

**Impact of intimate partner violence against women in presenteeism and absenteeism in Lima-Peru: estimated cost based on wages**

**Track: Human resource management**

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## Abstract

Two out of 10 full-time salaried women are victims of intimate partner violence worldwide. It causes businesses costs between 8% and 20% of total violence costs to society. In Peru there is no estimation of business costs of intimate partner violence against women (VAW).

Using a descriptive-correlational design in a sample of 189 full-time salaried working women, business costs of VAW have been determined through absenteeism and presenteeism in companies of Lima.

23.1% of working women have suffered some kind of intimate partner violence (current or former partner) in the past 12 months, in an average of 5 times per year; that means 143,347 working women have suffered VAW at least once the past year. Annually, Lima loses almost 4 million working days due to VAW, which represents a loss of 180 million 791 thousand 418.8 dollars for the companies, excluding the production factor and based only on wages.

**Key words:** Absenteeism, presenteeism, intimate partner violence against women, costs, companies.

## Introduction

It is likely that in every company exists working women who are victims of intimate partner violence (VAW). U.S. surveys show that 21% of full-time working women have been victims of intimate partner violence (Bureau of Labor Statistics, 2006; Philbrick et al, 2003). Therefore, companies have been increasing their interest in violence against women (Cruz & Klinger, 2011a, 2011b; Soroptimist International of the Americas, 2011). VAW is not just an occupational health concern, but also an important cause of costs associated with lost productivity, resources, absenteeism and employee turnover (Reeves & O'Leary-Kelly, 2007, 2009).

For managers, VAW costs range from 8% to 20% of the total costs to society. In the United States, the costs of lost productivity are 14.8% of the total violence costs (CDC, 2003). The costs of violence in the labor market, estimated in Denmark, represent approximately 20% of the total costs. These include the loss income and production based on sickness absences (Helweg-Larsen, Kruse, Bronnum-Sorensen & Hansen, 2010). In Australia, the costs related to production represent 8% of the total costs, only considering the absenteeism costs and administrative costs caused by the employee turnover (National Council to Reduce Violence against Women and Their Children, 2009). 39% of these costs were assumed by the companies, 28% by the society, 18% by the victims and 15% by the perpetrators.

VAW cannot be considered a private matter unrelated to business interests (O'Leary, Lean, Reeves & Randel, 2009; Versola-Russo & Russo, 2009) since it directly affects the labor productivity, safety at work and corporative image for internal and external customers (Henderson, 2000; Hoel, Sparks & Cooper, 2001). In Australia, Henderson (2000) identified the economic impact of VAW in business direct costs (absenteeism costs, employee turnover, lost productivity and employer's reliability to provide safety environments). The study estimates- in a conservative scenario- that businesses spent \$ 34 million annually only in absenteeism and employee turnover, besides lost productivity costs between 425.5 and 605.4 million dollars per year

Indeed, when female workers suffer VAW, companies assume unexpected costs. Productivity is affected by tardiness, absences, diminished work performance and employee turnover (Franzway, 2008; Patel & Taylor, 2011; O'Leary, Lean, Reeves & Randel, 2009; Henderson, 2000; Yodanis, Godenzi & Stanko, 2000). Between 60% and 70% of abused women had difficulties in their work performance and have received sanctions or reprimands at work (Brown, 2008; Soroptimist International of the Americas, 2011; Swanberg et al, 2005; Potter & Banyard, 2011), even between 21% and 60% of female workers lose their jobs for reasons related to VAW (cited by Rothman et al, 2007). Studies show that victims of VAW are twice as likely to be fired (Lisboa et al, 2008) besides, they suffer more consequences with their family and 54% at professional level (Lisboa, Barros and Cerejo, 2008, Franzway, 2008; Tolman, 2011; Adams, 2009).

