient visits were due to IPV. Approximately 11% - 30% of reported emergency cases were also a result of IPV.

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<sup>17</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3207021/>

<sup>18</sup> <http://www.cdc.gov/violenceprevention/intimatepartnerviolence/consequences.html>

## **What changes need to be made to the health care system to identify IPV?**

In the article Intimate Partner Violence and Adverse Health Consequences published on Medscape Today, author Michele C. Black argues that one method to prevent IPV related medical disorders is by changing policies and adapting new strategies in health care institutes to treat patients suffering from IPV. The author argues that one such method would be train health care providers to pay more attention to role of stress in diseases and asses patients' previous history of violence if they show signs that can be associated with potential victimization. This is necessary because in many cases the victim is embarrassed or scared to report IPV and these negative health consequences remain unnoticed. On average health care providers are able to identify only 1 in 35 patients who have suffered injuries as a result of IPV.

Health Care providers fear of getting overly involved, feeling of powerlessness and fear of offending the patients contributes to the inefficiency in identifying IPV victims. One method suggested by the American Academy of Family physicians (AAFP) is by training family doctors to identify IPV victims, gain patient confidence and provide them with appropriate referrals when required<sup>19</sup>.

Physicians often lack the training to deal with IPV victims which results in many cases of IPV going unnoticed. According to CDC, more than 53% medical schools in 1989 in Canada and US provided no training on IPV. More recent surveys conducted have also found training on the topic of IPV to insufficient. According to a survey conducted in 2005, only 21% of the final year primary care residents “reported being prepared to discuss IPV with their

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<sup>19</sup> [http://www.medscape.com/viewarticle/749334\\_6](http://www.medscape.com/viewarticle/749334_6)

patients”<sup>20</sup>. Many attempts are being made to improve the interaction between physicians and patients regarding IPV. One such step is taken by the Academy on Violence and abuse which is working with the AAFP to come up with an improved and more detailed curricula for IPV.

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<sup>20</sup> [http://www.medscape.com/viewarticle/749334\\_7](http://www.medscape.com/viewarticle/749334_7)

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