Intimate Partner
Violence in Nicaragua
Studies on ending abuse, child growth, and contraception

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2011
To my family
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Abstract

Background: Intimate partner violence (IPV) is a pervasive, worldwide public health problem and one of the most common violations of human rights. The aim of this thesis were twofold: (i) to study the process and factors related to ending of IPV of Nicaraguan women and (ii) to examine to what extent IPV exposure is associated with the child linear growth and women’s contraceptive use after pregnancy.

Methods: Data were collected from a panel study which followed 398 women who were inquired about their IPV exposure during pregnancy and at follow-up a median of 43 months after delivery. Three hundred seventy five of their children were available for anthropometric assessment. Thirteen in-depth interviews were conducted with women exposed to physical/sexual IPV during pregnancy but not at follow-up. For analysis both quantitative and qualitative methodologies were used.

Results: Women experienced four patterns of abuse: never abused, ending abuse, continued abuse, and new abuse. Of the women who experienced any IPV before or during pregnancy, 59% (95%CI 52-65%) reported no abuse at follow-up (135/229). Women exposed to a continued abuse pattern and those exposed to any IPV, emotional or physical IPV at follow-up had higher odds of reversible contraceptive use. Further, exposure to any IPV and controlling behavior by a partner during pregnancy impaired the index child linear growth. Girls whose mothers had low social resources during pregnancy were the most affected. Women felt that being inquired about IPV while pregnant contributed to process of ending the abuse.

Ending IPV was experienced as a process with three phases: “I came to a turning point,” “I changed,” and the “Relationship ended or changed.” Successful strategies to ending abuse mainly involved utilizing informal networks. Ending IPV did not always mean ending the relationship. IPV awareness, severity of the abuse, and economic independence were individual factors associated with ending of abuse. At the relationship level, diminishing or no exposure to controlling behavior by their partner was a key element. At the community level, a supportive and less tolerant to IPV environment as well as exposure to IPV inquiry during pregnancy facilitated the process of ending abuse.

Conclusion: The study found that IPV exposure is associated with the children’s linear growth and women’s reversible contraceptive use. In addition, it is clear that gender norms regarding IPV are not static and that they play an important role in facilitating the process of ending the abuse by increasing abused women’s access to emotional and material support. Our results emphasize the relevance of improving public services response to IPV.
Original papers
This thesis is based on the following four papers, which will be referred to in the text by their Roman numerals


II. Salazar M, Högberg U, Valladares E, Öhman A. The supportive process for ending intimate partner violence after pregnancy: the experience of Nicaraguan women. *Journal Violence Against Women*. Accepted **


IV. Salazar M, Valladares E, Högberg U. Questions about IPV should be part of contraceptive counseling—Findings from a community-based longitudinal study in Nicaragua. Submitted.

* The article has been published in open-access journal.
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Acronyms

ANCOVA: Analysis of covariance
CI: Confidence interval
DHSS: Demographic and health surveillance system
HIV: Human immunodeficiency virus
IPV: Intimate partner violence
IQR: Interquartile range
NGO: Nongovernmental organization
OR: Odds ratio
SRQ: Self-Report questionnaire
SPSS: Statistical package for the social sciences
VAW: Violence against women
WHO: World health organization
## Glossary and definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency</td>
<td>The capability to act, to make choices and make a difference.</td>
</tr>
<tr>
<td>Confounding</td>
<td>A situation in which a measure of the effect of an exposure on risk is distorted because of the association of exposure with other factor (s) that influence the outcome under study (Last, 1988).</td>
</tr>
<tr>
<td>Cohort study</td>
<td>The method of epidemiology study in which subsets of a defined population can be identified who are, have been, or in the future may be exposed or not exposed, or exposed in different degrees to a factor or factors hypothesized to influence the probability of occurrence of a given disease or other outcome (Last, 1988).</td>
</tr>
<tr>
<td>Empowerment</td>
<td>Enhancing an individual’s or group’s capacity to make choices and to transform those choices into desires actions and outcomes (Alsop, 2005).</td>
</tr>
<tr>
<td>Gender</td>
<td>The structure of social relations that centers on the reproductive arena, and the set of practices, governed by this structure, that brings reproductive distinctions between bodies into social processes (Connell, 2002).</td>
</tr>
<tr>
<td>Grounded theory</td>
<td>A qualitative analytical method that focuses on the creation of theory that was derived from the data, systematically gathered and analyzed through the research process (Strauss, 1998).</td>
</tr>
<tr>
<td>Height-for-age</td>
<td>Anthropometric index that reflects achieved linear growth and its deficits indicate long-term, cumulative inadequacies of health and nutrition (WHO, 1995).</td>
</tr>
<tr>
<td>In-depth interviews</td>
<td>A qualitative data collection method in which the interviewer explores a topic in considerable depth.</td>
</tr>
<tr>
<td>Intimate Partner</td>
<td>Refers to any behavior within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship. It includes: acts of physical aggression, psychological abuse, forced intercourse and other forms of sexual coercion, and various controlling behaviors (Heise, 2002).</td>
</tr>
<tr>
<td>Violence</td>
<td>A cult around masculinity that emphasizes the notion of men as sexually-driven and in need of exercising domination and which strongly influences gender relation in Latin America.</td>
</tr>
<tr>
<td>Marianismo</td>
<td>Represents a cult around virginity and motherhood that idealizes the figure of the Virgin Mary as a model of chastity, submission and sacrifice for women, and that highly influences gender relations especially in Latin American context.</td>
</tr>
<tr>
<td><strong>Patriarchy</strong></td>
<td>Patriarchy is a social system in which the father or eldest male is head of the household, having authority over women and children. Patriarchy also refers to a system of government by males, and to the dominance of men in social or cultural systems. It refers to a social situation where men are dominant over women in wealth, status and power.</td>
</tr>
<tr>
<td><strong>Panel study</strong></td>
<td>A combination of cross-sectional and cohort methods, in which the investigator conducts a series of cross-sectional studies of the same individual or study sample. This method of study permits changes in one variable to be related to changes in other variables (Last, 1988).</td>
</tr>
<tr>
<td><strong>Violence against women</strong></td>
<td>Any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life (UN, 1993).</td>
</tr>
<tr>
<td><strong>Z-score</strong></td>
<td>The deviation of the value for an individual from the median value of the reference population, divided by the standard deviation of the reference population (WHO, 1995).</td>
</tr>
</tbody>
</table>
**Introduction**

Health inequalities between men and women are determined not only by the biological differences between them but also by their gender (1)—the socially constructed notion of what is to be a man or a woman in a given society.

Gender is above all a matter of social relations, where power is a key dimension (2). Thus, gender-oriented public health policies and actions must take into account that beliefs and behaviors influencing health outcomes are power expressions of the social constructions of masculinity and femininity in a given community (3).

In many patriarchal societies, violence as a form of systematic control and dominance of men over women represents a significant feature of hegemonic masculinity—the idealized form of what is to be a man in a given community (4). This is especially important because interpersonal and collective violence are one of most significant determinants of morbidity and mortality around the world (5).

Although interpersonal violence can affect anyone in a given community or family, women are often more exposed (5). Violence within an intimate partnership is not an exception. The gender inequalities in exposure to violence can be explained by the patriarchal system of beliefs prevalent in most societies, which have created unequal power relationships between men and women.

Taking into account these differences, the United Nation’s Declaration on the Elimination of Violence against Women has defined Violence against Women (VAW) as follows:

> “any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life” (6).

Although women can experience interpersonal violence from strangers, neighbors, and family members, they are more often exposed to violence from their male intimate partner (boyfriend or husband) (7). However, one must be clear that Intimate Partner Violence (IPV) against a woman is more than physical abuse. As Heise and García-Moreno have stated, it also includes acts of emotional abuse, sexual abuse, and controlling behavior (7) by a partner.

In the last 30 years, there has been growing recognition in the international community of the role of VAW in hampering women’s development, health, and empowerment. In 1994, the United Nations recognized VAW as a clear violation of women’s rights, as an obstacle to achieving gender equity (6), and as a key determinant of women’s reproductive and sexual health (8).

The Organization of American States (9) and the United Nations (6, 10) have emphasized that in order to improve women’s health status in a given population, governments must take public health actions at the community and the family level.
to prevent VAW from occurring or reoccurring. This is a step towards the recognition of violence within the family as a public rather than a private issue.

