# FAMILY WELL BEING, WOMEN ATTITUDES AND THE INTERGENERATIONAL TRANSMISSION OF VIOLENCE IN URBAN AREAS IN PERU

## I. INTRODUCTION

Peru is not an exception from urban population growth tendencies in the world. In the last decades, this country undergone an important urbanization process, initiated seventy years ago, with a massive migration flow from the provinces to Lima (Matos Mar 1988: 32). This process had a preponderant character: it meant the beginning of the concentration of large migrant contingencies in Lima, creating a new type of urban settlement, the so-called slum (Op cit: 34). Large invasions of urban settlement in the capital, as well as in other main cities in the country, gave place to an immeasurable growth of slums and neighborhood associations. With this new development a new pressing demand for housing, titling, and basic services arose. Thus, if in 1940, 35.4% of the total Peruvian population resided in urban areas, towards the eighties this percentage reached 65% (Matos Mar 1988: 40), and around twenty years later (2007), 75.9% of the national population (INEI 2008: 20).

Apart from the natural population growth, the main source of urban growth stems from internal migration flows. These influxes arise in many cases from the expectation of finding better economic possibilities and improved life conditions in cities that, supposedly, provide answers to this expectation. However, we can see from various studies that the urban growth such as this has been accompanied by a series of negative externalities manifested in a series of social and environmental issues arising in these cities. In the case of Peru, the urbanization of the main cities was accompanied by a chain of issues that have turned them into fertile spaces for developing various social problems. Lima for example, Peru's capital, is the principal space for urban growth in the country, whose process occurred within a particular economic and social context, and at a great speed, and brought about the seeds of various problems implied in the process. One example of the quite unfavorable economic contexts has to do with Lima's industrial apparatus, similarly as for other cities in Peru, which did not have the capacity to incorporate the new urban contingents arriving from provinces (Matos Mar 1988: 47). Circumstances such as this generated a significant crisis where a scenario of growing unemployment and underemployment brought Lima to be a city overloaded by activities that were precarious, informal or outside of the official circuit (Matos Mar 1988: 60).

Using a unique Peruvian data set, this paper analyzes two other negative externalities in urban spaces: physical violence against women and physical violence against children. The hypothesis of the paper is that low levels of well-being in urban environments increases the probability of intergenerational transmission of mothers' violence against their children.

## II. LITERATURE REVIEW

### a. Violence as a negative externality in terms of psychosocial health and its relation to urban poverty

Accelerated urban growth does not only lead to environmental or sanitation problems. The literature supports the existence of issues concerning the psychosocial health of the people. Among them are depression, alcohol and drug abuse, interpersonal violence—among young adults, spouses, or in relation to children—among others (Cohen 2009: 2; Brennan 1999: 11). Violence, in particular, has gained a notable presence as a phenomenon tied to the growth of urban areas. The case of Brazil presents relevant facts: in Sao Paulo, for example, even though they have overcome certain problems related to urban poverty, such as the spread of infectious diseases, the phenomenon of urban violence has dramatically persisted, acquiring epidemic nuances. Thus, in Brazil, the registered mortality rates, as a cause of this, occupy the second place on a world scale, after what has been registered in the United States, which suggests, in Stephen's words, that "*the children saved from sanitary diseases have grown up to kill each other*" (Stephens 1994: 15, in Brennan 1999: 11).

The existence of violence, as a negative externality of urban growth, responds to a series of socioeconomic factors that have also been generated from this growth (Brennan 1999: 11). According to the United Nation's division in charge of human settlement, poverty conditions represent fertile ground for the development of violence (Brennan 1999: 12). Among these factors are: i) insufficient income (low salaries and sporadically received), ii) overcrowding (and, in some cases, living under oppression and social discrimination), and iii) living under insecure or unstable renting conditions. Furthermore, international literature upholds the idea that the psychosocial health problems developed in urban spaces are deep-rooted in a complex manner in these spaces, above all when they coincide with poverty, whether in developed or developing countries (Stephens 1994, in Brennan 1999: 11). It is clear then, that the existence of violence in urban spaces does not arise as a "spontaneous occurrence" (Brennan 1999: 11); it can only be understood in the context of extensive background (Gilbert 1996: 873) and, in this way, as a product of conditions of inequality and social exclusion (Brennan 1999: 11).

The phenomenon of urban violence not only has to do with economic aspects, products of a rapid and vertiginous process of urbanization, but rather with factors related to the weakening of the values and local traditions, such as the variations in the degree of social cohesion and existing solidarity among the members of the urban communities. It is clear then that the processes of urban growth also accompanies the erosion of moral values, and the collapse of structures and social institutions such as the family or the neighborhood, which puts the communities at risk (Habitat Debate 1998, in Brennan 1999: 12). They play in favor of these specific aspects, factors such as the susceptibility to certain contents or products of mass culture, such as the level of violence on television, the availability of guns, alcohol, drugs, etc.

It is important to show that the existence of violence, insecurity and also criminality in urban spaces have influenced the spatial and social configuration of the cities, generating segregation processes: where the poor reside, exists a lack of security and protection, due to the impossibility of acquiring sophisticated security devices or for the lack of state involvement. According to Brennan, in many megacities, the poor are the main victims to urban violence.

The importance of carrying out local studies around the link between urbanization and its negative externalities, such as violence, has to do with the fact that in the future the cities in the developing world will grow immensely, with a majority of their population living in poverty, suffering the impacts of these externalities (Brennan 1999: 12) and in turn their implied consequences. As the studies show on the subject, given the current economic conditions, the people's situation will not change in the coming decades, it seems like, which is why these topics ought to be essential in the research agendas and evidence-based policies.

**b. Violence against women in urban spaces: International and local literature**

We begin by defining domestic violence as physical, sexual or emotional violence carried out against the woman/mother by a member of the household (whether or not it is the victim's partner) within the home itself or in private.

This kind of violence (Intimate Partner Violence-IPV) can be understood from various approaches. In this study, we consider Sherrard et al.'s approach, which outlines three models of IPV: interpersonal, familial, and gender and politically based. In the first case, violence has psychological causes, rooted in problems such as alcoholism and others that generate a distortion of interpersonal communication. Secondly, we find the model of family violence, in which the abuse is developed within an environment which assures or allows for the violence as a mechanism of discipline or conflict resolution. In this case, to counteract it, what needs to be done is break the family or community norm that favors this type of violence. Lastly, we have the model of gender and politically based violence, which is based on a "necessity" to maintain or reinforce the male power over women and which is validated by the couple's socio-cultural environment (Sherrard et al. 1994:33).

According to Flake and Morrison, living in urban areas increases the probability of domestic violence against women (Flake 2005; Morrison et al. 2007). Different studies confirm also that domestic violence is mainly an urban phenomenon. Vandnais & Kols (2006) and Hindin et al (2008) found that urban women has higher chances of suffering intimate partner violence than rural women even after controlling for variables at the individual, familial, and community level. In figure 1, we could see these findings where five out of nine developing countries have a statistical and significant association between domestic violence and urban environments that reaffirm domestic violence as an urban externality.

