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The impact of domestic violence upon default from colposcopy services

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1 Introduction

This thesis explores a possible mechanism by which the presence of domestic violence may lead to poorer health outcomes in women. Whilst the cost and impact of domestic violence in the literature has been well documented, it is less clear exactly ‘how’ domestic violence leads to the reported variety of adverse health outcomes. The key hypothesis in this thesis is that the health impact of domestic violence is partly mediated through failure of affected women to attend for treatment and follow up. This then results in their poorer health outcomes.

1.1 Definitions

1.1.1 Defining violence

Defining violence is not an easy task with many different definitions in the literature. One leading author has defined violence as follows:

“At its simplest, a definition needs to tell us what something is and what it is not, and how to recognize when it is present and when it is not. Without definition, communal, comprehensible discourse about violence cannot proceed” (Krauss, 2006).

However, historical and cultural factors may impact upon the acceptability, definition and level of violence. The following examples have previously been used to demonstrate how cultural factors play in the expression of violence.

It was a typical husband/wife argument. She wanted to visit her parents. He wanted her to stay at home. So they settled it in, what some here say is an all too-typical fashion, Rosalynn Isimento-Osibuamhe recalled of the incident in December 2001. Her husband Emmanuel, followed her out the door. Then he beat her unconscious, she says, and left her lying in the street near their

apartment. Mrs. Isimento-Osibuamhe, then 31, and in the fifth year of her marriage, had broken an unwritten rule in this part of the world; she had defied her husband. Surveys throughout sub-Saharan Africa show that many men and women, too-consider such disobedience ample justification for a beating (LaFraniere, 2005).

The highest rates of violence have been reported from Zambia, where nearly half of women surveyed said a male partner had beaten them, according to a 2004 survey financed by the United States that surveyed nine nations on three continents (LaFraniere, 2005).

For the purposes of this thesis, we have utilised the WHO Global Consultation on Violence and Health definition. This definition has taken a very broad definition of violence as they have a role in to ensure that society's weakest members are protected. Their current definition is as follows:

“The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation” (WHO, 1996).

The WHO then go on to subdivide violence into three major categories. These are;

- Self-directed
- Interpersonal
- Collective

From this, interpersonal violence is subdivided into three subcategories. These are;

- Family
- Intimate partner
- Community

1.1.2 Defining intimate partner violence

This thesis explores the impact of intimate partner violence on women's attendance at colposcopy and women's health services.

As with the term 'violence', there are likewise many different definitions of the term intimate partner violence used in the literature. In many cases, family violence is confused with intimate partner violence. An Australian review article stated that:

"The terms 'violence', 'abuse' and 'battering' are frequently used interchangeably. In studies of the Australian community, 'domestic violence' is usually taken to mean partner abuse, specifically physical violence between a male and female partner, most commonly perpetrated by the male partner" (Hegarty & Hindmarsh, 2000; ANOP, 1995).

The Australian legal definition states that domestic violence refers "exclusively to violence committed by a heterosexual partner". In a healthcare setting a much broader definition is required. Partner abuse can also be characterized by emotional and psychological abuse. "Most women experiencing partner violence abuse report that the physical violence is the least damaging suffered: it is the relentless psychological abuse that cripples and isolates the women" (Hagarty & Hindmarsh, 2000).

The Australian Public Health Association also uses a very broad definition...

The Australian Public Health Association employs a comprehensive definition of 'domestic violence', outlining examples of abusive behavior:

- Physical abuse, causing pain and injury; denial of sleep, warmth or nutrition; denial of needed medical care; sexual assault; violence to property or animals; disablement; and murder;

- Verbal abuse, in private or in a public, designed to humiliate, degrade, demean, intimidate, subjugate, including the threat of physical violence;
- Economic abuse, including deprivation of basic necessities, seizure of income or assets, unreasonable denial of the means necessary for participation in social life; and
- Social abuse, through isolation, control of all social activity, deprivation of liberty, or the deliberate creation of unreasonable dependence. (Australian Public Health Association. 1990).

Under these inclusive definitions, violence has many forms including;

- physical aggression;
- threatening behavior;
- sexual abuse;
- emotional abuse;
- verbal abuse;
- intimidating behavior;
- controlling behavior; and
- domineering behavior

Intimate partner violence (IPV) can therefore be broadly defined as a pattern of abusive behaviors in an intimate relationship. For the purposes of this thesis we have defined intimate partner violence as; physically, sexually, verbally and/or emotionally abusive behavior in an intimate relationship that is in any way hurtful or unwanted.

1.2 The burden of Intimate Partner Violence

1.2.1 Prevalence of intimate partner violence

Intimate partner violence is common. Statistics vary, but surveys place the lifetime prevalence of intimate partner violence against women at between 25% to 30% and the annual prevalence between 2% to 12% (McLennon, 1996; Tjaden and Thoennes, 2000; Wathen & MacMillan, 2003). A recent SA telephone poll of 6004 interviews confirmed that 17.8% of adults, both male and female, reported some form of IPV by a current or former partner (Grande, Hickling, Taylor & Woolacott, 2003). In a more recent study (Fanslow & Robinson, 2011), data collected in New Zealand showed that as many as 55% of women interviewed that had ever had a partner had experienced some sort of IPV in her lifetime. Garcia-Moreno et al. (2006), reviewed data collected from 24,000 women from various diverse cultural, geographical and urban/rural settings and the findings revealed IPV being as widespread as 70% in some places however in some sites, women who had a history of IPV in their lifetime were as low as 15%.

IPV against women is widespread, due to demographic variables within settings it is more prevalent in some areas. Routine screening programs for IPV can be a useful tool in determining victims so prevention strategies can be implemented.

1.2.2 Cost of intimate partner violence

The health consequences of IPV have been well documented, but the economic cost has only been the focus of research since the late 1980s. Violence against women was brought to the public's attention by activists during the second wave of the feminist movement. It was argued that if violence against women was so prevalent, then there

was a social responsibility to protect the recipients of the violence and punish the perpetrators (Carrie, 2010).