Both institutions have mandated governments to implement secondary prevention of VAW to mitigate the effect it has on women’s health. These efforts are more likely to succeed if responses to VAW are coordinated with others societal actors, such as nongovernmental organizations (NGOs), women’s associations, and institutions in the respective community (5).

**The magnitude of IPV**

IPV is a pervasive, worldwide public health problem of overwhelming magnitude. It affects women across different continents and cultural backgrounds. However, in spite of this pervasiveness, differences in methods and instruments used to collect data make it difficult to compare IPV rates across countries (7).

To allow comparison of IPV prevalence across countries, the WHO has recently conducted a multi-country study on women’s health and domestic violence using standardized techniques and questionnaires to collect and analyze data. The study reported that the prevalence of physical or sexual IPV in the year prior to the survey ranged from 4% to 54%. In this landmark study, women from rural areas of developing countries such as Peru, Bangladesh, Ethiopia, and Tanzania experienced the highest levels of IPV (11).

Women are also at risk of IPV while pregnant. Population-based and clinical studies in Latin America found that between 12% and 13% of pregnant women were exposed to physical violence during their current pregnancy (12-13). Moreover, women from low income countries have higher IPV exposure during pregnancy than their high-income-country counterparts (14).

**IPV and women’s health**

The association between IPV exposure and women’s mortality and ill health is well documented. For example, one South African study found that half of all female homicides were due to IPV (15). Further, exposure to IPV has been associated with higher rates of abdominal injuries, fractures, lacerations and ocular damage (7). Women experiencing IPV often report higher rates of poor mental health. Evidence shows that lifetime IPV exposure is associated with mental health problems such as depression/depressive symptoms, substance use (16), emotional distress, suicidal thoughts, and suicidal attempts (17).

Women’s reproductive health is often impaired by their partner’s violent and controlling behavior. This frequently translates into a higher frequency of unintended pregnancies (18-20), pregnancy loss (20), and diminished use of the woman’s preferred method of contraception (21). Recent evidence from cross-sectional, population-based studies has shown that women exposed to IPV have higher odds of contraceptive use than those
not exposed (22-24). However, women’s attempts to have greater control over their own fertility are often weakened by their partner’s sabotage of their birth control methods (25-26) and forced unprotected sex (26). Furthermore, unprotected forced sex often translates to a higher risk for sexually transmitted diseases and HIV infection. One cohort study in an African setting found that exposure to IPV was associated with a 51% higher risk of acquiring HIV after a two-year follow-up period (27).

**IPV and children’s health**

Women’s impaired mental/physical health and diminished autonomy affects their ability to care of their children effectively. These limitations translate into poor infant health outcomes that start even before the child is born. For example, maternal exposure to IPV during pregnancy has been consistently associated with low birthweight infants (28-30). Other studies have found that children whose mothers have been exposed to various forms of IPV have higher odds of acute respiratory tract infection/diarrhea (31), severe acute malnutrition (32), and under five years mortality (33) than those not exposed.

**Ending IPV as a process**

IPV is far from being a one-off occurrence. Women exposed to IPV often face a continuous pattern of abuse (34). Community-based studies have found the percentage of women reabused can range from 50 to 76% (35-37), and one clinical-based study found that four out of ten women abused at baseline were also abused at least once during the four-year follow-up period (38). IPV during pregnancy can also represent a continuation of previous abuse (39).

Although IPV exposure is common, ending it is a complex process that can span several years before ending abuse (40). In the early stages of the process, women might consider the IPV as transitory (41) and they might even accept the violence as a normal part of their lives (42). However, these notions can change after women are exposed to specific traumatic events or changes in their social circumstances (43). Finally, ending abuse is possible only when women have gathered sufficient personal and social resources to effectively cope with it (41-42, 44-45).

**Points of departure**

I have chosen three concepts to interpret my research findings. The first is Heise’s (46) use of the ecological model to identify factors related to VAW at different levels of the woman’s environment. The second is Connell’s view of gender as a set of social relations (2). And the third is the theoretical perspective of power as a resource that can be reinforced, leading to the concept of empowerment (47).

A woman’s susceptibility to violence goes beyond her personal or her partner’s characteristics (46). In fact, a woman’s likelihood of experiencing violence is also determined by the characteristics of her immediate and distal environment. Heise (46)
has proposed a theoretical model that describes VAW as a phenomenon determined by an interaction between factors at the individual level and factors present at different levels of the woman’s environment (Fig.1).

![Ecological model for understanding IPV](source: Heise, 1998 (46) and Krug, 2002 (5))

The ecological model can also be used as a framework to study factors associated with the process of ending abuse. Ending abuse is a complex process, which is influenced by interplay between the woman’s individual characteristics, the strategies she uses to end the abuse, and factors present in her community and society.

Several individual factors influencing the length of this process of ending the abuse have been described, with the woman’s age (38), her number of dependants (48), and her economic independence described as key factors (45, 49-50). Attaining economic independence is especially important. For example, one cluster randomized trial in South Africa reported a 55% IPV reduction among women receiving a microfinance and gender training intervention (51). On the other hand, one qualitative study from Sweden found that pregnancy can harm a women’s effort to end abuse, because in this vulnerable condition she might be compelled to endure to the violence in order to protect the fetus (52).

Far from being passive, women utilize several strategies to end IPV (53). These strategies have been classified as placating strategies, resistance strategies, safety planning, help seeking (either from formal or informal networks), and legal action (54-55).

The process of ending abuse and the strategies women use can be strongly influenced by the level of societal support and the norms and values regarding gender roles and IPV in a given cultural setting (5, 12, 56-58). Women are more prone to be exposed to IPV in countries where male superiority, control over women, and violence as a way of solving conflicts are considered the norm (59). On the other hand, a high level of social support can facilitate IPV cessation (55). Women’s interaction with the healthcare sector might help them rethink their views on IPV (43) and could also be a source of information about community services that offer support (60). This is important because women’s increased access to support (43) has been found to facilitate the process of ending the abuse.

Connell’s (2) description of gender as a dynamic entity that is constantly changing is especially useful in understanding how changing community and societal conditions...
influence the process of ending abuse and the power relations between men and women. Connell argues that gender must be understood above all as “a matter of social relations” that are constantly under construction, and that people use these notions about social relations to interact with others in their lives (2). Connell defines patterns of gender relations in a particular culture as gender arrangements, whereas gender regimes are gender arrangements in for instance organizations or local settings. Broad patterns of gender arrangements at societal level are termed gender orders, which can endure over time (2). Gendered social relations can have four dimensions: power relations, production relations, emotional relations, and symbolic relations (2). Of these four concepts, power relations and symbolic relations are especially useful in studying IPV.

Power is a key gender dimension because it is used as a form of oppression. For example, different forms of violence can be seen as ways of asserting men’s power over women. In addition, it is important to consider the symbolic dimension of social relations since human actions are influenced by the way we interpret the world (2).

To fully understand the process of ending abuse, it is important to analyze it within the concept of empowerment. Aslop (47) defines empowerment as enhancing “an individual’s or group’s capacity to make choices and transform those choices into desired actions and outcomes”. Aslop (47) and Mosadale (61) make the point that agency is an important part of the empowerment process. Mosadale (61) has also described empowerment as comprising different stages. The initial stage points to the relevance of increasing a person’s self-worth (“power within”). This is a key step to reaching the next stage, that is, to expand a person’s ability to take actions (“power to”). The final step means recognizing the relevance of facilitating cooperative action to accomplish collective goals (“power with”) (61). Figure 2 shows an example of this final step in the Nicaraguan context.

Individual empowerment can exist to varying degrees depending on a woman’s individual characteristics (61). Conditions in the woman’s environment can facilitate or hinder her empowerment process (61). For example, Aslop points out that— as empowerment implies the ability to make a choice— it is also important to assess whether the choice actually exists and whether the user can access it. If the user is able to access the choice, it is important to evaluate whether it was relevant to achieving the desired outcome (47).

**IPV in Nicaragua**

In Nicaragua, extensive research has been conducted on the magnitude and characteristics of IPV. Ellsberg found that almost one in two ever—married Nicaraguan women had been exposed to physical IPV at some time, and 21% had experienced three types of IPV (emotional, physical, and sexual) (62). Recent data from the 2007 national health and demography survey, which included questions on IPV exposure, found that the prevalences of emotional, physical and sexual IPV in the 12 months
prior to the survey were 21%, 8% and 4% respectively (63). Nicaraguan men also abuse their partners while they are pregnant; three out of ten pregnant women interviewed reported emotional abuse, whilst 13% reported physical IPV during their current pregnancy (12).