Figure 1. Domestic violence against women as an urban phenomenon in urban areas (adjusted odds ratios)
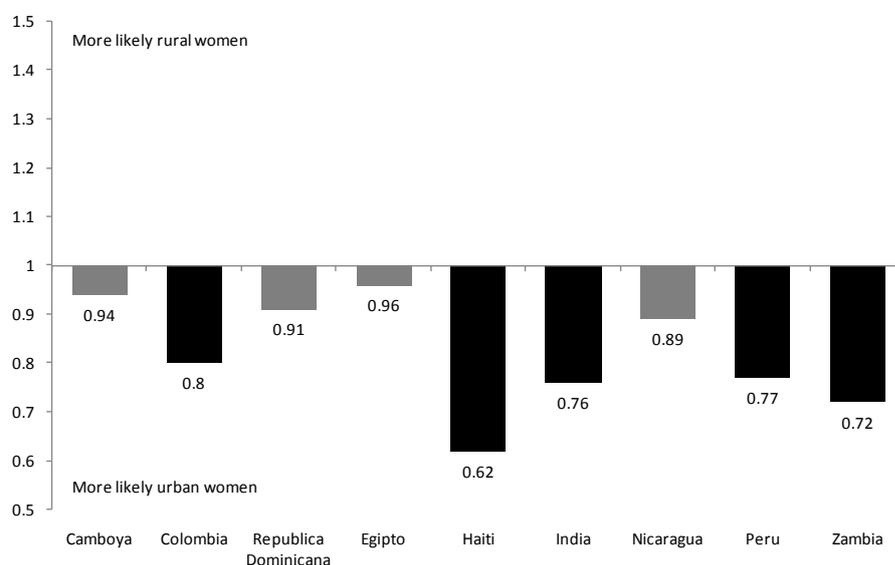


Note: Darker bars mean difference statistically significant between rural and urban areas.
Source: Women's Lives and Experiences: Changes in the Past Ten Years (Vadnais & Kols, 2006)

According to a study carried out in 11 countries by the World Health Organization in 2005, the prevalence of IPV at some moment of a woman's life range from 12.9% in Japan's urban regions to 48.6% in Peru's urban areas (Morrison et al. 2007: 2; García-Moreno et al. 2006: 5). In Peru, almost two out of five women have experienced some type of violence by their partner. Furthermore, according to a study developed by Gonzáles de Olarte and Gavilano Llosa in 1999, in Metropolitan Lima 85% of women suffered psychological violence, 31% physical and 49% sexual (Flake 2005: 3).

In Lima, 25% of the cases of physical abuse were severe while the other half were considered moderate (García-Moreno et al. 2006:6). In Lima, a little more than 50% of the total number of women victims of violence only suffered physical abuse, and only 5% suffered only sexual abuse, while more than 40% suffered both types of violence (García-Moreno et al. 2006:6).

Among the factors associated with the existence of domestic violence against women, we find that low levels of education, in victims as well as their aggressors, is positively associated with the occurrence of domestic violence against women (Morrison et al. 2007; Koenig et al. 2006; Ghahari et al. 2009; Flake 2005); the and alcohol abuse is found to be associated with the probability that a man turns into an aggressor towards his partner (Koenig et al. 2006; Barker 2010; Morrison et al. 2007); socioeconomic factors such as a woman's economic dependence (Sherrard et al. 1994; Rondon 2003) or the lack of economic opportunities for the man (Flake 2005; Barker 2010; Ghahari et al. 2009) also favor the presence of domestic violence against women.

Other related environmental factors are the high rates of criminality in the area (Morrison et al. 2007; Koenig et al. 2006), the sharing of cultural norms that tolerate or support violence as a mean to solve problems or as punishment (Koenig et al. 2006, Barker 2010, Morrison et al. 2007) or that support masculine domination over the woman (Flake 2005, Barker 2010, Morrison et al. 2007).

**c. The intergenerational transmission of violence: violence against children as a consequence of domestic violence against women**

Domestic violence against women has consequences that are not only measured by the health status or the impacts on the body of the victim, but rather should be analyzed in different spaces in the life of the woman herself, her family members and her community (García-Moreno 2000; Ruiz-Pérez et al. 2004; Morrison et al. 2007; Koenig et al. 2006). In this case we focus especially on one of the most important consequences of domestic violence against women as an urban phenomenon: violence against children.

As can be expected, various aspects exist that can be related to the occurrence of violence against children: factors that have to do with the children, with his or her parents or caretakers, or with their surroundings. Within these aspects, literature suggests that the phenomenon of domestic violence against women plays an important role as a determining factor of the presence of violence against children in the household. In countries such as China, Colombia, Egypt, India, Mexico, the Philippines and South Africa, a clear relationship between intimate partner violence (IPV) and violence against children has been found. In the specific case of India, it was found that households where IPV existed, the risk of children suffering some form of abuse increased by almost 100% (Pinheiro 2006: 70; OMS 2010). The study on Peru by Gage and Silvestre (2010) found that IPV increased the probability that a mother utilizes physical punishment towards her children, even after controlling by socioeconomic factors. In addition, the authors found that a mother victim of physical violence by someone that is not the current partner is also an important factor that reinforces the use of physical forms of punishment.

Domestic violence against women tends to go hand in hand with violence against children. Presence of violence at home indicates relationships marked by gender-based domestic regimen; which is, characterized by gender inequality where the male partner uses everyday practices and behaviors that affect woman and children well-being, making the abuser the one with the greatest amount of power within the home, based on fear and distrust generated in the victims (Morris 2009: 418).

According to some studies, the average overlapping of violence against children and violence carried out by an intimate partner (IPV) is at 40%. On the other hand, children that are "merely" witnesses to domestic violence against their mothers should not be considered secondary victims of IPV, because being witnesses implies that the psychological damage is similar to those inflicted on the mother. Thus, the violent coercion against the mother transforms into violent coercion against the children, so much more than bare witnesses, the children also turn into victims of violence. Furthermore, we find

that the fact that the children in these circumstances, for the same reason of being children, do not have a choice between being witnesses of IPV or stop being victims, but rather are viewed as being obliged to coexist with this type of violence, which in itself is a type of direct abuse (Goddard and Bedi 2010: 10).

According to different studies cited by García-Moreno (2000), the impact of violence against women manifests itself in their children whom might suffer behavioral problems, problems in school, negative relationships with their peers, difficulty in adapting to the school environment, absenteeism, withdrawal, depression, post traumatic stress, suicidal tendencies, anxiety, less interpersonal sensibility (empathy), bad relationship with the mother (García-Moreno 2000:16; Goddard and Bedi 2010:7), tendencies for high risk conduct (non-safe sex practices) in the future and the tendency to exercise violence against others or be victims of domestic violence at some point in their lives (García-Moreno 2000: 16).

It is important to emphasize again that the factors associated with domestic violence are in various cases also factors associated with violence against children. If we start with the ecological model (socio-cultural, communitarian, familiar/relational, individual), we can see that from the socio-cultural sphere, the tolerance/social acceptance of violence as a means to resolve conflicts and as a disciplinary method/punishment is also linked with violence against children. Meanwhile, from the familial/relational sphere is the parent's history of violence, together with the pressure or economic difficulties that play a role on violence against children. Finally, in the communitarian sphere we have variables as the average of criminality of the area and the poverty increases the odds of violence against children (Sadowski et al. 2004: 86-87; OMS 2010; Barker 2010).