Working women who suffer intimate partner violence, may lose productivity, reduce their income because of discounts, lost wages and lost opportunity cost (BID, 1997; Morrison & Orlando, 1999; Ribero & Sanchez, 2005; Díaz & Miranda, 2010, Laing, 2001; Laing & Bobic, 2002; Swanberg et al, 2005; O'Leary, Lean, Reeves & Randel, 2009) furthermore, they are less likely to invest in their training and present more cases of work absenteeism. One out of five working days that a woman loses due to health problems is caused by VAW (Tennessee Economic Council on Women, 2006). The United States lost nearly 8 million working days per year due to VAW (CDC, 2003). Working women who are victims of physical violence, reported an average of 7.2 less labor productivity and 33.9 working days lost (Arias & Corso, 2005; Karpeles, 2004).

Although absenteeism is one of the most important variables that predicts the labor adjustment, recently the "presenteeism", which means attending the workplace but working at a reduce capacity (Patel & Taylor, 2011), has become an interest topic for business (Johns, 2009), especially when researches report higher business costs than absenteeism, significantly affecting business competitiveness (Collins et al, 2005; Hemp, 2004; Allen, Hubbard & Sullivan, 2005; D'Abate & Eddy, 2007). Presenteeism describes the situations when female workers are on the job, but for some reason related to health or personal life, don not perform at peak levels (for example, work slowly, poor quality of work, many error, distracted at work, etc.). This concept mix the idea of workers present at work and absenteeism: physically present but absent in their performance (Del Libano, 2011).

Although many studies have demonstrated a significant impact of VAW in presenteeism, few have estimated it costs. VAW not only causes a significant impact on absenteeism; also does it on presenteeism, where the employee has diminished their work performance as a consequence of worries and emotional scars caused by violence (Campbell, 2011; Braaf & Barrett-Meyering, 2011, Moe & Myrtle, 2004; Tolman, 2011, Al-Modallal, Hall & Anderson, 2008; Swanberg et al, 2005; O'Leary, Lean, Reeves & Randel, 2009).

In Peru, the economically active women population is around 43.9% with an annual growth of 1.8%, higher than men (INEI, 2012). The increased access to jobs has motivated the participation of more than seven million of Peruvian women in the labor market, primarily in trade and services sector. However, approximately 4 out of 10 Peruvian workers suffer an episode of intimate partner violence (ENDES, 2012), which can definitely affect their work performance. Nevertheless, direct business costs have not been estimated; only a few studies refer to lost earnings for women (e.g., Díaz & Miranda, 2010).

## Objective

- To determine prevalence and incidence (lifetime and current) of intimate partner violence against salaried working women in Metropolitan Lima.
- To determine the impact of violence against women in absenteeism rate, zero productivity and diminished work performance of salaried working women in Metropolitan Lima..
- To determine the business costs of violence against women, that causes absenteeism, zero productivity and diminished work performance of salaried working women in Metropolitan Lima.

## Method

This research uses the indirect costs of human capital methodology, based on the accounting approach (WHO, 2007). The accounting method is an additive model that adds up all costs which were previously grouped into specific categories (Morrison, Ellsberg & Bott, 2005; Day, McKenna, & Bowlus, 2005). This method usually specifies two types of costs: direct (investment in resources to prevent or treat violence) and indirect (consequences and losses caused by violence). The main indirect costs in the workplace are the opportunity costs, absenteeism, lost productivity, job loss (Laing, 2001; Laing & Bobic, 2002, Laurence & Spalter-Roth. 1996; Patel & Taylor, 2011). The indirect cost of human capital methodology calculates the value of lost work time due to absences or lower productivity (WHO, 2007).

Although it is the most accepted method, it has limitations. In general, the problem with the accounting method is that significant cost indicators can be omitted. On the other hand, the selection of any category list is always arbitrary and other alternatives may always arise (Morrison, Ellsberg & Bott, 2005; Morrison & Orlando, 2004). Indeed, the costs associated with VAW are varied and is difficult to make a list of all. Besides, many studies consider that the indirect costs of lost opportunities cannot be quantified (Henderson, 2000; Laing & Bobic, 2002; Patel & Taylor, 2011).