Two population-based studies have identified several factors associated with IPV in this setting. Women living in poverty, those with a history of IPV in the partner’s family, those with more than four children, and those living in an urban setting had higher odds of physical IPV than those not exposed (64). Low social resources during pregnancy and emotional distress have also been associated with IPV exposure (12). Nicaraguan women respond to IPV in several ways: they defend themselves physically or verbally, they temporally leave the house they share with the abusive partner, and they seek help outside the home (40). Researchers have also found that 70% of the women experiencing IPV will eventually leave their abusive partner, with 25% leaving within four years. Temporary separations and help seeking increased women’s likelihood of ending the abusive relationship (40).

Nicaraguan children’s health is often impaired by their mother’s exposure to IPV. Physical IPV during pregnancy has been associated with low birthweight babies (28). An increase in maternal cortisol levels due to IPV has been described as a pathway between low birthweight and IPV (65). In addition, children whose mothers have been exposed to physical or sexual IPV have a higher risk of dying before five years of age compared to those not exposed (33).
Historical background

Through the decade of the Nicaraguan revolution (1979-1989), women gained greater access and participation in government institutions and the public sphere. Women’s increased social participation and empowerment led to better social policies that addressed their rights and fulfilled some of their needs (66).

During this time, the Family and Nurture Law was reformed to bring greater equality for women. Women increased their participation in the labor force as a result of measures such as a more developed daycare system and a noonday meal for children. Although some actions against IPV were implemented during this period, they were not transformed into public policy (66-68).

The revolutionary government was defeated in the 1990 presidential elections. The new neoliberal government significantly eroded women’s rights, diminishing or eliminating women’s social services and employment (66-68). However, several women’s organizations started to carry out actions focusing on primary and secondary IPV prevention. During this time, several milestones for the prevention of gender violence were achieved (Fig. 3).

Primary IPV prevention has focused on changing gender norms and improving the justice system response to violence. In 1992, the Network of Women against Violence was created. This organization’s active lobbying and political activism pressed the government to increase the penalties for sexual offenders and to pass a new law (Law 230) that aimed to protect victims of violence in the family (68). Law 230 constituted a critical step forward towards eliminating IPV in Nicaragua, because it incorporates into the legal code, ten protective measures that judges can use to shield women

![Figure 3. Milestones in prevention of gender based violence in Nicaragua](image-url)
against violence. In addition, it recognized damages to women’s mental health as acts punishable by law. During the same period, activities focusing on secondary prevention of IPV were conducted in parallel. The women’s movement started alternative centers offering reproductive health services and legal and psychological counseling for women experiencing IPV (68).

A specialized entity to handle family violence and child abuse cases, the Women and Children Police Station, was set up in 1994 (68). However, its effectiveness seemed to be limited by insufficient resources and its impact on IPV cessation uncertain (69). More recently, women’s organizations and NGOs have carried out primary prevention interventions through media campaigns aiming to deconstruct traditional cultural norms that define gender roles, IPV, and behaviors towards people living with the human immunodeficiency virus (HIV) (70).

Although several milestones in VAW prevention were achieved during the period between 1990 and 2000, patriarchy continues to be a prominent feature of Nicaraguan society. Lancaster (67) and Welsh (71) point out that the hegemonic masculinity paradigm in this setting is “machismo”, and within it men are expected to exert power to dominate and control others, especially women. In spite of the growing amount of scientific evidence indicating that VAW is a serious public health issue in Nicaragua, the public health system’s response to IPV is more reactive than preventive, that is, it focuses on healing women’s injuries resulting from the violence rather than implement programs to prevent it. Health personel lack appropriate training to provide adequate services to women experiencing IPV and no abuse-inquiring protocols have been implemented at public health care facilities.
**Rationale**

Men who are violent towards their partners often impede women’s efforts to control their own fertility (25-26). Furthermore, maternal exposure to IPV has been associated with restricted child growth (32, 72). However, there are few population-based longitudinal studies assessing the relationship between IPV, child growth, and women’s contraceptive use. Although IPV exposure is especially high in low-income countries (11), the process of ending IPV and the factors associated with it have been studied mainly in high-income countries, where abused women have more access to resources and support from the state (34-35, 38, 44, 55).

In spite of efforts by the civil society, women’s movements, and the government, Nicaraguan women still experience high rates of IPV (63). Since exposure to IPV is a major determinant of ill health (17, 30), unintended pregnancies (18), and child growth (72), it is paramount to identify how women experience ending abuse, what factors help them end it, what the association is between IPV and contraceptive use, and how maternal exposure is related to child growth. These data will be especially relevant for stakeholders working in poor-resource settings—such as Nicaragua—to design and implement evidence-based interventions.
Aims

The aims of this thesis were twofold: (i) to study the process and factors related to the ending of abuse of Nicaraguan women and (ii) to examine to what extent IPV exposure is associated with child growth and women’s contraceptive use after pregnancy. The specific aims, paper designs and analysis, participants, and main outcomes are described on Table 1:

Table 1. Summary of papers included in the thesis

<table>
<thead>
<tr>
<th>Paper/Aim</th>
<th>Design/analysis</th>
<th>Participants</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. To analyze individual, family, community, and societal determinants for ending abuse</td>
<td>Community–based panel study Logistic regression</td>
<td>398 women</td>
<td>IPV patterns and factors associated with ending IPV</td>
</tr>
<tr>
<td>II. To explore the process and successful strategies involved in ending IPV after pregnancy and how they are influenced by other factors in the woman’s environment</td>
<td>Qualitative Grounded theory</td>
<td>13 in-depth interviews with women exposed to physical/sexual IPV during pregnancy but not at follow-up</td>
<td>Process, strategies, and factors associated with ending IPV</td>
</tr>
<tr>
<td>III. To analyze whether there is an association between exposure to IPV during pregnancy and linear growth of the child</td>
<td>Community–based cohort study ANCOVA</td>
<td>375 children born to women participating in Paper I</td>
<td>Height-for-age Z-scores</td>
</tr>
<tr>
<td>IV. To examine whether exposure to IPV is associated with reversible contraceptive use in ever-pregnant partnered Nicaraguan women</td>
<td>Community–based panel study Logistic regression</td>
<td>398 women</td>
<td>Reversible contraceptive use</td>
</tr>
</tbody>
</table>
Material and methods

Setting

Nicaragua is a low-income country in Central America. In 2005, it had a population of 5,142,098 (51% female). Half of all Nicaraguans live in rural areas. Life expectancy at birth is 69.4 years (65.5 years for men, 73 years for women) (73). In 2001, the Nicaraguan National Institute of Statistics estimated that 45% of the population was living under the poverty line and 15% in extreme poverty.

In 2007, the Global Fertility Rate was 2.7 children per woman, and seven out of ten partnered women were using some form of contraception. Female sterilization, injectables, and oral contraceptives were the most commonly used methods. Young women use more reversible contraceptives, whereas the percentage of women sterilized increased with age. Sixty eight percent of the women using contraceptive methods obtained them from public health facilities (63).

Recent country data showed that 21% of children under five years of age were stunted and 5% underweight. However, considerable variation was found within the country. For example, figures from León municipality were better than national figures, with 14% and 4% of children classified as stunted and underweight respectively (63).

![Figure 4. Urban and rural areas covered by the DHSS in León municipality (Source: CIDS UNAN León)](image)

The study was conducted within a health and demographic surveillance system (HDSS) in León municipality (Fig.4). The municipality has an estimated population of 174,051 people, with 80% living in urban areas in 2005 (73). Data collection is performed every year, allowing follow-up of study participants (74).
**General design and participant selection**

Data were collected using a combination of qualitative and quantitative methodologies. Figure 5 describes the general design. The starting point of this panel study is a cross-sectional study assessing IPV magnitude and characteristics during pregnancy (12) (not included in this thesis). Papers I and IV consist of a panel study with a median follow-up time of 43 months (interquartile range, 40-45 months).