Thus, based on that literature we propose the following theoretical model that represents the relationships between poverty, violence against women and violence against children.

Figure 2. Conceptual map of the associations between violence against women and family level of well-being with violence against children in urban settings
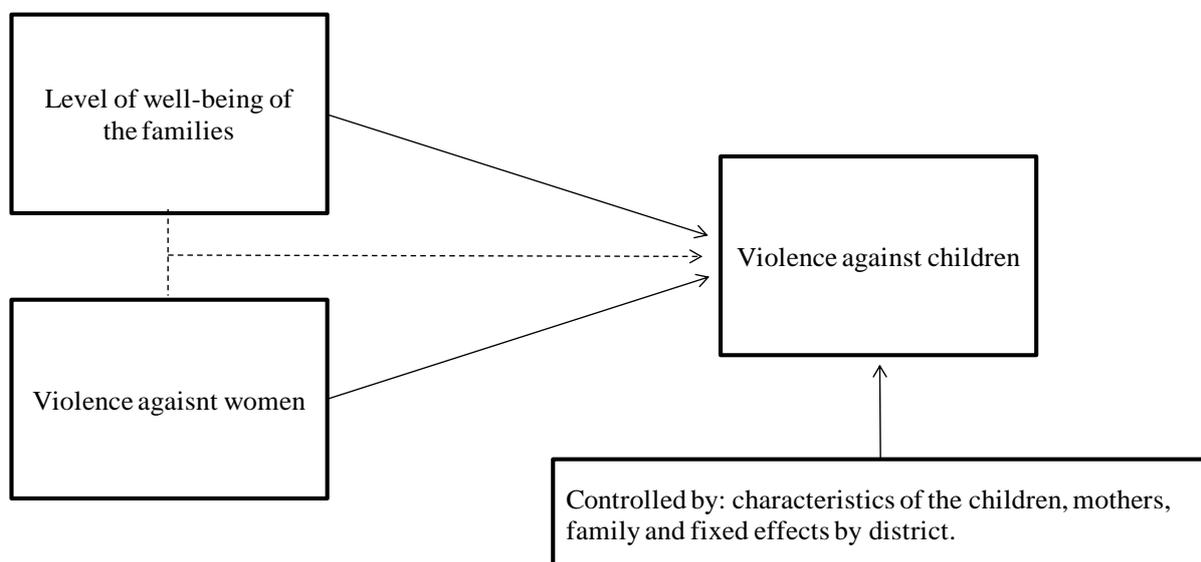
## III. DATABASES AND INSTRUMENTS USED

We will use unique data created and gathered with support from the Bernard van Leer Foundation in 2011. The project was carried out in three regions in Peru and gathered information in rural and urban households. For the present study, we used the urban sample which includes 598 children between one and seven years old from 447 households located in 16 communities in three regions in Peru (Loreto, Huancavelica and Lima). The selection of the sample was random, multi-staged and stratified, which reduces the sampling error. Table 1 shows us the distribution of children, households and communities by region, such as the total study sample:

**Table 1: Number of children, households and communities in the study**

|  | Children | Households | Communities |
|---|---|---|---|
| Total | 598 | 447 | 16 |
| Huancavelica | 76 | 57 | 2 |
| Lima | 362 | 276 | 10 |
| Loreto | 160 | 114 | 4 |

To realize the above-mentioned project, a series of instruments were designed for measuring the incidence of malnutrition, accidental injuries, and violence against children. The household survey module used to gather data on violence against women collected information on whether a woman at some point has fallen victim to physical or psychological violence by her husband or partner, and whether these aggressions have occurred in the last three to twelve months. This study considers only physical violence against women and children as measures for domestic violence. To measure violence against children, we used as framework the work developed by Straus et al (1998). This study divided children violence in severe and moderate. Severe violence when the parents hit their children (within which fist punches are distinguished from kicks) and moderate violence when a child is caused harm by an object (e.g.: belt) or slap and hair or ear pulling. However, for the purpose of the present study, we generated an additional category called light physical violence, which in the Straus et al. study was included in the moderate physical punishment category.

To measure violence against women, we used a standard measure used in international studies at developing countries (Hindin et al 2008, Vadnais & Kols, 2006). We coded as physical and sexual violence if a women experienced any abusive behavior from her actual or most recent partner. We considered as an abusive behavior the following acts: i) the partner/ex partner pushed, tugged or threw something at her; ii) slapped or twisted her arm, punched her with a fist or with something that could have hurt her; iii) if he has kicked or dragged her; iv) if he has tried to strangle or burn her; v) if he has attacked/assaulted her with a knife, gun or other type of weapon; vi) if he has threatened her with a knife, gun or other type of weapon; vii) if he has used physical force to coerce her into having sexual relations against her will; or viii) if he has forced her to perform other sexual acts against her will.

Also, the household survey helps us to measure the women attitudes toward punishment. As we saw in the previous section, the socio-cultural norms could play an important role on children violence. Then, it is important to measure women's attitudes toward punishment as a mean to capture this social norms that surround domestic violence. Then, we asked about the mother's attitudes towards children physical punishment. We used the items already tested in different developing countries through the Demographic and Health Surveys. These surveys have been administered by Macro International since 1984 and the Domestic Violence component since early 2000s. Then, this variable measures when a mother believes that child punishment is justified (e.g.: it is justified to physically punish a child when he/she does not want to do his/her homework).

Other important variable mentioned in the literature as a risk factor for domestic violence is poverty. This study uses as proxy for poverty the family level of well-being. Different studies carried out in developing countries found that there is a high correlation between family well-being and level of income, even international institutions like Measure DHS use family well-being as a proxy for family socioeconomic status. Then, we used information collected about the number of basic services at home (e.g.: pipe water), number of durable assets at home (e.g.: car), house quality (e.g.: adequate floor), and maximum years of schooling at home; as indicators for our family well-being index.

Lastly, for all the statistical analysis, a STATA 11.1 software was used to do the descriptive and multivariate analysis of the data, but also to correct the variance-covariance matrix given the hierarchical structure of the data (families within communities).

## IV. DESCRIPTIVE ANALYSIS

### a. Violence against women and violence against children: magnitude and intergenerational transmission

As previously mentioned, we consider here only the physical violence by the partner against a woman; while in the case of violence against children we consider only physical violence in its three levels: i) severe violence when parents hit their children, ii) moderate violence when a child is caused harm by some object, and iii) light physical violence consisting of giving the child a slap, or hair or ear pulling.

Once the different aspects of physical violence are defined, we can see the incidence levels or the magnitude of this phenomenon in the urban areas for our sample by region. Figure 3 shows that this phenomenon is pretty similar across regions, being Huancavelica the region with the highest levels of violence against women with 53% of women facing this problem at home. This aspect shows us that physical violence against women is a latent aspect in urban areas and almost one out of two women experienced domestic violence at home by her partner or recent partner.