Mattke et al (2007) developed a meta-evaluation of the validity of several methods used to estimate absenteeism and presenteeism costs. The method of "wages conversion" attempts to estimate the loss of production based on the self-report of female workers. This method expresses the lost production, by multiplying the working days lost by the daily wage. Originally used to monetize absenteeism, this method has been used to calculate presenteeism lost, based on the self-reported diminished work performance and converted into working days lost. According to Mattke et al (2007), this approach is useful to estimate production costs, but should always be considered undervalued, since the model is based on individual work, and do not consider domino effects costs between coworkers, especially in high labor interdependence jobs (Koopmanschap, 2005).

### Sample

Using a descriptive-correlational design, 189 salaried women from companies located in Lima were surveyed. These companies are from textile industry (9%), food industry (10.1%), services (36.5%) and the agribusiness (44.4%) sector.

Table 1. Demographic and labor characteristics of surveyed women and their partners (n=189)

Demographic Variables	Employment Variables
Age	Seniority
Average = 33.1 years (S.D.= 10.25)	Less than 4 years = 57.2%
Range: 18 - 65 years	Between 4 and 10 years= 27.8%
	More than 10 years = 15.0%
Have children	Work contract
Yes = 61.4%	Receipt of professional fees= 6.7%
Range = 1 - 4	Payroll of fixed-term contract = 59.2%
Average = 1.77 (S.D.=0.842)	Payroll of indefinite contract = 34.1%
Have a couple	Number of past jobs
Yes = 64.2% (live together = 63.6%)	Is the only company = 36%
Relationship duration:	In one = 33.9%
Less than 3 years = 22%	Between 3 and 5 = 28%
Between 3 and 5 years = 19.5%	Between 6 and 10 = 2.1%
Between 6 and 10 year= 20.3%	
More than 10 years = 38.1%	
Partner's employment status	Average (undiscounted) wage per month
Unemployed = 5.3%	Peruvian Nuevos Soles = 1600.20 (S.D.= 1718.3)
Has a business = 19.3%	U.S. dollar = 604.53 (S.D.= 649.15)
Works for a company = 75.4% (82.1% full-time)	
Partner's average (undiscounted) wage per month	Average working hours per week
Peruvian Nuevos Soles = 3,222.97 (S.D.=3,776.8)	49.0 (S.D.= 8.87)
U.S. dollar = 1,217.6 (S.D.= 1,426.8)	

Source: Arístides Vara

### Instrument

A structured questionnaire was designed, which has five questions of measuring scales and demographic and employment information.