![Figure 5. General design](image)

Participating women were selected from the León DHSS (74). Figure 6 outlines the selection procedure of the women included in the thesis; a detailed description has been given elsewhere (12). At baseline (2002-2003), women were interviewed twice about IPV exposure, before and during pregnancy, and inquired about factors related to IPV (sociodemographic information, social resources and mental health) (12). At follow-up (2007) women were asked about IPV exposure over the previous twelve months, current contraceptive use, and factors related to IPV (Fig.5) (Papers I and IV).
Figure 6. Overview of the selection procedure of women included in this thesis

Thirteen informants who reported in the panel study that they had experienced physical or sexual IPV during pregnancy but not at follow-up were included in the qualitative study (Paper II). Ten participants lived in an urban area and the remainder in a rural setting.

The women interviewed at baseline gave birth to 461 children. Eight children died from various diseases before reaching the first year of age and 78 migrated from the study site. Consequently, 375 children were included in the anthropometric assessment at follow-up.

Quantitative measurements
IPV type and magnitude
A woman’s exposure to IPV was determined using the WHO Multi-Country Study on Women’s Health and Domestic Violence questionnaire (75). The instrument uses a series of detailed behavioral questions measuring four types of IPV: emotional, physical, sexual, and controlling behavior by a partner (Table 2). Exposure to any act described in Table 2 was considered IPV. The questionnaire used in this thesis also included questions measuring IPV exposure during pregnancy, added by Valladares et al (12).

A new variable labeled IPV patterns was constructed using emotional, physical, and sexual IPV exposures. Four IPV patterns were found: never abused (not abused at baseline and not abused at follow-up), ending abuse (abused at baseline but not at follow-up), continued abuse (abused at baseline and at follow-up), and new abuse (abused only at follow-up).

Controlling behavior by partner was dichotomized into no controlling behaviors or between one and seven controlling behaviors. In Paper I, we combined baseline and follow-up controlling behavior variables into one. The new variable had two options: the first represented women who had experience controlling behavior by a partner at...
baseline and at follow-up or women who had not experienced controlling behavior at baseline but had so at follow-up. The second option represented women who had not experienced controlling behavior at any time or those who had experience controlling behavior at baseline but not at follow-up.

The IPV measures used in this thesis showed good reliability with high Cronbach alpha values for emotional IPV (0.83), physical IPV (0.89), sexual IPV (0.82), and controlling behavior by partner (0.81).

Table 2. IPV types. Different partner actions considered IPV

<table>
<thead>
<tr>
<th>Emotional</th>
<th>Physical</th>
<th>Sexual</th>
<th>Controlling behavior by partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yelling</td>
<td>Slaps</td>
<td>Use of force/ threat or intimidation to have sexual relations with the woman</td>
<td>Restricting contact with friends</td>
</tr>
<tr>
<td>Humiliation</td>
<td>Pushes</td>
<td></td>
<td>Restricting contact with family</td>
</tr>
<tr>
<td>Intimidation</td>
<td>Punches</td>
<td></td>
<td>Insisting on knowing her whereabouts at all times</td>
</tr>
<tr>
<td>Threats</td>
<td>Kicks</td>
<td></td>
<td>Ignoring/treating her indifferently</td>
</tr>
<tr>
<td></td>
<td>Strangulation</td>
<td></td>
<td>Getting angry if she speaks to another man</td>
</tr>
<tr>
<td></td>
<td>Use of weapons</td>
<td></td>
<td>Constantly suspicious that she is unfaithful</td>
</tr>
</tbody>
</table>

Attitudes towards IPV

Women’s attitudes towards IPV were explored by asking them whether or not they agreed with six statements describing situations where a man could consider it valid to be violent to his female partner (Table 3). The following statement was used to explore women’s attitudes to seeking help from outside the family: “If the husband mistreats the wife, other people from outside the family should intervene”. Women’s views on being asked about IPV during pregnancy were explored with the question: “Did it make a difference when we asked you about violence when we spoke to you three years ago?”

Table 3. Questions exploring women’s attitudes towards IPV

A man has good reason to hit his wife:

*If she does not complete her household work to her partner’s satisfaction*
*If she disobeys him*
*If she refuses to have sex with him*
*If she asks him about other women*
*If he suspects her of being unfaithful*
*If he discovers that she is unfaithful*
Social resources
Social resources is a concept developed by Hanson et al (76) that measures different aspects of a woman’s social network, the level of support she receives from her environment, and the level of control she perceives she has of her daily life. In this thesis, a modified version of Hanson’s index was used to measure social resources during pregnancy. The index was modified for pregnancy by Dejin-Karlsson et al (77) and subsequently Valladares et al (12). In Paper I, baseline and follow-up measurements of social resources were combined into a single variable with two options. The first option represented women who had high social resources at both time points or women with low social resources at baseline and high resources at follow-up. The second option described women with low social resources at both time points or women with high social resources at baseline but low resources at follow-up.

Emotional distress
An instrument developed by the WHO—the Self-Report Questionnaire (SRQ)—was used to measure emotional distress (78). It has been specifically designed to detect mental health problems in developing countries, and contains 20 questions describing depressive and neurotic symptoms. Positive answers to each item in the questionnaire were summed and an index created. An index score ≥7 was considered as emotional distress, as suggested by a previous study in the Nicaraguan setting (78).

Socioeconomic status
The Unsatisfied Basic Needs Assessment index was used to measure the socioeconomic status of a woman’s household (79). Information was drawn from León DHSS (74). The index measures the structural conditions of the house, the number of children in school, the number of persons working, and the availability of piped water or a flush toilet. A household with two or more unsatisfied needs was considered poor (74).

Children’s anthropometric assessment
Child linear growth was measured using the height-for-age z-scores index (80). To construct the index, two standing height measurements were recorded using a vertical metric rule and a headboard. The mean of both measurements was then computed. Finally, the child’s sex, mean height, birth date and the date of data collection were entered into the ANTHRO 2005 program (WHO, 2006) to compute the height-for-age z-score.

Contraceptive use
Partnered, non-pregnant women’s current use of reversible or irreversible contraception was explored using the following question: “Are you currently using any method of family planning?” Female sterilization was considered an irreversible contraceptive method. Oral contraceptives, injectable contraceptives, intrauterine devices, condoms, the calendar-rhythm method, and withdrawal were labeled reversible contraceptive methods. Furthermore, the women’s perceptions of her partner’s attitudes to contraceptive use were also inquired.
Qualitative interview guide

Face-to-face interviews with open-ended, probing and follow-up questions were used to explore how women experienced ending physical or sexual IPV after pregnancy. During the interview, several topics were explored. These topics included the woman’s general perception of her relationship with the abusive partner, her perceived self-esteem, access to social support, perceptions of community norms regarding IPV and the woman’s opinions about previous IPV inquiring during pregnancy. The main questions used in the qualitative interviews are given on Appendix 1 and the full interview guide is described in Paper II, Table 1.

Analysis

Bivariate quantitative analysis

Data presented in Papers I, III, and IV were analyzed using the Statistical Package for Social Sciences (Version 15; SPSS Inc., Chicago, IL). In papers I and IV, the chi2 test was used to compare proportions between independent groups. In Paper I, McNemar’s test was used to compare women’s attitudes towards help-seeking behavior and gender roles at baseline and follow-up.

The women’s age was not normally distributed (Kolmogorov-Smirnov test p value >0.05). In Paper I, it was stratified by quartile distribution and compared between different IPV patterns with the chi2 test. In Papers III and IV, women’s age was used as continuous variable; in both these papers, median value and interquartile range (IQR) were used to describe women’s age.

In Paper III, Spearman correlation was used to assess whether women’s age was associated with the child height-for-age z-scores. Spearman correlation was also used to assess the relationship between birthweight, child age, mother’s age at pregnancy, and height-for-age z-scores. Student’s t-test was used to compare differences in the mean height-for-age z-scores for the main exposures and confounding factors. In Papers III and IV, the Mann-Whitney U test was used to compare women’s age median values between IPV patterns.

Multivariate quantitative analysis

In Papers I and IV, we used logistic regression to obtain crude and adjusted OR with 95% CIs. In Paper I, only women who had experienced IPV before or during pregnancy (229) were included in the multivariate analysis. Women who are exposed to controlling behavior by their partner are often isolated from their sources of support; thus controlling behavior by a partner is a form of IPV that can have a strong effect on the cessation of other forms of IPV. In paper I, it was therefore included in the multivariate model as a factor associated with ending emotional, physical, or sexual IPV. Other variables included were women’s age and variables that were significantly associated at the bivariate level with ending abuse (p<0.05).
In Paper IV, logistic regression was used to adjust the association between IPV exposures and reversible contraceptive use. Women’s residency, educational level, parity, socioeconomic status, and age were considered as possible confounders and all included in the final models. Controlling behavior by a partner was considered an intermediate factor and thus not included in the models. All multivariate analyses were stratified by women’s social resources at follow-up (high, low).