**Figure 3. Occurrence of physical violence against women by region**
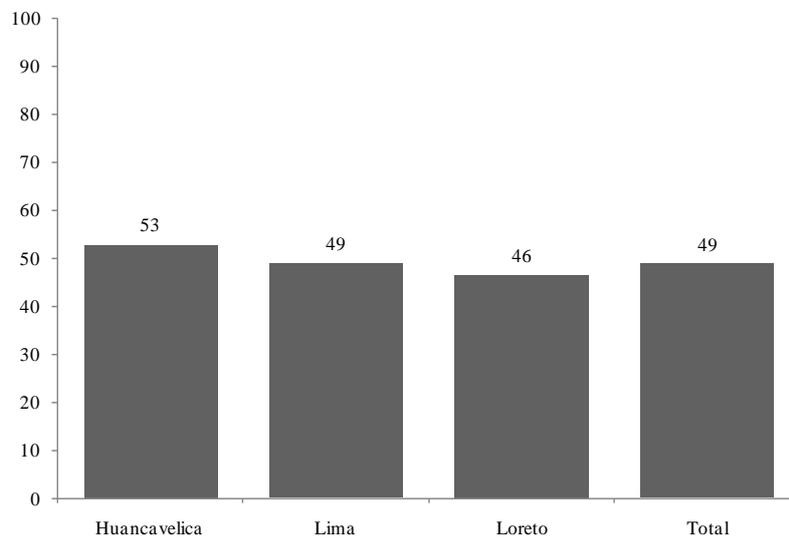


Furthermore, we explored the level of occurrence of any kind of physical violence against children by regions, an approach that is shown in figure 4. Similar to the case of physical violence against women, children in the three regions are facing this problem. Loreto is the place where the highest level of children violence happens: 42% of the children are suffering of any type of physical punishment or violence. As we could see, almost one out of three children suffers of physical violence perpetrated by the parents. This finding shows that not only violence against women is an issue but also violence against children is a phenomenon that is occurring and affecting the child well-being.

**Figure 4. Occurrence of physical violence against children by region**
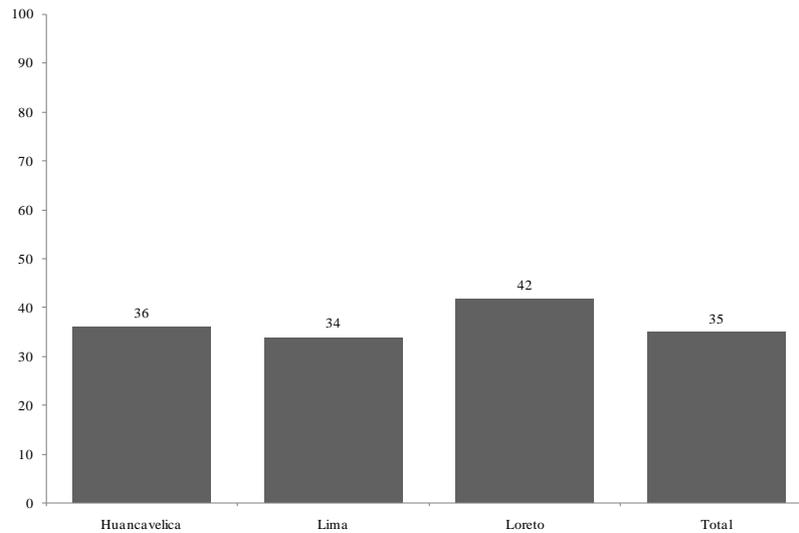


Lastly, figure 5 gives us a first glance of the intergenerational transmission of violence. This figure shows us that in households free from physical violence against women, the probability of physical violence against children is lower than in the households with occurrence of violence against women. The intergenerational transmission could be seen it across regions being Loreto the region where household with violence against women have the highest level of violence against children where one out of two children suffered of any type of physical violence at home.

**Figure 5. Occurrence of physical violence against children by occurrence of violence against women and region**
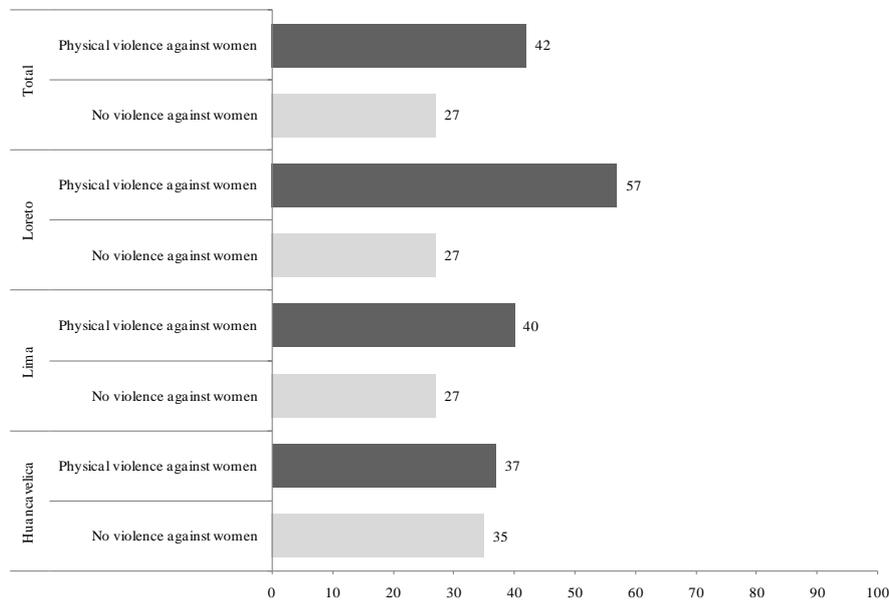


### b. Family well-being, attitudes towards physical punishment, violence against women and children: magnitude and possible interactions

As we saw in the literature review, one of the main factors associated with domestic violence is poverty. This study uses as proxy for poverty family well-being. Figure 5 shows the relationship between family well-being (quartiles) and physical violence against women. As we could see, families with lower levels of well-being (First quartile) have more probability of facing domestic violence

since the 59% of the women experienced any type of violence. Then, we could see how the occurrence of domestic violence decreased across the levels of well-being: in the fourth quartile 40% of women experienced violence from her partner or most recent partner. Also, the same pattern could be seen it when we look physical violence in the past 3 months.

**Figure 6. Occurrence of physical violence against women by family levels of well-being**
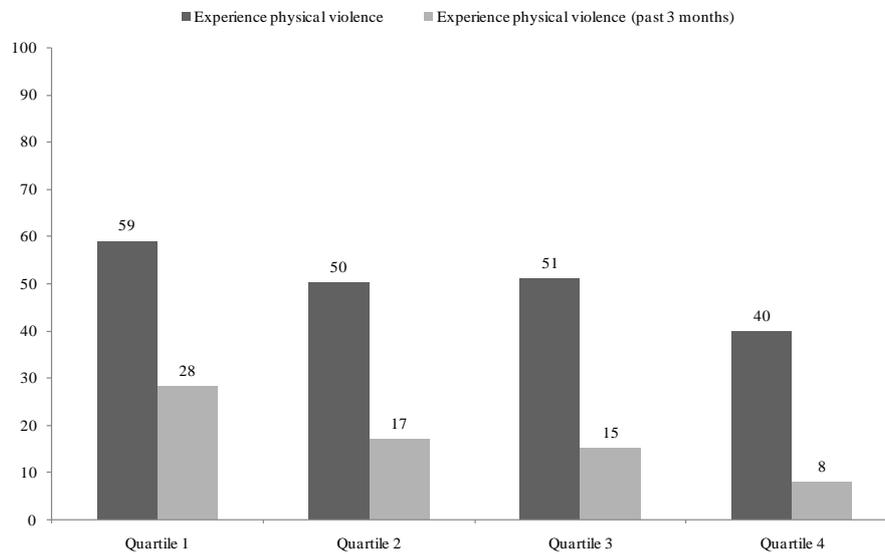


In terms of violence against children, we could find a similar pattern than violence against women. Children who live in households with lower level of well-being have higher probabilities of suffering violence. In figure 6, we could appreciate that 45% of the children in the first Quartile experienced any type of violence, while the percentage in the fourth quartile is 30%. Then, if we consider only severe and moderate violence against children, 30% of children in the first quartile have suffered of this level of violence while in the fourth quartile 14% of children suffered this type of violence. These results indicate that as physical violence against women, children from families with lower levels of well-being have the higher chances of suffering not only violence but also more likely of suffering moderate and severe episodes of violence.