During the late 1980s and early 1990s campaigns altered strategy and instead of calling for punitive measures, they began to focus on the economic cost of violence against women. Researchers around the world began to publish estimates of the economic cost of intimate partner violence.

Partner violence incurs huge direct costs to healthcare services, as well as indirect costs to social care, the legal system and a loss in economic productivity (Max, Rice, Finkelstein, Bardwell & Leadbetter, 2004). One study analysed national survey data from the National Violence Against Women Survey and the Medical Expenditure Panel Survey from the United States. The authors estimated that the economic cost of intimate partner violence perpetrated against women in the US, including expenditures for medical care and mental health services, and lost productivity from injury and premature death was \$5.8 billion (95% confidence interval: \$3.9 to \$7.7 billion in 1995 dollars)(Max et al., 2004).

Other studies report annual figures as high as \$67 billion (Donovan, Peterson & Francas, 1999). However, a systematic review from Germany that reported on nine cost estimates studies and included direct, indirect and intangible costs found that there was incomplete data and considerable heterogeneity in cost categories. They concluded that the real costs are higher than those reported in studies (Niebuhr, Salge & Brzank, 2012). In one study, the estimates of the medical cost burden of intimate partner violence in the first 12 months after victimization ranged from USD 2.3 billion to USD 7.0 billion, depending on the economic method used (Brown, Finkelstein & Mercy, 2008).

One of the better cost-analysis studies looked at costs in a community sample of 309 Canadian women who had left an abusive male partner on average 20 months

previously. The authors reported that the total annual estimated cost attributable to violence was \$13,162.39 per woman (Varcoe et al., 2011).

Furthermore, the results indicated that costs continued long after leaving the violent relationship. They reported a national annual cost of \$6.9 billion for women aged 19–65 who had left abusive partners and a further \$3.1 billion for those who had experienced violence within the past three years (Varcoe et al., 2011).

Rather than talk of absolute costs, other researchers have summarized the cost of IPV in relative terms of percentage increase in healthcare utilization. One US study evaluated costs in a sample of 3,333 women (ages 18-64) who were randomly sampled from the membership files of a large health plan located in a metropolitan area and who participated in a telephone survey to assess IPV history. Annual health care utilization and costs were assembled over 7.4 years (Bonomi, Anderson, Rivara & Thompson, 2009).

The authors reported that mental health utilization was significantly higher for women with physical or nonphysical abuse only compared with never-abused women. The highest use was observed in women with ongoing abuse (relative risk for those with ongoing abuse: physical, 2.61; nonphysical, 2.18) (Bonomi et al., 2009). Physically abused women used more emergency department, hospital outpatient, primary care, pharmacy, and specialty services (Bonomi et al., 2009).

1.3 Risk factors for intimate partner violence

1.3.1 Risks in the female

Studies suggest that the most significant risk factors for IPV for the female gender is age, low education and exposure in childhood. A recent study in Curacao reported that single parenthood and unemployment increased the IPV risk for women, but not for men (Van Wijk & De Bruijn, 2012).

A study that examined the risk factors for IPV among older Chinese couples in Hong Kong also reported that significant risk factors were unemployment, substance abuse problems, prior witness of parental violence in childhood, criminal history, low level of assertiveness, anger management problems, low levels of social support and/or experiencing stressful conditions, were all factors associated with IPV (Yan & Chan, 2012).

The National Institute of Health and Family Welfare in New Delhi, India researched IPV in eighteen states in India in a study with over 14,500 female participants. Of the cohort, 39 percent of women were abused. Women who had a lower household income, were illiterate, belonged to lower caste, and who had a partner who drank/gambled were at significant risk of experiencing IPV (Mahapatro, Gupta & Gupta, 2012).

Growing evidence suggests that IPV and substance misuse are common problems that affect low-income women. The authors of a study based in an emergency department assessed the associations between different types of drug and alcohol use and different types of IPV in the Bronx, New York. Those who reported using heroin in the previous 6 months were twice as likely to present to the emergency department with IPV related injuries than non-heroin using women. However, those with an increased likelihood of

IPV and severe verbal abuse reported the use of crack or cocaine use in the past 6 months (Gilbert, El-Bassel, Chang, Wu & Roy, 2012).

Substance abuse tends to be a contributing factor in many recent investigations into IPV risk factors. In a study that observed the substance abuse of alcohol with cocaine or marijuana in 2004-2005, the authors concluded that overall, substance use disorders were consistently related to IPV (Smith, Homish, Leonard & Cornelius, 2012). Of the substance use disorders observed (alcohol, cocaine, cannabis and opioids), alcohol abuse was the most prevalent for both the perpetrator (21.7%) and the victim (24.6%) followed by cannabis use for both the perpetrator and the victim (5.8% and 7.4%, respectively) (Smith, Homish, Leonard & Cornelius, 2012).

While most of the literature has recognized that substance abuse stands out as a risk factor in IPV, researchers have also explored the psychosocial link to IPV.

IPV against women is a growing global public health problem that is related to various psychosocial, cultural, mental and economic factors. A study in Turkey explored 306 women from Edirne, in this study, 61% of women were exposed to some kind of IPV. The researchers examined the various factors that contributed to different types of IPV (Oyekcin, Yetim & Sahin, 2012). In this study, women who married against family consent were 4 times more likely to be exposed to some kind of violence and women that were in arranged marriages were over 2 times more at risk. Early exposure to violence in the spouse's upbringing increased the physical violence against women by 6 times (Gulec Oyekcin et al., 2012).

There is considerable literature supporting the link between substance abuse and alcohol. A recent study assessed the relationships between alcohol outlet density, alcohol use and IPV among young women in the United States' (Waller, Iritani &

Christ, 2012). It was found that outlet density was a non-significant contributing factor to IPV, the data results indicated that young women who drank heavily were at significant risk for receiving IPV (Waller et al., 2012).