Paper III used analysis of covariance (ANCOVA) to assess the association between different types of IPV and the index child height-for-age z-scores adjusted for confounding factors. The variance was homogeneous in all groups (Levene’s test p value > 0.05). A Cook’s distance value of 1 or more was used as a criterion to exclude outliers. No observations were excluded. Mother’s educational level, age, residency, parity, socioeconomic status, child age, birthweight, emotional distress, and social resources during pregnancy were considered potential confounders. A variable was included in the multivariate model if it had a p value <0.20 in its association with IPV exposure and height-for-age z-scores and if there was a difference of 5% or more between the crude and adjusted estimates. In Paper III, multivariate analyses were stratified by women’s social resources at pregnancy and child gender. In all papers, all analyses were considered significant if p< 0.05.

**Exclusions**

Of the 478 pregnant women assessed for IPV during pregnancy (2002-2003), 398 (83%) were available for questioning at follow-up. The main reason for dropping out was out-migration from the study site. No significant differences were found between the baseline characteristics of women lost and found at follow–up (Table 4).

<table>
<thead>
<tr>
<th>Table 4. Comparison between baseline characteristics of women lost to follow-up and those found at follow-up, n=478</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women’s characteristics</strong></td>
</tr>
<tr>
<td>Age at pregnancy. Median (IQR) †‡</td>
</tr>
<tr>
<td>Residency. Rural §</td>
</tr>
<tr>
<td>Education. ≤ 3rd grade §</td>
</tr>
<tr>
<td>Parity. ≥ 2 §</td>
</tr>
<tr>
<td>Poverty. Poor §</td>
</tr>
<tr>
<td>Soc. resources pregnancy. Low §</td>
</tr>
<tr>
<td>Emotional IPV pregnancy. Yes§</td>
</tr>
<tr>
<td>Physical IPV pregnancy. Yes §</td>
</tr>
<tr>
<td>Sexual IPV pregnancy. Yes§</td>
</tr>
<tr>
<td>Controlling behavior by partner pregnancy. Yes §</td>
</tr>
</tbody>
</table>

*p<0.05. † IQR (interquartile range). ‡ Mann-Whitney U Test. § Chi2 test.*
Qualitative analysis
The grounded theory method (81) was used to analyze the data. The analysis was conducted in parallel with data collection and the OpenCode 3.4 software (UMDAC & Epidemiology Department of Public Health and Clinical Medicine, Umeå University, 2001) was used for the initial analysis. The analysis started by going through the text of the interviews looking for actions, emotions, conditions, and outcomes that described the women’s experiences (“open coding”). These codes were then compared, and those describing aspects of a more abstract concept were grouped together to create subcategories and categories (“selective coding”). After this process was completed, one category was selected as the most important (“core category”). Finally, all categories were linked in a conceptual model depicting the end of the abuse process and the factors facilitating it (82). The open codes, subcategories and categories are shown in Appendices 2A and 2B. Table 5 describes an example of the journey from text to categories.

Table 5. Example of the qualitative analysis, from codes to categories

<table>
<thead>
<tr>
<th>Text</th>
<th>Codes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>“When I was pregnant he used to mistreat me, he used to hit me...on</td>
<td>Terrible disappointment</td>
<td>“I came to a</td>
</tr>
<tr>
<td>the back, in the belly. Once he hit me so hard I had to go to the</td>
<td>Severe IPV</td>
<td>turning point”</td>
</tr>
<tr>
<td>hospital and I had an abortion... That’s why I decided to leave...”</td>
<td>Awakening</td>
<td></td>
</tr>
</tbody>
</table>

Ethical considerations
The study was approved by the ethical committee of UNAN-León, Faculty of Medicine, Nicaragua. Data were collected following WHO guidelines and safety considerations (83). Participation was voluntarily. The quantitative data were collected by two female pollsters who received extensive training on how to interview women in privacy, with sensitivity, empathy, and without expressing judgment.

Prior to data collection, the study objectives were explained to all participants and written informed consent obtained. The pollsters informed the women that they could refuse to answer any questions if they wished. To ensure confidentiality, names were removed from the database. A weekly debriefing was conducted with the pollsters to relieve stress.

During qualitative data collection at follow-up, the interviewer (Mariano Salazar) was accompanied by a female field assistant to enhance rapport and disclosure. To ensure confidentiality, the thirteen interviews were conducted in privacy in the informants’ houses. Children older than two years were not allowed to be present at the interview. The interview was halted and the topic changed if the woman’s partner or other person entered the room.

In the description of the qualitative data, to ensure anonymity women are identified using aliases. All informants received a leaflet providing contact information on places in the community where they could receive healthcare and psychological and legal counseling without charge.
Results

Characteristics of the women

The women’s characteristics are described in Table 4. The median age of the women was 27 years (interquartile range=23 to 31 years). One third (126/398) lived in a rural setting. Overall, four out of ten women (180/398) had three years or less of education and six out of ten (230/398) were classified as poor according to the Unsatisfied Basic Needs Assessment method. Six out of ten women contacted at follow-up (246/398) had more than one child (Table 4).

Thirty-one percent (122/398) were classified as experiencing emotional distress, defined as an SRQ score ≥ 7. Furthermore, 51% (205/398) reported low social resources.

The majority of the women had a partner at the time of the follow-up interview and few were pregnant (Fig.7). Nine out of ten women (290/317) not pregnant and with a partner reported that they had had the same partner for the last three to four years. Women who were pregnant at the follow-up interview reported a similar figure (26/31). The participants’ patterns of contraceptive use are shown in Figure 7.

<table>
<thead>
<tr>
<th>398 women found at follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not pregnant without a partner*</td>
</tr>
<tr>
<td>n=50 (12%)</td>
</tr>
<tr>
<td>Not using contraception</td>
</tr>
<tr>
<td>n=63 (20%)</td>
</tr>
</tbody>
</table>

* No current partner at the time of follow-up data collection

Figure 7. Patterns of contraceptive use among women found at follow-up, n=398

Injectable contraceptives and oral contraceptives were the most common reversible contraceptive methods used (Paper IV). Injectable contraceptives were used more by women living in rural areas (p=0.00), who also used intrauterine devices less than urban women (p=0.00) (Paper IV, Table 3).
Characteristics of the children

Women interviewed about their IPV exposures during pregnancy gave birth to 461 children; 81% (375/461) were found at follow-up. As stated above, mother’s out-migration from the study site was the main cause of follow-up losses (Paper III). Half of the children found were girls (197/375). Children’s age (months), birthweight (g) and height-for-age z-scores are presented in Table 6. The height-for-age z-score index was normally distributed (Fig. 8).

Table 6. Children’s characteristics, n=375

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height-for-age z-score</td>
<td>-1.00 (0.98)*</td>
</tr>
<tr>
<td>Age (months)</td>
<td>43 (40 to 45)†</td>
</tr>
<tr>
<td>Birthweight (g)</td>
<td>3100 (2880 to 3400)†</td>
</tr>
</tbody>
</table>

*Mean (SD). † Median (interquartile range)

Figure 8. Frequency distribution of height-for-age z-scores, n=375

Women’s exposure to IPV

Exposure to different forms of IPV was common at both baseline and follow-up. At either time point, controlling behavior by a current partner was the most common form of violence reported, followed by emotional abuse, physical abuse, and sexual abuse (Table 7). The percentage of women reporting emotional, physical, or sexual IPV during pregnancy did not differ from exposures at follow-up (Table 7).
Table 7. Percentage of women exposed to different forms IPV at baseline and at follow-up, n=398

<table>
<thead>
<tr>
<th>IPV</th>
<th>At baseline Ever</th>
<th>At baseline During pregnancy</th>
<th>At follow-up Last twelve months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Emotional</td>
<td>212</td>
<td>(53)</td>
<td>128</td>
</tr>
<tr>
<td>Physical</td>
<td>123</td>
<td>(31)</td>
<td>52</td>
</tr>
<tr>
<td>Sexual</td>
<td>59</td>
<td>(15)</td>
<td>27</td>
</tr>
<tr>
<td>Controlling behavior by partner</td>
<td>---</td>
<td>---</td>
<td>218</td>
</tr>
</tbody>
</table>

*Controlling behavior by current partner

Four IPV patterns were identified. Women never abused represented 35% (141/398) of the total sample, whereas 24% (94/398) reported a continuous pattern of abuse. Thirty-four percent (135/398) had experienced IPV at baseline but not at follow-up, and were thus were labeled as ending abuse, and 7% (28/398) reported being abused only at follow-up (Fig. 9).