**Figure 7. Occurrence of physical violence against children by family level of well-being**
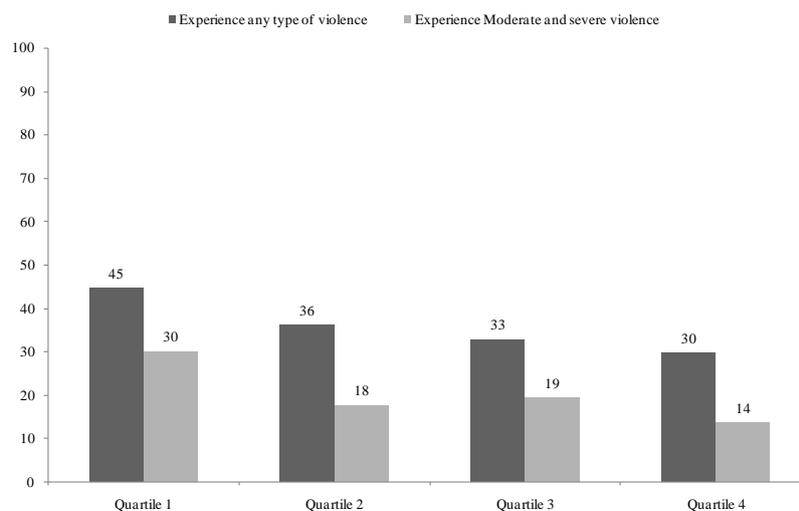


Until now, we could see that families with higher level of well-being have less probability of facing violence against women and children; however, we explore now the interaction between family well-being and violence against women, in order to see if the combination of these factors at home

exacerbates the occurrence of violence against children. Figure 7 gives a first glance of this relationship: we could see that once we split the sample by the occurrence or not of violence against women, the occurrence of any type violence against children among families with lower levels of well-being goes from 23% to 58% (increment of 35%), while for wealthiest families goes from 27% to 33% of children (increment of 6%). These findings indicate that the interaction between family well-being and violence against women at home increases the violence against children at a higher rate in less wealthiest families. Similar pattern could be seen it if we consider only moderate and severe violence against children.

**Figure 8. Occurrence of physical violence against children by occurrence of violence against women and family level of well-being**
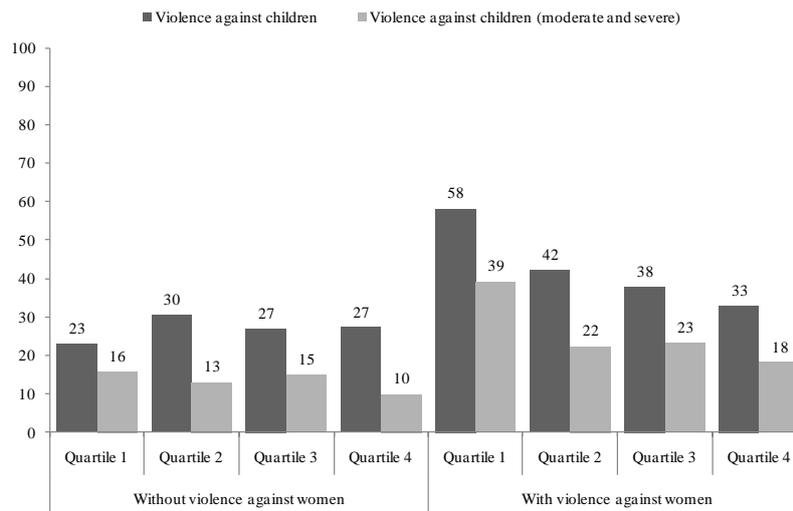


Another aspect that we explore in this study is mothers' positive attitudes towards child physical punishment as a measure of socio-cultural norms about violence and the role of them in domestic violence. As was suggested in the literature review, tolerant attitudes towards a violent environment can perpetuate its existence. As we mentioned in a previous section, we generated a composite score that reflects positive attitudes towards this child, then we divided in quartiles so we could explore the relationship between domestic violence and different levels of attitudes towards child punishment. Figure 9 shows that violence against women and positive attitudes towards child punishment are positively associated. Thus, mothers with higher attitudes toward punishment have the higher occurrence of violence against women with 60% of the women experience any type of violence while only 41% of women experience violence in the lowest quartile. However, if we look the violence in the past 3 months, no clear pattern could be observed and it looks that there is no association between these variables.

**Figure 9. Occurrence of physical violence against women by level of positive attitudes toward child punishment**
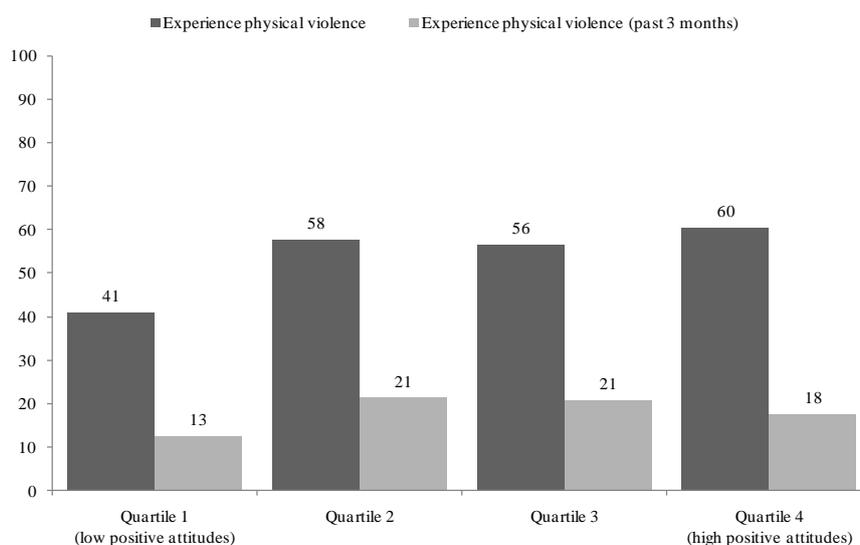


In Figure 10, we could see the association between women's attitudes toward child punishment and violence against children. As we saw for violence against women, the association between these variables is positive. In other words, children from women with high positive attitudes toward child punishment have higher probabilities of experience violence at home, being the difference between the high and low quartile of 28%. Similar pattern is observed if we consider only moderate and severe violence, being children from families with low positive attitudes toward child punishment those who have fewer probabilities of experience violence.