Although many studies support a direct link with substance abuse, other social factors are important. A researcher with The Bureau of Crime and Statistics and Research in New South Wales examined the relationship between personal stress, financial stress, social support and violence against women in 2006. The study reported that financial and personal stress and a lack of social support were related to an increased risk for IPV. The correlation persisted regardless of age, being a sole parent and having a substance abuse problem (Bureau of Crime Statistics and Research, New South Wales, 2011).

1.3.2 Risk factors in the perpetrator

Anyone can be a victim of intimate partner violence. However, extensive research demonstrates that women are substantially more likely to be victims than men. Studies suggest that as many as 73% of family violence victims are women. Women also make up to 84% of spouse abuse victims and 86% of victims of abuse by a boyfriend or girlfriend (Intimate partner violence and gender, n.d.).

In most cases men are the perpetrator of IPV against women. In a study that looked at the correlation between alcohol abuse and IPV in a rural setting (2012), 56% of the cohort were perpetrators of IPV and of those, 77% admitted to being under the influence of alcohol during the IPV act (Brisbe, Ordinoiha & Dienye, 2012). Although substance abuse has been an overwhelming factor in IPV perpetration, studies suggest that that there are other factors that contribute towards males becoming IPV perpetrators.

Men who have a history of bullying peers as a child are more likely to become IPV perpetrators as adults. Bullying and IPV are both thought to stem from a desire for power and control over others (Falb, McCauley, Decker, Gupta, Raj & Silverman, 2011). In a study from the Archives Of Pediatrics & Adolescent Medicine (2011), men who ever bullied in school were over 1.5 times more likely to perpetrate IPV than men who did not. Men who bullied frequently were almost 4 times more likely to be perpetrators of IPV. From this study, it is evident that bullying as a child, especially frequent bullying is associated with an increased risk of IPV as an adult (Falb et al., 2011).

Alcohol consumption is widespread amongst men associated in IPV. Men who drink heavily are also associated as a risk factor for perpetration of IPV. A recent study (Testa et al., 2012), revealed that alcohol dependence on a daily basis was linked to the likelihood and frequency of IPV. Men with alcohol dependence symptoms contributed to the occurrence of IPV (Testa et al., 2012).

It is also worth noting that for male perpetrators, childhood experiences of violence in the home is associated with male IPV perpetration (Djikanovic, Jansen & Otasevic, 2009). All though there are a variety of other risk factors for the male perpetrator such as daily alcohol consumption, having affairs, fighting with other men and his mother having experienced spousal abuse. The most significant factor associated with male perpetrated IPV was childhood experiences of violence in the family home (Djikanovic et al., 2009).

Because there are strong associations between IPV and childhood exposure, IPV is “passed” from one generation to the next. It not only affects the victim but the sometimes the innocent witnesses. This has been proven to have a direct affect on the

psychological states and psychosocial development of children witnessing IPV (Selic, Pesjak & Kersnik, 2011). Studies have reported that those who have been the victim of or witnessed violence during their childhood will use violence to a greater extent as adults with their own families (Selic et al., 2011). A recent study suggests that childhood physical abuse history is one of the major risk factors for being a IPV perpetrator in adulthood. There is a large body of research indicating that adults who have been abused as children are more likely to abuse their own children than adults without this history (Selic et al., 2011).

1.4 Screening for Intimate partner violence

In many cases, those who have been affected by IPV suffer alone and the violent behaviour continues in future generations. It is often not until a health care provider has become aware of the IPV in the home that the situation is managed.

Health care providers and patients agree that domestic violence presents a serious health issue that falls within the area of medical care. Screening for IPV provides an opportunity for disclosure of IPV and gives an affected women and her healthcare provider an opportunity to develop a plan to protect her safety and that of her family.

In a recent study in International Nursing Review (Ben Natan, Ben Ari, Bader & Hallak, 2012), the benefit of knowledge of patients affected by IPV and the attitudes of the healthcare providers were investigated as well as the attitudes to the screening process by patients. This study was undertaken in Israel where one in seven women are reported to have a lifetime risk of being affected by IPV. In the study, patients reported that screening was essential for preventing IPV. However, both nursing and medical staff were reluctant to screen. The authors concluded "Nurses' and physicians' screening of women about domestic violence is a fundamental intervention with

implications for health care in general and basic human rights in particular” (Ben Natan et al., 2012).

In 2004 the US Preventive Task Force reviewed evidence on the effectiveness of screening and interventions for women in health care settings in reducing IPV. They established that screening instruments accurately identify women who are experiencing IPV and can provide benefits that vary by population and potential adverse effects have minimal effect on most women (Heidi, Nelson, Bougatsos & Blazina, 2012).

Since then, there has been an increased promotion to involve healthcare providers in IPV prevention through screening.

In 2010 a study conducted by the University of New South Wales (Spangaro, Zwi, Poulos & Man, 2010), measured the changes in abuse six months after routine screening for IPV in various healthcare settings. Report findings exposed that after 6 months abused women were now in agreement with attitudes relating to abuse, particularly that “being hurt by another partner affects a women’s health and health services should ask about abuse”. In this study, the proportion of women reporting current abuse was significantly lower after 6 months (Spangaro et al., 2010).

Data suggests that screening for IPV is a valuable tool and allows an abused woman to receive the help that she may not otherwise get. However the strength of the risk assessment is merely the first step in preventing IPV in family relationships (Williams & Grant, 2006). It is fundamental to train healthcare professionals that are associated with addressing IPV issues to properly link valid risk assessments obtained from abused women to well organised strategies of supervision and treatment so that the victims are protected (Williams & Grant, 2006).

The patient-physician consultation could theoretically assist IPV victims in considering their options of living without violence. It could also play a critical role in preventing future violence. Despite this, many professionals in the health care system do not appreciate the benefits of such interactions (Hamberger & Phelan, 2004). Hamberger and Phelan (2004), investigated the barriers to screening for IPV by healthcare providers. With regards to professionals, typically the biggest barrier was that the lack of training about IPV would leave most health care providers unprepared to screen, identify and help IPV victims (Hamberger, Phelan, 2004).