In conclusion, six out of ten women who reported any emotional, physical or sexual IPV before or during pregnancy reported no abuse at follow-up (135/229) (Fig. 9).
**RESULTS**

**Pregnancy prevention and IPV**

Bivariate analysis showed that the type of reversible contraceptive method used by partnered non-sterilized women (164) at follow-up differed according to their IPV patterns. Thirty-four percent of the women classified as “never abused” used oral contraception. By comparison, only 26% of the women “ending abuse” and 25% of the women with a “continued abuse” pattern reported using this method. However, the last groups reported a higher use of injectable contraceptive than those not abused (p<0.05) (Paper IV, Table 4).

Adjusted analysis showed that the odds of using reversible contraception three to four years after pregnancy were higher among partnered non-sterilized women who were exposed to a continued pattern of abuse, or among women who were exposed to different forms of IPV at follow-up (any, emotional, physical) (p<0.05) (Table 8).

After the analysis was stratified by women’s social resources at follow-up, it was found that women exposed to any IPV at follow-up and women exposed to emotional IPV at follow-up had higher odds of reversible contraceptive use if they had high social resources at follow-up (p<0.05). However, high social resources had the opposite effect on women exposed to physical IPV at follow-up (p<0.05) (Paper IV, Table 5).

| Table 8. Association between selected IPV exposures and reversible contraceptive use among partnered non-sterilized women. Adjusted OR (95% CI) and percentage exposed to IPV, n=227 |
|-----------------------------------------------|-------------------|-------------------|
| **Exposure to IPV**                          | **Percentage exposed** | **AOR (95%CI)**   |
| Continued abuse*                             | 27                | 2.50 (1.04 to 5.99) |
| Any IPV at follow-up*                        | 32                | 2.59 (1.24 to 5.40) |
| Emotional IPV at follow-up*                  | 31                | 2.80 (1.32 to 5.95) |
| Physical IPV at follow-up*                   | 15                | 3.60 (1.15 to 11.10) |

*Adjusted by women’s age, residency, education, parity, and socioeconomic status. †Emotional, physical or sexual IPV

**IPV during pregnancy and children’s growth**

This study showed that the index child linear growth— at a median follow-up time of 43 months— was impaired after exposure to any form of IPV during pregnancy (emotional, physical, sexual, or controlling behavior by partner). This association remained significant after adjusting for residency, mother’s education, and child’s age (Paper III, Table 4). A separate analysis of each IPV exposure showed that only exposure to controlling behavior by partner was associated with lower height-for-age z-scores (p<0.05) (Paper III, Table 4). Moreover, after stratification of the analysis by the gender of the child, it was found that these association were significant only for girls and not boys (p<0.05) (Paper III, Table 4). Further stratification by maternal social resources showed that these associations remained significant only for girls with low maternal social resources (p<0.05) (Paper III, Table 5). The differences between exposed and non-exposed adjusted mean height-for-age z-scores are shown in Figure 10.
RESULTS

Who are the women ending IPV?

Having a new partner or no partner at all was more common among women ending abuse (p=0.03). Women living in a rural area reported ending abuse more often than those living in an urban setting (p=0.02) (Paper I, Table 1). Furthermore, ending abuse was associated with less perceived emotional distress (SRQ ≥7, p=0.00). Controlling behavior by a partner at baseline (p=0.00) or at follow-up (p=0.00) was higher among women with a continued abuse pattern than among those ending abuse (Paper I, Table 1).

Women ending abuse had higher social resources at baseline (p=0.00) and at follow-up (p=0.01). The panel study showed that women’s age, employment status, educational level, parity, and socioeconomic status were not significantly associated with ending abuse (p>0.05) (Paper I, Table 1). Ending abuse was associated with decreasing or not experiencing controlling behavior by a partner (p=0.00). In addition, ending abuse was associated with high or increasing social resources (p=0.01) (Paper I, Table 1).

How do women experience ending IPV after pregnancy?

Women exposed to physical or sexual IPV during pregnancy experienced ending abuse not as a “one-off” event but rather as an empowering process. This process of change was described as a journey with three different phases: “I came to a turning point”, “I changed” and “The relationship ended or changed” (Fig.11).
The different phases describe women’s cognitive, emotional, and behavioral transitions. Further, three factors—a “less tolerant to intimate partner violence and supportive environment”, “abuse inquiring” and “police and health system involvement”—emerged as facilitating the process of ending abuse. In addition, from the data we constructed a conceptual model that explains how the women’s actions were influenced by an interplay between their individual characteristics and factors present in their families and communities (Paper II, Figure 1). In the following, we will describe women’s cognitive, emotional, and behavioral transitions as well as the factors influencing them.

### Phases and related emotions

**I came to a turning Point**
(Awakening, disappointment, anger)

**I changed**
(Difficult change, assertive, distrust institutions)

**The relationship ended or changed**
(Peacefulness, ease, happiness)

### Strategies

**FROM**
- Acting submissive
- Avoiding/Changing behavior
- Hiding violence

**TO**
- Reflecting on situation
- Defending herself
- Exposing IPV by involving friends and family
- Temporary separation
- Searching for economic independence

---

**Figure 11. Phases of the process of ending of abuse, related emotions, and strategies used to cope with the violence**

### The cognitive transition

A severe episode of physical violence was usually referred as the turning point that triggered a woman’s cognitive transition. This “awakening” represented a cognitive shift towards recognizing and labeling her partner’s actions as violence. In addition, women reached a stage where they thought they could no longer avoid or anticipate the abuse (Paper II):

“One day I talked with my mother...I told her...I can’t carry on like this (experiencing violence)...next time he’s going to send me to my grave and...what is my mother going to do with my children?” (Julia, 29, urban)

As a consequence, women became less tolerant of the IPV. Our quantitative data also show that changes in women’s baseline attitudes to violence were not limited to those women ending IPV, but were common to all women participating in the panel study, regardless of their patterns of abuse (Paper I, Table 2). Changes in women’s baseline attitudes to IPV are shown in Figure 12.
In addition, a key quantitative finding is that women seem to be more open to interventions from outside the family environment to end the abuse. In paper I, we found that the percentage of women who agreed with the statement “If the husband mistreats his wife, other people from outside the family should intervene” increased from 55% at baseline to 67% at follow-up (Paper I, Table 2).

The emotional transition

Women’s cognitive changes were echoed by an emotional transition. Women started to shift from feelings of frustration, resignation, self-blame, and impotence to disappointment, anger, revenge, and increased self-power. Ending abuse generated a feeling of hope for the future which was described as a “new life” (Paper II).

The behavioral transition

As women moved along the process of ending abuse, they gradually incorporated new strategies to deal with their partner’s violence (Fig.11). They slowly shifted from submissive strategies, to resistance strategies, to help seeking when the resistance strategies prompted a more violent response from their abusive partners. Eventually, their increased access to material support made it possible for them to implement the “temporary separation strategy” – that is, moving into a more favorable setting, usually a relative’s house (Paper II).
“Once I was cooking, making soup...he came in from the street and wanted to start a fight with me...he threatened to scald me with hot soup...and I told him “I don’t have to put up with you anymore! I am going home to my mother’s! I felt so supported there – I had my brothers, my sisters, and my mother. Finally, he came to live with us...and he didn’t fight with me at my mother’s” (Carol, 26 years, rural).

In addition, some women felt that gaining financial security by having an independent source of income allowed them to be more autonomous and less controlled by their partners (Paper II)

“I felt like I was working in heaven. I felt a sudden change in my life...like from one moment to the next...I was no longer in the house, I felt like I was important, I felt completely fulfilled ...I felt I had achieved something in my life, that I could support my children on my own.” (Mayra, 27 years, urban)

**What are the individual and relationship factors associated with ending IPV?**

The pace of the process of ending abuse was somewhat slower among women who were ashamed of the violence and women isolated from their sources of support (Paper II). Less controlling behavior by a partner was associated with higher odds of ending other forms of IPV (emotional, physical, or sexual) even after adjustment for woman’s age, residency and marital status at follow-up (Paper I, Table 3). Women who reported depressive and anxiety symptoms found it more difficult to respond assertively to the abuse (Paper II).