**Figure 10. Occurrence of physical violence against children by level of positive attitudes toward child punishment**
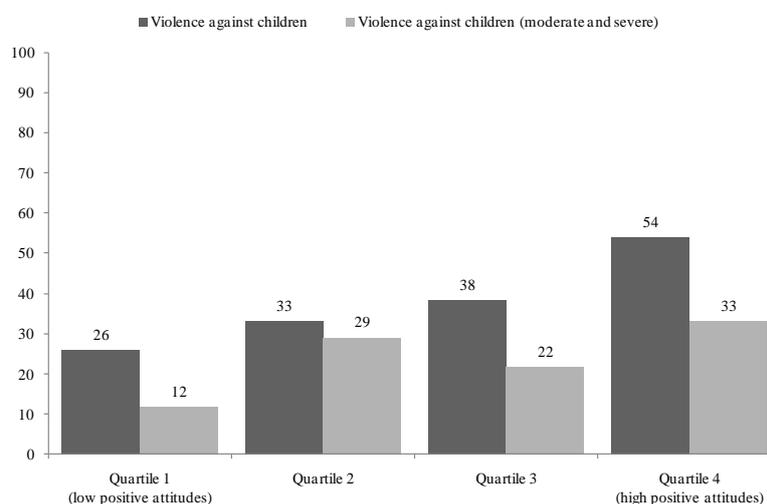


Figures 9 and 10 show that there is an association between attitudes and domestic violence, as we saw for family well-being; however, there is not an interaction between violence against women and attitudes as we could see in figure 11. Unlike the interaction between family well-being and violence against women where the combination of these variables exacerbates violence against children, the interaction between violence against women and attitudes do not worsen the probability of violence against children, being the increment of experience violence against children 14% in the first quartile, 18% in the second quartile, 7% in the third quartile and 6% in the fourth quartile.

**Figure 11. Occurrence of physical violence against children by occurrence of violence against women and levels of positive attitudes towards child punishment**
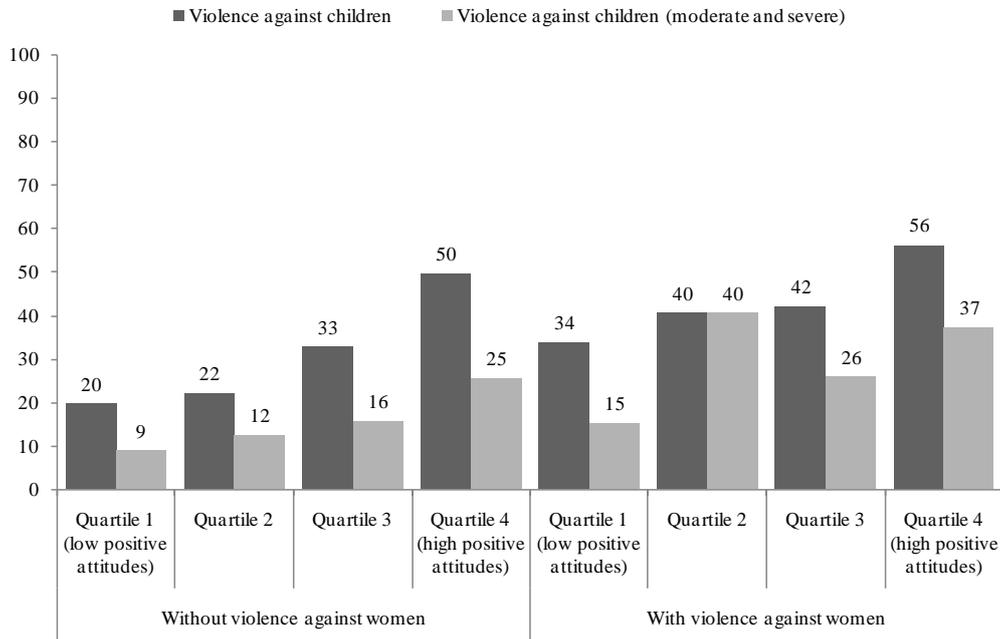


Lastly, we can see the correlation among the variables related with physical violence (women and children), mother's attitudes and the family well-being. Table 2 shows that the family well-being has a negative and significant correlation with all variables related with violence (incidence and attitudes), being the highest correlation with the variable that reflects attitudes towards child punishment (r=-0.20, p<.001). The variables of physical violence (women and children) are positively correlated and statistically significant (r=0.17, p<0.001). Finally, the correlations between violence (women and children) and attitudes are positive and statistically significant being the highest with violence against children (0.24, p<0.001).

**Table 2. Matrix of correlations among the variables on violence and the family level of well-being**

| | 1 | | 2 | | 3 | |
|---|---|---|---|---|---|---|
| 1. Quartiles of Well-being | 1.00 | | | | | |
| 2. Physical violence against women | -0.10 | * | | | | |
| 3. Physical violence against children | -0.12 | ** | 0.17 | *** | | |
| 4. Attitudes towards punishment (total score) | -0.20 | *** | 0.17 | *** | 0.24 | *** |

***p<.001, **p<.01,*p<.05

# V. MULTIVARIATE ANALYSIS

In previous section, we showed a statistically significant correlation among the variables related with physical violence (mother and children), mother's attitudes and family well-being. However, those relationships do not hold constant the effect of children characteristics (e.g.: age), mothers characteristics (e.g.: mother tongue) and community characteristics (e.g.: fixed effects by district). To account for these characteristics, a multivariate statistical approach is necessary. The method and variables used are described in the following section.

## a. Statistical model

To be able to identify the main factors associated with physical violence against children at home and given that we wanted to take into account the severity of the physical violence against children, we use an ordinal regression model that takes into account the information of the order of the categories. The statistical model used is an ordinal logit regression model. This statistical tool uses the information about the ordering of the dependent variable and estimates the cumulative probabilities in each cut-point or threshold. The general model with k ordered categories is:

$$logit\ (Y \leq i) = \ln\left(\frac{P(Y \leq i)}{1 - P(Y \leq i)}\right) = \alpha_i + \beta_{i1}X_1 + \cdots + \beta_{im}X_m, \qquad i = 1, \dots k-1$$

Then, we have k-1 models or equations. However, we assumed that each logistic coefficient ($\beta_i$) does not depend of each category (i); then, we have the following model:

$$logit\ (Y \leq i) = \alpha_i + \beta_1 X_1 + \cdots + \beta_m X_m, \qquad i = 1, \dots k-1$$

Thus, the k-1 odds for each threshold (i) differ in the intercept or $\alpha_i$ in our model.

## b. Variables

The dependent variable considered for this study is:

a. Physical violence against children: ordinal variable that takes the value of 0 if the children do not suffer any type of physical violence at home, 1 if the children have suffered of slaps, hair or ear pulling, and 2 if the mother or father (or mother's partner) beat the children, hurt them with an object (e.g.: a belt, whip, *penca* or *ortiga* [branches with needles]).