A 2004 study from Japan (Kataoka, Yaju, Eto, Matsumoto & Horiuchi, 2004) comparing the various types of screening tools for IPV victims, identified that there was a requirement for post screening counseling sessions. Although they concluded all pregnant women should be routinely screened for IPV, considering the high burden of suffering they experience, they emphasized that acceptable screening tools should be introduced in parallel with effective interventions (Kataoka et al., 2004).

There is little data that evaluates the willingness of women to disclose a possible IPV history. It is unwise to assume that simply offering a series of questions via a questionnaire is all that is needed to support abused women. The women's willingness to discuss and openness for getting help for health issues also should be considered (Kelsey, Hegarty, O'Doherty, Astbury & Gunn, 2004). In a study by the Kelsey et al. (2004) participants were screened for health and lifestyle issues. The survey included questions about the requirement for more physical activity, smoking status, substance abuse, control over eating, feeling depressed and fear of a partner. The survey revealed that of all of these issues women were least comfortable in disclosing fear of a partner in a healthcare setting, unless they felt safe in that setting (Kelsey et al., 2004).

1.5 Prevention of Intimate partner violence

Table 1.5.1 summarises the risk factors of IPV. Given risk factors have been identified, it would be reasonable to plan IPV prevention strategies to detect the risk factors and implement interventions to reduce them. Data suggests that IPV is widespread across the globe. Although demographic variables may impact on the prevalence of IPV the fact remains that IPV is common. We know that a common risk factor for IPV is exposure during childhood, either as a witness to IPV or a victim of domestic violence in childhood. Prevention strategies put in place in healthcare settings may reduce the occurrence of IPV, in turn less children will be exposed and families in future generations may avoid being affected. Pregnancy and general women health services are obvious targets for implementations strategies.

In 2006, a randomized, two arm clinical trial in public primary care clinics examined interventions with 360 women who had been abused by their partner. In this study the two interventions were a wallet size referral card that lists safety plans and resources for IPV services, and a 20 minute nurse case management protocol. Although there was a noteworthy difference between groups, both groups reported significantly fewer threats of abuse, and were adopting more safe behaviour 24 months after the study commencement. These researchers went on to discuss that regardless of type of treatment, assessment and referral information alone is an important intervention to improve outcomes for abused women (McFarlane, Groff, O'Brian & Watson, 2006).

Pronyk et al (2006) studied the effect of a brief intervention with microfinancing as an intervention for the prevention of IPV. In this trial, a learning and action program that had been integrated into loans that were offered to the poorer women in the intervention

group. In one cohort, IPV was reduced by as much as 55% following a combined microfinance and training intervention.

IPV prevention in a health care setting should begin with screening followed by intervention that allows women to talk confidentially to somebody they trust and can give them information about resources for IPV services.

Table 1.5.1 Risk factors for IPV

IPV - Risk factors in the female victim	IPV - Risk factors in the male perpetrator
Age	Substance abuse
Low education	History of bullying peers
Childhood exposure	Alcohol abuse
Single parenthood	Alcohol dependence
Unemployment	Childhood violence experience
Substance abuse	Daily alcohol consumption
Criminal history	Having affairs
Anger management problems	Tendency to fight with other men
Low social support	Mother having IPV history
Stressful conditions	Witnessing IPV as a child
Lower income	
Illiterate	
Alcohol abuse	
Marital dysfunction	
Alcohol abuse at a young age	
Stress	
Sole parenthood	

1.6 Associations between intimate partner violence and poor health outcomes

Intimate partner violence is associated with many health risks. Those who are at risk are not only the victim of the violence but also the children who have been subjected to witnessing the violence on a regular basis. Although it is self-evident that injuries due to trauma as a result of violence will be coupled with health risks, studies indicate that there are many other health risks associated with IPV.

Much of the data supports the idea that IPV is closely associated with poor mental health outcomes for both males and females (Afifi, MacMillan, Cox, Asmundson, Stein & Sareen, 2009).

In a study that investigated the correlation of exposure to IPV during childhood and women's health, women who were exposed to violence or witnessed IPV during their childhood reported poorer health status and a higher prevalence of depression and IPV in adulthood. It was also observed that there was a greater use of health care and mental health services for women with past IPV exposure during their childhood compared with women who had no past exposure (Cannon, Bonomi, Anderson, Rivera & Thompson, 2010).

In a study compiled by the Department of Child, Adolescent and Women's Health in Peking University School, 1577 women were surveyed for previous IPV exposure. The study found 24.6% of women suffered psychological aggression and 5.5% suffered physical assault in the year following the IPV incident. The authors concluded that domestic violence posed a severe threat to women's physical and mental health (Gao & Jacka, 2012).

A meta-analysis looking to evaluate the co-morbidity of IPV and specific depression outcomes in affected women (Beydoun, Beydoun, Kaufman, Lo & Zonderma, 2010), suggested that women who have been exposed to IPV had a two to three-fold increased risk of a major depressive disorder and up to two-fold increased risk of elevated depressive symptoms and postpartum depression compared to non-exposed women.

In the *Journal of Interpersonal Violence*, Hegarty et al (2012) conducted a study of women attending Australian general practices who reported a fear of partners during the last 12 months. Of the participants, in the last year, over one third had seen a psychologist or had at least 5 GP visits and reported poor or fair health. Despite the use of more medications, women with severe combined abuse had poor quality of life and mental health. The study concluded that health practitioners should take a history of type and severity of abuse, particularly for women with mental health issues and assist them in accessing specialised services (Hegarty et al., 2012).