Ending physical or sexual IPV after pregnancy had different meanings for different women. Some women experienced ending the violence as ending the abusive relationship, whereas other informants remained with their partner after he ceased to be violent. These different outcomes seemed to be influenced by the severity of the abuse. Women ending the relationship experienced a more severe and continued IPV pattern, with physical or sexual violence reaching extreme levels. In contrast, women whose experience with IPV was intermittent and less severe remained more often within the relationship. In addition, they also reported that their partners had changed their abusive behavior (Paper II).

**What are the environmental factors associated with ending IPV?**

Three environmental factors facilitating the process of ending abuse emerged from the qualitative interviews. These factors acted at different phases of the process. The first operated mainly during the early stages of the process. Being asked about IPV while they were pregnant helped most of the women to reflect on the violence they were experiencing and thus contributed to the cognitive shift in their attitude towards IPV (Paper II). Data from the panel study also showed that almost one fifth (41/229) of the women exposed to emotional, physical, or sexual IPV before or during
pregnancy reported that being asked about IPV during pregnancy helped on their process to be free of IPV (Paper I).

The second factor, a less tolerant to IPV environment, was relevant throughout the whole process, challenging the abused women’s passiveness and use of placating strategies as the right way to cope with a violent partner (Paper II). One informant comments:

“Researcher: How did your family react when he mistreated you?”
“Informant: My grandmother used to scold me ...Once she told me ...child! You have to go to the police! You have to press charges!” (Juana, 23 years, urban)

Further, access to social support was facilitated by an environment that was less tolerant to IPV. In turn, social support increased the possibilities to end the abuse in at least three ways: by improving women’s self-esteem, by providing favorable conditions to successfully implement the “temporary separation” strategy, and by exerting pressure on the violent partner to modify his drinking habits (Paper II). These findings were supported by our quantitative data. Women who had high social resources at both time points (baseline and follow-up) or women who had low social resources at baseline but high social resources at follow-up had a 2.0 (95% CI 1.1-3.7) times higher odds of ending IPV than those with low social resources at both time points (baseline and follow-up) or those with high social resources at baseline but not at follow-up (Paper I, Table 3).

Although social support played a major role in the process of ending the abuse, its effect on an individual process differed depending on its characteristics. Three properties of social support were identified: its availability, the way it was expressed, and whether or not it was accompanied by demands (Paper II). Figure 13, shows the properties of social support and the different boundaries where the properties can range (dimensions).

<table>
<thead>
<tr>
<th>Properties</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>Available → Unavailable</td>
</tr>
<tr>
<td>Expression</td>
<td>Explicit → Tacit</td>
</tr>
<tr>
<td>Conditional</td>
<td>Conditional → Unconditional</td>
</tr>
</tbody>
</table>

**Figure 13.** Properties and dimensions of social support

The third factor, police and health system involvement was rarely utilized and was relevant mainly at the end of the process. In general, women perceived the police and health services as ineffective in helping them end their IPV. Although these services were rarely used, two women reported positive interactions with them. These positive interactions allowed one woman to receive mental health care and another to avoid harassment from a former violent partner (Paper II).
Discussion

The consequences of intimate partner violence are frequently evident beyond the immediate experience of the violence. In this thesis, different forms of IPV were associated with reversible contraceptive use after pregnancy and impaired linear child growth. Nicaraguan women who ended IPV after pregnancy experienced it as a process that emerged from the interplay between factors at the society, community, relationship and individual level.

Strengths and limitations

The external validity of any given study can be compromised by the way participants are selected. In papers I, III and IV the risk of selection bias was decreased through a population-based design. Also, no significant differences were found between women lost to follow-up and women who remained under observation. However, since our baseline populations in Papers I and IV were women who were pregnant, the results of our studies can be generalized only to women ending IPV or women using reversible contraceptive methods after pregnancy. Another limitation of this thesis is that it do not directly explores what factors influence or change men’s individual and social circumstances and how these were associated with the process of ending abuse.

Measuring IPV exposures and child linear growth is challenging and requires a systematic approach to data collection. In order to minimize information bias, two highly trained female field workers collected IPV and anthropometric information, utilizing WHO protocols, and procedures (80, 83). Further, the main researcher (MS) and the female field workers who collected the IPV data at follow-up were blinded to the women’s baseline IPV exposures. Although changes in women’s social resources and controlling behavior by a partner probably occurred before the end of emotional, physical or sexual IPV, it is not possible to establish a temporal relationship and causality cannot be asserted (Paper I). This also applies to the relationship between reversible contraceptive use after pregnancy and IPV exposures at follow-up (Paper IV).

In the qualitative interviews, the sex of the main researcher (MS) could have posed a challenge to data collection. To enhance trust and promote a comfortable environment for the informants, a female field assistant was present during all interviews. One of the measures used to evaluate the quality of qualitative findings is their credibility—“the ability to really capture the multiple realities of those we studied” (82). Two strategies were used to increase the credibility of our results. First, the data were analyzed by a team of researchers with different theoretical backgrounds—a strategy called “triangulation” (82). Second, the preliminary findings were presented and discussed with other colleagues, a strategy known as “peer-debriefing” (82). The term “transferability” is used in qualitative research to establish if the results of a study can be applicable to other people in other contexts (82). We provide a detailed description of the Nicaraguan context to help the reader decide if our results are transferable to other settings.
Factors facilitating the process of ending abuse

The way a given community reacts to IPV can influence a woman’s individual exposure to it (84). The results of this study revealed that a key factor at the society and community level was the supportive and less tolerant to IPV environment in which women interacted. This positive environment contributed to improve women’s self-esteem and mental health. This was achieved by providing emotional support and by questioning traditional power relations between men and women, which have been based on the marianismo ideal (85) of how a woman should be in a Latin American culture, namely docile and compliant. Increasing women’s self-esteem has been cited as an important initial step in the process of ending IPV (41). Mosedale (61) has described this initial step as one that increases a person’s “power within”.

The informants described that it was mainly the other women with whom they interacted that questioned the marianismo paradigm. This finding is consistent with data from the 2006-07 Nicaraguan demographic and health survey, which reported that gendered attitudes towards justifying IPV in León municipality were low among women between the ages of 15 to 49 years (63). Our informants reported that some men also questioned the marianismo paradigm. Although Nicaragua remains a patriarchal society (67, 71), Sternberg et al (86) have identified that Nicaraguan men have different discourses on masculinity, with some men highly critical of the traditional patriarchal gender norms.

These results highlight the relevant role that societal norms have in facilitating the process of ending IPV. Connell has proposed that gender is a dynamic entity (2) constantly under construction. Previous studies conducted in this setting described that gender norms justifying IPV were common (62, 87). Our findings suggest that the community might be less tolerant to IPV than previously reported. This change might be a reflection of the efforts that women’s organizations have been conducting in Nicaragua to increase IPV awareness and prevention (68).

Social resources and support play an important role in the process of ending the abuse by providing the conditions for women to expand their strategies to end the abuse, effectively increasing their agency or as Mosedale (61) has described it women’s “power to”. This is in line with previous longitudinal studies conducted in developed countries that show that social support is an important factor in facilitating the process of ending abuse (55, 88). In Nicaragua, one community-based study found that women who had support from their families had 5.3 higher odds of reporting help-seeking behaviors than those without support (40). Support that was tied to conditions has been found to hinder the process of ending abuse (89). Our results point out to the fact that social support can be more effective in ending IPV if it is clearly expressed and unconditional.

At the relationship level, diminishing or no controlling behavior by a partner was identified as a key factor associated with the ending of other forms of IPV (emotional, physical or sexual). In line with a previous study conducted in this setting (40),
temporary separations and help seeking from informal networks emerged as the most important strategies to end abuse. Temporary separations seemed to modify the power relations between the couple by helping the woman to escape her partner’s controlling behavior. This in turn increased her autonomy and diminished her isolation.