The principal predictor or independent variables used in this study are:

a. Physical violence against women in the household: dichotomous variable that takes the value of 1 if the mother or caretaker has suffered physical violence by their partner (or previous partner). Physical violence is considered to be the following: i) the partner/ex partner pushed, tugged or threw something at her; ii) slapped or twisted her arm, punched her with a fist or with something that could have hurt her; iii) if he has kicked or dragged her; iv) if he has tried to strangle or burn her; v) if he has attacked/assaulted her with a knife, gun or other type of weapon; vi) if he has threatened her with a knife, gun or other type of weapon; vii) if he has used physical force to coerce her into having sexual relations against her will; or viii) if he has forced her to perform other sexual acts against her will.
b. Mother's positive attitudes towards children physical punishment: this variable is a composite score made up by the sum of seven items. Each item makes reference to a situation where is justified to children punishment (e.g.: It is justified to physically punish a child when he/she does not want to do his/her homework). The items were coded as 1= strongly disagree/disagree, 2= undecided, 3= agree/strongly agree. The mean of this variable is 8.7 and the standard deviation 2.7.

c. Family well-being (Quartiles): ordinal variable that reflects the well-being quartiles where 1 means fewer resources at home and 4 higher resources at home. Then, four dichotomous variables were generated. These dummy variables take the value of 1 according each well-being quartile. In the analysis, the fourth quartile was taken as reference group.

The controls included in this study are:

a. Age cohorts (dummy variables): three dummy variables were generated, one for each age cohort. The age cohorts considered are from 1 to 2 years, 3 to 5 years and 6 to 7 years. It is used as reference group the last age cohort (6 to 7 years old).
b. Gender: dichotomous variable that takes the value of 1 for female and 0 for male.
c. Birth order: ordinal variable that indicates the order of birth of the children.
d. School or care center attendance: dichotomous variable that takes the value of 1 if the child attends an educational facility or care center and 0 otherwise.
e. Mother's age: continuous variable that indicates the mother's or caretaker's age in years.
f. Mother tongue (mother): dichotomous variable that takes the value of 1 if the mother tongue is indigenous (e.g.: Quechua, Aguaruna) and 0 otherwise.
g. Mother has a work: dichotomous variable that takes the value of 1 if the mother or caretaker works and 0 otherwise.
h. District of residence (dummy variables): dichotomous variables that take the value of 1 according the district of residence of each family. The districts included in the analysis are: Acoria, Belen, Huancavelica, Punchana, San Juan de Miraflores and Villa el Salvador. The district of San Juan de Miraflores was used as a reference group.

Table 3 shows the main descriptive statistics of the variables included in the regression models.

**Table 3. Descriptive statistics of the variables included in the regression models**

|  | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|
| Dependent variable | | | | |
|     Physical violence against children | 0.55 | 0.80 | 0 | 2 |
| Independent Variables | | | | |
|     Family well-being | | | | |
|       Quartile 1 (poorer) | 16.9 | 37.5 | 0 | 1 |
|       Quartile 2 | 26.6 | 44.2 | 0 | 1 |
|       Quartile 3 | 30.4 | 46.1 | 0 | 1 |
|     Physical violence against women | 54.6 | 49.8 | 0 | 1 |
|     Attitudes towards child punishment | | | | |
|       Quartile 2 | 6.7 | 25.0 | 0 | 1 |
|       Quartile 3 | 19.3 | 39.5 | 0 | 1 |
|       Quartile 4 (High positive attitudes) | 21.4 | 41.0 | 0 | 1 |
|   Controls | | | | |
|     Order of birth | 2.5 | 1.5 | 1 | 10 |
|     Woman | 50.9 | 50.0 | 0 | 1 |
|     Cohort 1 (1 to 2 years old) | 28.7 | 45.3 | 0 | 1 |
|     Cohort 2 (3 to 5 years old) | 41.2 | 49.3 | 0 | 1 |
|     Attends a school or care center | 63.3 | 48.2 | 0 | 1 |
|     Mother's age | 31.3 | 6.9 | 18 | 54 |
|     Mother's first language | 12.2 | 32.8 | 0 | 1 |
|     The mother works | 52.2 | 50.0 | 0 | 1 |
|     The mother has a partner or cohabitant | 88.5 | 31.9 | 0 | 1 |

| | | | | |
|---|---|---|---|---|
| Acoria | 0.3 | 5.4 | 0 | 1 |
| Belen | 4.8 | 21.4 | 0 | 1 |
| Huancavelica | 2.2 | 14.8 | 0 | 1 |
| Punchana | 6.8 | 25.3 | 0 | 1 |
| Villa el Salvador | 46.4 | 49.9 | 0 | 1 |
| San Juan de Miraflores | 39.5 | 48.9 | 0 | 1 |

N=555

### c. Results

Table 4 shows the results from the estimated regression models to predict physical violence against children. The first three estimated models show the direct relationship between physical violence against woman, quartiles of family well-being, and quartiles of women attitudes on physical violence against children. As we could see, model 1 shows that physical violence against women has a positive and significant effect on violence against children (OR: 2.2, p<0.01); in other words, children from women that experience physical violence are twice more likely of suffering physical violence. This finding shows the intergenerational transmission of violence from mother to child. Model 2 shows that socio-cultural norms expressed in positive attitudes toward child punishment is positively associated with violence against children (OR: 3.3 and 2.0, p<.01). Model 3 shows that family well-being matters and it is statistically significant the difference between the first quartile and the fourth quartile (OR: 2.4, p<.01). These findings confirm international literature and it shows that violence against children is a multidimensional phenomenon and model 4 includes all the main effect together and we could see that all of the main effects are significant and associated with violence against children.

A second step, as we did in the descriptive section, is to test the interaction between violence against women with family well-being and women attitudes towards child punishment. Model 5 and 6 test these interactions. As we could see, only the interaction between violence against women and family well-being was statistically significant. Model 5 shows that only the interaction between violence against women is supported: the difference between the first and fourth well-being quartile is statistically significant (OR: 3.6,p<.05). This finding confirms the non-linear relationship between these two variables on physical violence against children. Then, a family with the lower levels of well-being and where the mother experience physical violence, is the one which present higher likelihood of physical violence against children.

Then, we estimated a model that includes the different findings from our previous models ( model 7). In this model, we include each of our variables that are associated with violence against children and the interaction between violence against women and family well-being. As we could see, the main effect for women attitudes towards child punishment remains significant (OR: 3.1 and 1.9, p<.01). This indicates the relevance to change socio-cultural norms in urban areas in order to improve children well-being. Also we could see that while the main effects for violence against women and family well-being are not significant the interaction between those variable is supported: this means that there is more a non-linear association between these variables with violence against children. In sum, we could confirm first the intergenerational transmission of violence from mother to child (model 1), the relevance of family well being (model 3 and 4) and socio-cultural norms (model 2 and 4) as predictors of violence against children in urban settings, and finally that there is a non-linear association between violence against women and family well-being that exacerbate the violence against children in urban spaces.