While there is much research to prove that women that have been exposed to IPV both as adults and those who witnessed IPV as children are at greater risk of poor mental health outcomes as adults, it is also fair to say those exposed to IPV are more at risk of other poor reproductive outcome. In a study titled “women who had a lifetime experience of violence and adverse reproductive outcomes” Yoshikawa (2012), investigated the association between a lifetime experience of IPV and terminated pregnancies among married Indian women. In this study the National Family Health Survey was evaluated with detailed information about IPV in relation to a question relating to pregnancy outcomes. Results showed that 39.6% of Indian women were victims of IPV. 18.3% had terminated a pregnancy during their lifetime. The odds ratio of a terminated pregnancy among those who had been exposed to IPV was 1.62. The results suggest that the prevention of IPV would reduce the high incidence of terminated

pregnancies, thus improving maternal health in India (Yoshikawa, Agrawal, Poudel & Jimba, 2012).

The World Health Organization, Department of Reproductive Health and Research, Geneva, Switzerland conducted a study in 2012 aimed to inspect the association between IPV, abortion and unintended pregnancies (Pallitto, Garcia-Moreno, Gansen, Heise, Ellsberg & Watts, 2012). In this study, population data was extracted from 17 518 ever-partnered women participating in the WHO Multi-Country Study on Women's Health and Domestic Violence over 15 sites in 10 countries. The conclusion of this vast study was that IPV was a frequent and strong risk factor for both unplanned pregnancy and termination of pregnancy. It was concluded that reducing IPV could therefore significantly reduce risks to maternal and reproductive health (Pallitto et al., 2012).

Exposure of IPV was found to be a contributor to sexual risk behavior resulting in adverse sexual health outcomes (Laanpere, Rimgets, Part & Karro, 2012). The study investigated the associations IPV and sexual health outcomes in Estonia, Europe. In this trial, participants were non pregnant females aged between 16-44.

Of 1966 respondents, 362 (18.4%) reported IPV during 12 months preceding the survey. Physical IPV was reported by 339 (17.2%), sexual by 80 (4.1%) and both physical and sexual by 35 (1.8%) of respondents. After controlling for significant confounding socio-demographic factors, exposure to IPV was found to be associated with contraception non-use [adjusted odds ratio (AOR) = 2.02, 95% confidence interval (CI) 1.44-2.82] or the use of unreliable contraceptive methods (AOR = 1.54, CI 1.16-2.04) during the most recent sexual intercourse, having never used a condom (AOR = 1.53, CI 1.12-2.10), repeat induced abortion (AOR = 1.72, CI 1.24-2.37), lifetime risk of sexually transmitted infections (AOR = 2.05, CI 1.56-2.68) and dyspareunia (AOR = 2.14, CI 1.65-2.77) (Laanpere et al., 2012).

1.7 Association between intimate partner violence and cervical disease

In the late 1990s the first links between IPV and cervical disease were reported (Quinlivan, Petersen, Davy & Evans, 2004). Women exposed to intimate partner violence may be at increased risk of developing precancerous or cancerous lesions of the cervix. There is evidence that they are at increased risk of acquiring sexually transmitted infections, including high risk human papilloma virus, a mandatory precursor for such lesions.

In a study of 375 women attending a sexually transmitted disease clinic, 37.6% of women reported ever having experienced physical assault by an intimate partner and 32.8% reported verbal threats (Augenbbraun, Wilson & Allister, 2001).

A study of 774 women attending a prenatal clinic found that women who reported exposure to intimate partner violence were more than twice as likely to have been diagnosed with a sexually transmitted infection (Martin, Matza, Kupper, Thomas, Daly, Cloutier et al., 1999).

An Australian study in a teenage pregnancy population reported that teenagers exposed to domestic violence were at seven-fold risk of having an abnormal Pap smear compared to those teenagers not exposed to partner violence (Quinlivan and Evans, 2001).

1.7.1 Human Papilloma virus

Human papilloma virus (HPV) is a very common infection that can be passed from person to person through sexual contact. Studies suggest that four out of every five people who have sex will get HPV at some point in their lives. According to The Victorian Cancer Council, HPV is so common that it could be considered a normal part of life after becoming sexually active (Cancer council Victoria 2008). Most women will only become aware of the infection when they have an abnormal Pap smear test result that has been caused by the virus. The majority of women who acquire HPV will subsequently clear the virus as a result of activation of their immune system.

Certain subtypes of HPV infections can cause abnormal cell growth (dysplasia) on the cervix.

There are 80 HPV genotypes. Of these, 30 are known to infect the genital tract and 20 have been identified as carcinogenic.

Table 1.7.1 outlines the common genotypes according to their oncogenic potential.

Genotypes 6 and 11 are typically associated with low risk while types 16 and 18 are most commonly found in malignant lesions. A recent bulletin from the World Health Organization concluded that nearly all cervical cancer resulted from genital infection with a high-risk HPV (WHO, 2012). The immune system appears to be able to clear low-risk viruses. However, it has difficulty clearing the high-risk subtypes. The prolonged exposure results in dysplasia or malignant changes within the cervical cells.

While condoms are an effective barrier against many sexual infections, they do not fully cover all of the genital skin and therefore they do not reliably protect against HPV.

Although genital warts resulting from HPV infections can be treated, there is currently no cure (Cutts et al., 2007).

Table 1.7.1 Common genotypes according to their oncogenic potential

	Carcinogenic HPV Genotypes of the genital tract			
Low risk	6	11	41	44
Intermediate	31	33	35	
High risk	16	18	45	56

1.7.2 Cervical Intraepithelial Neoplasia

When a cell is infected with the HPV it can result in nuclear change that results in cervical intraepithelial neoplasia. This is graded as;

CIN1 (Cervical intraepithelial neoplasia 1)

CIN2 (Cervical intraepithelial neoplasia 2)

CIN3 (Cervical intraepithelial neoplasia 3)

HPV infection in cells without dysplasia and CIN1 are referred to as a low-grade precancerous change. These changes are frequently reversible over 12-24 months.