Our quantitative data at follow-up showed no association between having a job and ending emotional, physical or sexual IPV after pregnancy (Paper I). However, the in-depth interviews revealed that for some women experiencing severe physical/sexual IPV during pregnancy, having an independent source of income was an important individual factor that facilitated the process of ending abuse. A violent partner often accompanies physical or sexual IPV with controlling behavior (11). This can limit a woman’s economic independence and isolates her from her sources of support. It is possible that for these women attaining economic independence was more important to end IPV than for women experiencing emotional or moderate physical IPV who might have less economic dependency. Qualitative and quantitative studies have found that attaining economic independence is an important factor facilitating the process of ending abuse (45, 49, 51, 53).

Our qualitative and quantitative data showed that women could end the IPV with or without ending the relationship with their abusive partner and that these outcomes are influenced by the severity of the violence. This is in line with results from a previous study conducted in Nicaragua that showed that women who reported “less severe abuse” were more able to cope with the violence and end the IPV without ending the relationship (40). However, because IPV can be cyclical or increase in severity over time, women who stay in these relationships must be made aware of resources available in their community to help them end the abusive relationship if the partner resumes his violent behavior.

**IPV exposure, child growth and reversible contraceptive use**

Children’s linear growth was impaired by their mothers’ exposure to their partner’s controlling behavior during pregnancy even after adjusting for possible confounding factors (Paper III). These findings are consistent with results from a cohort study conducted in Bangladesh that found a negative association between maternal exposure to controlling behavior by partner and children’s height-for-age z-scores (72).

In our study, this association was significant only among young girls. Krantz and García-Moreno (90) have identified that in some cultural settings, the gender of the child has been associated with neglected care and girls are more prone to receive inadequate care than boys. One study conducted in this setting found that this form of gender-based violence is also present in Nicaragua (91). The inadequate care that girls receive could translate into poor nutritional status. In the Nicaraguan setting, Sakisaka et al (92), found that girls had higher odds of being underweight than boys. The mother’s limited autonomy due to controlling behavior by their partners can potentially intersect with other forms of gender-based violence towards the girls to impair their linear growth. In addition, violent and controlling fathers might allocate
less household resources to young girls than young boys. However, this hypothesis needs to be further explored.

The level of support a woman receives from her environment has been associated with her children’s growth (93-94) and women who experience IPV during pregnancy often have low levels of social resources (12). This might explain why adjusted mean height-for-age z-scores were lower among girls whose mothers were exposed to both controlling behavior by a partner and low social resources during pregnancy.

Unintended pregnancies have been associated with exposure to different forms of IPV (20, 95). This is especially important since pregnancy can limit women’s options to cope with IPV (52) and motherhood has been associated with longer duration of IPV (96). Data from our panel study showed that current use of reversible contraception was associated with current IPV exposure and with exposure to a continued pattern of abuse. These findings are consistent with other population-based studies conducted in both low and high-income countries (22-23), which reported higher odds of contraceptive use among women exposed to IPV. These consistent findings might represent women’s efforts to avoid putting themselves in a more disadvantaged situation while in a violent partner relationship. However, this does not mean that abused women are successful in avoiding pregnancy, since men who are abusive towards their partners could also interfere with their contraceptive method (25-26). The role that social resources might have among abused women using reversible contraception should be further explored.

**Abuse inquiry and the process of ending IPV**

Our quantitative data pointed out that women participating in the panel study expressed fewer attitudes towards justifying IPV at the follow-up interview. The attitudinal transition might be related to grassroots (86) and mass media (70) campaigns conducted in this setting that have challenged traditional gender roles. In addition, qualitative interviews showed that being asked about IPV while women were pregnant during the baseline data collection helped women to change their ideas of IPV and contributed to a cognitive change towards labelling IPV as such. This is a very important finding since women exposed to IPV often internalize (42) or normalize (97) the IPV, and this cognitive shift has been found to be essential in the initial stages of the process of ending the abuse (42, 45, 53).

Our quantitative data also found that at follow-up, seven out of ten women agreed with the statement that if a woman is abused by her partner, people from outside the family should intervene. However, the qualitative data showed that formal networks (police and health services) were rarely used to cope with the violence. This scarce use of formal networks to end the violence could be explained women’s negative perceptions of these services. Alsop points out that even if services are available, user’s perceptions of how helpful they are to obtain the desired results could influence their decision of whether to use them (47). Baker (98), Sagot (99), and Hadeed (89) have also identified that the quality of the public services available for women to end the abuse is an important factor in their decision to use them.
Conclusions and recommendations

In spite of several efforts conducted by women’s organizations and the government, Nicaraguan women still experience high rates of IPV. This thesis found that ending IPV after pregnancy was a process that was facilitated by a supportive environment, one that was less tolerant to IPV and that exposure to abuse inquiry during pregnancy also helped. Enhancing women’s autonomy can facilitate the process of ending abuse and improve their children’s linear growth. IPV exposure was associated with current contraceptive use.

In order to end IPV interventions at the community and society levels ought to be implemented. Activities aimed at improving primary prevention of IPV must continue in this setting to further improve the community response to it. Women’s exposure to IPV is higher in settings where male superiority and control over women are an important part of the community norms (59). Thus, primary prevention activities need to include systematic mass media campaigns challenging traditional norms and values related to IPV. Further research is needed to explore and evaluate men’s attitudes towards IPV in the Nicaraguan setting. One particularly promising aspect of this exploration would be the identification of factors that influenced men who were previously abusive to end their abusive behaviour.

Secondary IPV prevention needs to be strengthened in order to capitalize on women’s attitudinal changes towards IPV. In Nicaragua, the public health sector provides 68% of all contraceptives (63). This means that performing secondary IPV prevention by implementing abuse inquiry at these settings has the potential to reach more women in need. However, in order to be effective, health personnel need to be trained and have sufficient resources to conduct abuse inquiries with care in order to avoid revictimizing women (100). Inquiring about IPV has been shown to be more effective in ending IPV and improving women’s health when accompanied by interventions aimed to increasing women’s independence and control over their lives (101). The police response to IPV also needs to be strengthened. In addition, it is very important that the government provides shelters for those women who lack adequate material support from their families.
Acknowledgements

I would like to thank all the women who participated in this study. This thesis was possible because they trusted us and shared their stories with our team of researchers.

This research was possible due to the financial support obtained from the Swedish Agency for Research Cooperation with Developing Countries (SAREC) through UNAN León University. I would like to show my deepest gratitude to the former and current CIDS UNAN León authorities in allowing me to use the León Health and Demographic Surveillance System to conduct this research. In special, my gratitude goes to Rodolfo Peña for introducing me to the field of epidemiological research and for all the hands on training provided. Also, to Eliette Valladares, co-author and supervisor who shared the baseline data used to conduct the panel and cohort studies included in my research project. I am also very thankful to Dr. Trinidad Caldera and Dr. Edmundo Torres. During the last years, they have provided key instrumental support that had made it possible for me to complete my PhD training.

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Appendix

Appendix 1. Qualitative semi-structured interview guide

We would like you to share your story with us. So could you tell us, how come you no longer experience violence by your partner?

Can you tell me what helped you stop the violence?

How did you feel when he mistreated you?

How do you feel now?

What influenced this change? (if any)

Can you describe how your family reacted to your partner’s violence towards you? And your friends? And your neighbors?

Can you tell me how you got help?

Did you tell the police or health staff about the violence you were experiencing? How so?

Did it make any difference in your life when people asked you about partner violence when you were pregnant 3-4 years ago?
## Appendix 2A. Codes, subcategories and categories

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<thead>
<tr>
<th>Codes</th>
<th>Subcategories</th>
<th>Categories</th>
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<tbody>
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<td>Boiling point</td>
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<td>Terrible disappointment</td>
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<tr>
<td>Anger</td>
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<tr>
<td>Reflecting on IPV</td>
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<tr>
<td>Fighting back</td>
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<td>Involving friends/family</td>
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<td>Difficult change</td>
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<td>Create strength/courage</td>
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<tr>
<td>No marianismo</td>
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<td>No docile</td>
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<td>Economic independence</td>
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<td>Job fulfillment/stability</td>
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<td>He changed</td>
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<td>Autonomy</td>
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<td>More communication</td>
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### Appendix 2B. Codes, subcategories and categories

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<td>No tolerating abuse</td>
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<td>No endure him</td>
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<tr>
<td>Wake-up</td>
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<td>Defend yourself</td>
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<td>Get help</td>
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<td>Break silence</td>
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<td>Listened to me</td>
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