**Table 4. Odds ratios from ordinal logit regression models estimates to predict physical violence against children (N=555)**

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|---|---|---|---|---|---|---|---|
| Physical violence against women | 2.204** | | | 1.866* | 1.287 | 1.938 | 1.287 |
| | (0.674) | | | (0.51) | (0.78) | (1.03) | (0.78) |
| Attitudes towards child punishment (ref. Q1) | | | | | | | |
| Q2 | | 1.821 | | 1.740 | 1.660 | 1.178 | 1.660 |
| | | (1.43) | | (1.31) | (1.26) | (1.40) | (1.26) |
| Q3 | | 2.024** | | 1.931* | 1.872* | 2.281** | 1.872* |
| | | (0.51) | | (0.57) | (0.56) | (0.64) | (0.56) |
| Q4 (High positive attitudes) | | 3.273** | | 3.180** | 3.099** | 3.359* | 3.099** |
| | | (0.69) | | (0.71) | (0.68) | (1.96) | (0.68) |
| Family well-being (ref. Q4) | | | | | | | |
| Q1 (poorer) | | | 2.399** | 2.165* | 0.920 | 2.148* | 0.920 |
| | | | (0.77) | (0.72) | (0.53) | (0.74) | (0.53) |
| Q2 | | | 1.170 | 0.977 | 0.876 | 0.973 | 0.876 |
| | | | (0.36) | (0.29) | (0.44) | (0.28) | (0.44) |
| Q3 | | | 1.110 | 1.185 | 0.990 | 1.172 | 0.990 |
| | | | (0.39) | (0.44) | (0.45) | (0.44) | (0.45) |
| Violence against women x family well-being [ref. Violence x Q4] | | | | | | | |
| Violence x Q1 (poorer) | | | | | 3.639* | | 3.639* |
| | | | | | (2.37) | | (2.37) |
| Violence x Q2 | | | | | 1.296 | | 1.296 |
| | | | | | (1.12) | | (1.12) |
| Violence x Q3 | | | | | 1.448 | | 1.448 |
| | | | | | (0.72) | | (0.72) |
| Violence against women x women attitudes [ref. Violence x Q1] | | | | | | | |
| Violence x Q2 | | | | | | 1.845 | |
| | | | | | | (2.02) | |
| Violence x Q2 | | | | | | 0.769 | |
| | | | | | | (0.46) | |
| Violence x Q4 (higher positive attitudes) | | | | | | 0.916 | |
| | | | | | | (0.73) | |
| Pseudo-R-squared | 0.046 | 0.057 | 0.037 | 0.078 | 0.082 | 0.079 | 0.082 |

All models include the control variables. Robust z-statistics in parentheses

** $p<0.01$, * $p<0.05$, + $p<0.10$

Finally, using model 7, we proceed to estimate the predicted probabilities of physical violence against children, using the interaction between family well-being and violence against women. Figure 12 shows the results of this interaction on the predicted probabilities of physical violence against children. We could see that the differences in the rate of physical violence against children in families with and without physical violence against women are higher in household with low levels of well-being (Quartile 1). Thus, the rate of moderate and severe physical violence against children from households with and without violence against women goes from 13% to 40% for the Quartile 1 and from 13% to 17% for the Quartile 4. Similar results could be seen for light physical violence.

**Figure 12. Predicted probabilities of physical violence against children by family well-being and physical violence against women**
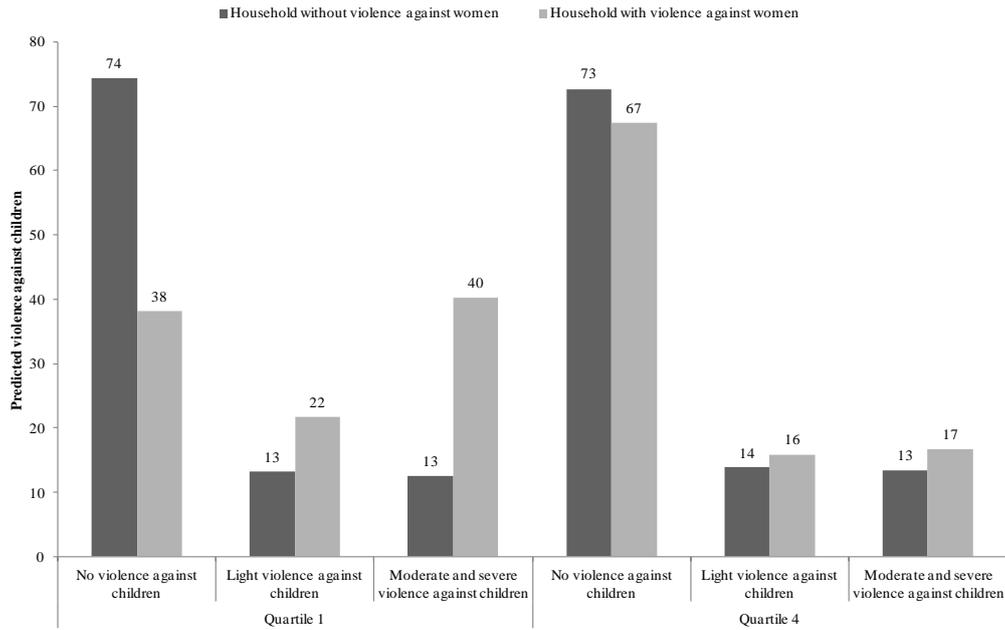
## VI. CONCLUSIONS

In our study, we explored the relationship of two externalities in urban settings: the domestic violence against women and its consequences for violence against children. Our study sheds new light on this relationship and highlights the following key points.

- ✎ Domestic violence is an urban phenomenon to be dealt urgently. The study shows that there is a significant incidence rate of physical violence against women. We found that almost 50% of the surveyed women in our sample have experienced some form of physical violence, and 16% have experienced physical violence in the past 3 months and it increases for families with lower level of well-being. This finding shows that almost one out of five women in urban areas experienced physical violence by their partner recently. This fact confirms the existence of negative externalities in urban surroundings and reinforces the necessity of developing public policies that could address and prevent these problems, not only in existing urban areas but also in new urban areas given the urbanization process that developing countries are facing.

- ✎ Intergenerational transmission of violence from mother to child: this study enriches the knowledge and debate about the intergenerational transmission of violence. Our analysis shows that in urban setting exists a transmission of violence from mother to children. Then, children whose mother experience violence are twice more likely of suffering of domestic violence, even after controlling for demographic characteristics of the children, mother and fixed effects by districts.

- ✎ Attitudes matter: this study shows that positive attitudes towards children punishment and woman's role in the couple are relevant, and they have an effect on physical violence against children. Children, whose mothers have positive attitudes towards child punishment and believe that the role of a woman is to be obedient to her husband, are those who have higher chances of suffering from physical violence at home. These findings show that there is a lot of work that needs to be done in terms of changing attitudes and beliefs about raising a child or the role of a woman. Then, it is necessary to find mechanisms, not only to empower women who are victims of physical abuse to change their situation, but also to start changing mothers misconceptions about child punishment and their own role as a partner. Therefore, it is necessary to work on these two aspects with mothers in urban areas: empowerment and changing attitudes toward violence.

- ✎ There is a relationship between level of well being-a proxy of poverty-and the intergenerational transmission of violence in urban spaces. Households with fewer resources and presence of physical violence against women are more likely to use physical punishment against their children. Our findings show that the presence of violence against women in poor households increases the probability of moderate or severe violence against children from 13% to 40%, while wealthier households increase their odds from 13% to 17% with and without experience of violence against women respectively. In sum, the phenomenon of women violence, child violence and well-being are connected in urban settings and they have a non-linear relationship.

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