CIN 2 and 3 are referred to as high grade precancerous changes. These changes resolve less frequently and may progress to definite cervical cancer. As a result, these lesions require treatment.

Figures 1.7.2.1, 1.7.2.2, 1.7.2.3 and 1.7.2.4 demonstrates the differences in the colposcopic appearance of a normal appearing cervix compared to CIN1, 2 and 3.

Figure 1.7.2.1 Normal appearing cervix



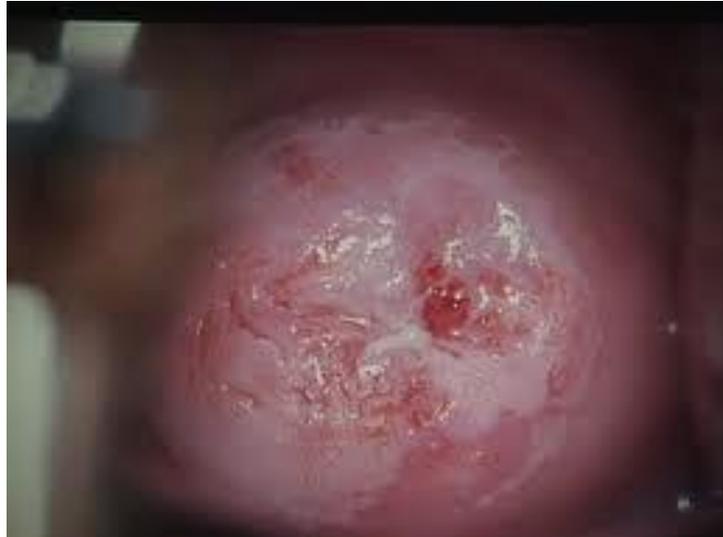
Accessed from,
http://www.brooksidepress.org/Products/Military_OBGYN/Textbook/CervicalDisease/cervical_disease_and_neoplasia.htm (date: 10 March 2012)

Figure 1.7.2.2 CIN1



Accessed from, <http://www.hpv.com.ph/ClinicalPhotos/CIN1.jpg> (date: 10 March 2012)

Figure 1.7.2.3 CIN2



Accessed from, <http://www.operationalmedicine.org/ed2/images/Cervix/cin2a.jpg> (date: 15 March, 2012)

Figure 1.7.2.4 CIN3



Accessed from <http://www.turhanuslu.com/CIN3.png> (Date 2 April 2012)

Most low-grade cell changes or abnormalities are caused by transient HPV infection. Low-grade changes are sometimes referred to as mild dysplasia or cervical intraepithelial neoplasia (CIN) 1. Some of these low-grade changes are also seen with other infections or occasionally in women after menopause (atrophic changes). These minor cell changes usually clear up by themselves. Most women with low-grade changes on their Pap tests will be asked to have another test in 12 months rather than two years.

1.7.3 Cervical cancer

Cervical cancer is a preventable but common cancer in women and is the most common cancer affecting women in developing countries. An article from the World Health Organization reports that cervical cancer has been responsible for an estimated 260,000 deaths and 500,000 new cases in 2005 (WHO HPV and HPV vaccine, 2007).

Squamous cell carcinoma is the most common type of cervical cancer. Over 90% of these cases and deaths were reported from low and middle income regions where there is limited or no access to cervical cancer screening and treatment. The World Health Organization predicts that in 2030 deaths from cervical cancer will double to 435,000 despite the availability of screening and treatment for the disease (WHO, 2007).

1.7.4 Human Papilloma Virus Vaccine

The mainstay of combating cervical cancer is through prevention of the cancer by the use of the human papilloma virus vaccine. Currently, vaccines against HPV are being implemented in many developed nations. Australia has a national immunization program for 12 year old girls. In theory, cervical cancer can be prevented and treated by

HPV vaccine therapy. Important progress has been made towards producing recombinant, type specific, vaccines both preventive and therapeutic. Studies have shown significant effects on prevention of cervical cytological abnormalities and CIN and these are now moving to the next phase in terms of evaluation. The conclusion from these studies is that vaccinations could substantially reduce the incidence of cervical cancer. However, the cost of these vaccine programs is prohibitive for developing nations and the available vaccines do not cover all high-risk HPV subtypes. Until vaccines eradicate this disease, the mainstay of management is detection of early HPV infection and precancerous changes of CIN1, CIN2 and CIN3 and their treatment before progression to cancer. In developed countries this is achieved through the Pap smear screening program (WHO, 2007).

In Australia, the national cervical screening program (2012), aims to reduce deaths from cervical cancer through cervical screening and encourages women to have regular pap tests, the mortality rate from cervical cancer has more than halved from the start of the program.

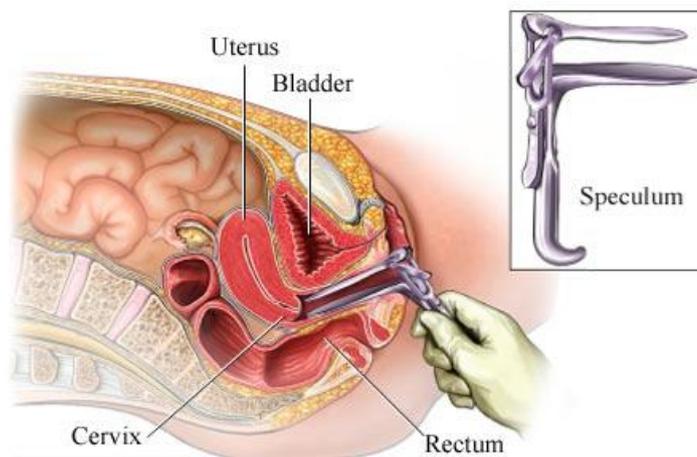
1.8 Investigation and Treatment of CIN and Cervical Cancer

1.8.1 The Pap smear

The Pap test is a simple test that checks for changes to the cells of the cervix. A cervical smear is taken by a trained healthcare professional, usually a general practitioner at their local practice. Using a speculum the cervix is visualized (see figure 1.8.1.1 & 1.8.1.2). Once the cervix is visible, a wooden spatula or plastic brush placed onto the cervix and into the endocervical canal and used to scrape cells from these sites. The cells are then smeared onto a glass slide preserved with a fixative, and sent to a laboratory for analysis (Bain, Burton & MrGavigan, 2011).

It is recommended by the National cervical screening program (2012), that all women over the age of 18 who have ever had sex have a Pap smear test every two years until the age of 70 years.

Figure 1.8.1.1 Longitudinal section of the female organs after insertion of a speculum



Accessed from http://www.mountainside-medical.com/product_images/uploaded_images/vaginal-speculum-examination-diagram.jpg (date 6 July 2012)

1.8.1.2 View of the cervix through a speculum



Accessed from http://www.sciencephoto.com/image/294640/large/M8500155-View_through_a_speculum_of_a_cervical_polyp-SPL.jpg (date 6 July 2012)

1.8.2 History of the Pap test

The pap smear test was invented by Georgious Papanikolaou. After reading a book by Walter Hayle Walshe (1843) “A Practical treatise on the diseases of the lungs”, Georgious Papanikolaou learned that malignant cells could be recognised under a microscope. Papanikolaou began testing the cells from the cervix. Before Papanikalaou discovered that cells collected from the cervix could be analysed under a microscope and abnormal but precancerous stage changes could be identified, cervical cancer was usually not detected until it reached an advanced stage.

With the discovery of the Pap test, cellular changes could be detected before they became cancerous. Premalignant cells detected on a Pap test can be successfully treated. Cervical cancer deaths have dropped by over 70 percent as a result of the widespread introduction of the Pap smear in developed countries (The history of pap screening test, 2010).

1.8.2.1 Abnormal Pap test result

An abnormal Pap test result is when some cells of the cervix appear to differ from the normal cells resulting in either low-grade or high-grade change. A patient who has had a low grade abnormality on her Pap screen test for the first time may be advised to have a repeat Pap smear in 12 months time. In cases where low-grade change persists or a high-grade change has been identified, the patient will be referred to a gynaecologist for further testing.

1.8.2.2 Colposcopy

Once a patient has been referred for further investigation, she will undergo a colposcopy. A colposcopy is an examination of the cervix, vagina and vulva using an

instrument called a colposcope. A colposcope is equipped with a microscope and an appropriate light source to enable close visual inspection of the cervix Figure 1.8.2.2.1 shows a standard looking colposcope (Shafi & Nazeer, 2012).

Like a Pap smear, during a colposcopy examination, a speculum is used so that the gynaecologist can have a clear view of the cervix. During the colposcopy a speculum is positioned into the vagina and an acetic acid solution is applied to the cervix using a swab. The acetic acid solution is left for 30-60 seconds during which time abnormal areas may become white and visible through denaturing of unstable proteins. If an abnormal area is identified a biopsy is required. Biopsy forceps are used to collect a small tissue sample from the abnormal area on the cervix. The biopsy sample is sent off to a laboratory to get a histological diagnosis. Arrangements are made for the patient to return to the clinic to discuss the results of the biopsy some weeks later. Figure 1.8.2.2.2 shows the colposcopy examination room at Sunshine Hospital. Figure 1.8.2.2.3 shows magnified visualisation of the cervix using a colposcope, an example of both normal and abnormal appearing cervix can be seen.

Figure 1.8.2.2.1 Colposcope

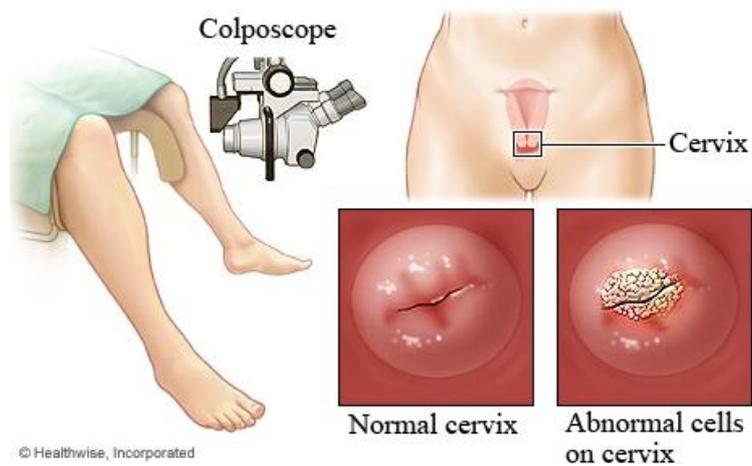


Accessed from http://www.quickmedical.com/images/sku/tnails_250/23602.jpg (date 10 April 2012)

Figure 1.8.2.2.2 Colposcopy examination room



Figure 1.8.2.2.3 Colposcope, cervix and magnified visualisation of the cervix through a colposcope



Accessed from
http://images.emedicinehealth.com/images/healthwise/medical/hw/h9991562_001.jpg
(date 20 April 2012)

1.8.3 Treatment of CIN

The key step in the prevention and treatment of cervical cancer is for women to regularly engage with their healthcare providers and have screening every 2 years with pap smears to identify if there is an abnormal result. If a problem has been identified it is important that women attend clinical services to participate in treatment of pre-cancerous changes until they have achieved a cure.

Because 90% of cervical cancers begin as pre-cancerous CIN, the screening for CIN (with pap smears) and the treatment of high grade CIN (CIN 2 or 3) is the most effective method of preventing a woman from developing cervical cancer. Follow up after treatment may take up to 2 years for high-grade precancerous lesions. The two main methods of treatment of CIN are ablative techniques and excisional methods (Edmonds, 2007, pp 614-22).

1.8.3.1 Ablative Techniques

There are four main ablative therapies to treat precancerous changes of the cervix.

1.8.3.1.1 Cryocautery

Cryocautery is a procedure that uses very cold temperatures to cause tissue destruction to treat abnormalities of the cervix. Cryocautery is best reserved for small lesions due to a lack of ability to gauge the depth of destruction with this technique. Current practice in developed countries is not to use cryocauters. It does, however, have a role in developing countries with low resources who use a “see and treat” after visual inspection of the cancer (Edmonds, 2007, p 614-22).

1.8.3.1.2 Electrodiathermy

Electrodiathermy, destroys more tissue than cryocautery. This procedure is done under a general or local anesthesia and with colposcopy guidance, an extension of electrodiathermy commonly used is wire loop excision.

1.8.3.1.3 Cold Coagulation

Cold Coagulation can be used to destroy the affected area, this method also requires the use of a local anesthesia. Unlike other methods of treatment, cold coagulation removes cells using heat that has been applied to a Teflon-coated thermosound. The use of this procedure can treat the whole of the transformation zone.

1.8.3.1.4 Laser

Laser technique is precise and is done using a micromanipulator attached to the colposcope. The laser treatment is useful for treating premalignant disease of the vagina (Edmonds, 2007, pp 614-22).

1.8.3.2 Excisional methods to treat CIN

The mainstay of excisional treatment is the wire loop excision (LLETZ), laser cone and cold knife cone.

1.8.3.2.1 Large loop excision of transformation zone

Large loop excision of transformation zone (LLETZ), also referred to as wire loop excision is the preferred method of treatment for dysplasia according to the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG)(Abnormal pap smear. Ed 3, 2007).

During the LLETZ procedure, local anesthetic is injected to make the cervix numb. Similar to colposcopy, a weak acetic acid and /or iodine solution is then applied to the surface of the cervix to make the areas of abnormal cells more visible. Layers of abnormal cells are then cut away from the cervix with a fine semi-circular wire loop that has an electrical current flowing through it. The wire loop is used to remove the portion of the cervix that has been identified as containing the precancerous changes. The abnormal appearing tissue is then sent to the pathology for examination.

The pathology analysis will then confirm whether all of the abnormal cells have been removed and the type of abnormality is determined.

The procedure takes about 15 to 30 minutes and most women are able to return to normal activities within two to three days (RANZCOG, 2007).

1.8.3.2.2 Cone Biopsy

A cone biopsy is done when Pap smear results indicate abnormal changes in glandular cells, abnormal cells are in the endocervical canal or early cancer is suspected (RANZCOG, 2007).

Cone biopsy is an operation that requires the patient to have a general anesthetic. During this procedure the cervix is painted with iodine solution to highlight any abnormal areas of the cervix and a cone shaped wedge of tissue containing abnormal cells is removed using a laser or scalpel. This tissue is sent to pathology laboratory for examination (RANZCOG, 2007).

1.8.4 Treatment of cervical cancer

Once cancer is present, full disease staging and major operative treatment with a radical hysterectomy and pelvic lymph nodes dissection, radiation or chemotherapy may be required.

1.9 Follow up of patients

Patients with CIN and cervical cancer require follow-up to optimise outcomes.

1.9.1 Follow-up of Cervical intraepithelial neoplasia

Patients with CIN2 and CIN3 treated with ablative or excisional techniques require a 2 year period of follow-up involving colposcopy, Pap smear and Digene tests for HPV. In Australia, this follow-up occurs at 6 months, 12 months and 24 months past surgery.

1.9.2 Follow-up of cervical cancer

Patients with cervical cancer require 5 years follow up with vault smears and periodic examinations. Follow-up is tailored to disease stage at diagnosis.

1.10 Recurrence

1.10.1 CIN

Approximately 1 in 10 women who have CIN2 or CIN3 will develop disease recurrence within the 2 year follow-up period. Re-treatment results in the CIN being cured in 90% of cases.

1.10.2 Recurrence of cervical cancer

Recurrence in women with cervical cancer depends upon disease stage at diagnosis and varies from 30% to 90% 5 year survivals (Cervical cancer Research UK, 2012).

1.11 Study hypotheses

IPV does not directly cause cervical cancer. However, IPV is a risk factor for the acquisition of high-risk HPV through sexual activity.

This still does not explain why outcomes of treatment would be less effective than with women not exposed to IPV. We hypothesise that indirect processes may impact upon a women's capacity to access and participate in treatment programs. IPV may therefore be a key identifier of women with sub optimal participation in precancerous treatment programs of the cervix.

We hypothesised that the presence of IPV would be associated with disorganised behaviour and depression that increases the likelihood of women being lost to follow up when they otherwise had potentially treatable precancerous condition such as CIN.

1.12 Study aim

The aim of the present thesis is to:

1 – Explore the prevalence of domestic violence in a cohort of women attending a gynaecological clinic for evaluation of an abnormal Pap smear and to look for associated psycho social and demographic factors in these women.

2 – Investigate whether the poorer cancer outcomes in women exposed to domestic violence might be explained by high default rates in routine aspects of care.

3 – Investigate whether default risks apply to confronting gynaecology clinics such as colposcopy, also apply to less stressful and confronting clinical services such as family planning and maternity services.

2 Methods

2.1 Study type

A prospective longitudinal cohort study was undertaken.

2.2 Ethics approval

Institutional ethics approval from the hospital ethics committee and University were obtained (see appendix 1 for ethics approval forms). Furthermore, written information sheets were provided and individual informed consent was obtained from each participant.

2.3 Safety considerations

Because the study involved IPV, safety issues were specifically considered and addressed prior to the commencement of the study. Women attending the colposcopy clinic were invited to meet with a research nurse in a private room in the absence of their partner. Women were interviewed in a room with two exits so that any serious disclosure issues would be able to be managed in a safe manner, with the woman having a secure exit from the clinic and service area. Local police authorities were consulted about the study to ensure that they were happy with study protocols. With the subject's consent, the attending clinician was advised of the disclosure and any positive results in the questionnaire. Participants were also offered access to a social worker for further information and support if they requested this service.