1. Demographic and employment information: Obtains the demographic information of the working women (age, marital status, number of children, living with partner), also labor information (monthly wage, working hours per week, seniority, work contract, number of past jobs). Hourly wage: Female workers are asked about the amount of their monthly wage in Peruvian nuevos soles (fixed salary) or the average salary per month in Peruvian nuevos soles (variable income). The hourly wage is calculated by dividing the monthly wage by the number of hours specified in the female worker contract. In the case of variable wage by commissions or overtime, the number of reported hours will be consider, not the basic salary.
2. Intimate partner violence against women (VAW): VAW is defined as the presence of, at least, one episode of any of the four types of violence and its consequences (economic, psychological, physical, sexual and damage) caused by the intimate partner or former partner, in a specific period of time. VAW is a six-item scale adapted from the CTS-2 (Straus, 2007) and the survey used in the National Violence Against Women Survey (NVAWS) from the Center for Disease Control and Prevention (Saltzman, Fanslow, McMahon & Shelley, 2002 ). It investigates the frequency in which workers have experienced six behaviors or specific actions from their current partners or former partners: 1) Economic violence (partner appropriate her income), 2) Psychological attack (threats, insults, intimidation) 3) Physical Attack (hits, slaps, kicks, bits, subjections), 4)Physical attack with objects (knife, belt, sticks, firearms), 5) Sexual violence (unwanted sexual contact); 6) Physical damage due to violence requiring medical care or rest. The answers are based on a seven-point scale: never, happened before, not now; 1 time, 2 times, 3 to 5 times, 6 to 10 times, 11 to 20 times, more than 20 times. Two periods are distinguished: a) Current Prevalence: Any act of violence within a period of 12 months. b) Life Prevalence: any act of violence happened before a period of 12 months, but not after that. In the current prevalence period, the intensity of violent acts is measured according to the number of times that acts have occurred. The female workers, who never have experienced any kind of violence, are categorized as a group "without violence". The six items are averaged to calculate the value of current violence victimization (only for current prevalence).
3. Consequences of Violence in the workplace: A scale of 5 items adapted from the modified version of Worksite Harassment Tool (Al-Modallal, Hall & Anderson, 2008), was used. It investigates the frequency in which they have experienced five specific consequences of intimate partner violence at the workplace, in the last 12 months: 1) have been late or missed business appointments, 2) have to stop working a few days, 3) have lost concentration or diminished work performance, 3) have received a reprimand or warnings of their boss, 4) have lost her job or been fired. The answers are based on a seven-point scale: never, happened before, not now; 1 time, 2 times, 3 to 5 times, 6 to 10 times, 11 to 20 times, more than 20 times.
4. Absenteeism Costs: There are over 20 scales designed to measure presenteeism and absenteeism costs (Mattke et al, 2007). In this study, those with greater validity and reliability evidence and the shorter ones were chosen; due to the difficulty of obtaining workers samples inside the companies, and also due to the limited time available to apply the surveys. Absenteeism costs are defined as the amount of lost work per absent day depending on the monthly salary. The items were based on those developed by Reeves & O'Learly-Kelly (2007, 2009). Female workers were asked about the number of working days lost, during the past four weeks (last month), considering the following items: 1) Number of working days lost to attend their physical or mental health, 2) Number of working days lost to take care of her or relative's health, 3) Number of working days lost to address legal, financial

or personal issues 4) Number of working days lost for other reasons. The answers are based on a six point scale: never; 1 day, 2 days, 3 to 5 days, 6 to 10 days, more than 10 days. Total absenteeism related to hours / days lost in a four-week period, will depend on the accumulation of these items and then multiplied by the wage/hour of the respondents. This value, that represents the cost of absenteeism per month will be multiplied by 12, to determine the annual cost of absenteeism.

5. Tardiness Costs: The items were based on those developed by Reeves & O'Learly-Kelly (2007, 2009). Tardiness costs are defined as the time lost due to tardiness, evaluated in a period of four weeks (last month), considering the number of days with tardiness: 1) between 15 and 30 minutes after the work start time, 2) between 31 and 60 minutes after the work start time, 3) more than one hour late. The responses are based on a six point scale: never; 1 day, 2 days, 3 to 5 days, 6 to 10 days, more than 10 days. The tardiness costs are calculated considering the number of working days late (on each item), multiplied by the time lost (considering the average values set in 20 minutes, 40 minutes and 80 minutes), and multiplied by the hourly wage. Before calculations, the sum of the minutes lost is converted into hours. This value, which represents the tardiness costs per month, is multiplied by 12 to determine the annual cost of tardiness.
6. Presenteeism costs: To measure presenteeism, a five-item scale about work distraction, adapted from Stewart, Ricci, Chee, Hann & Morganstein (2003) and the Work Limitations Questionnaire-WQL of Lerner et al (2001) was used. Presenteeism is defined as the time that workers went to work but were not productive, in a period of four weeks (last month). It uses the slogan: "We all have periods when we are more productive and periods when our productivity is lower than usual". In a range of time percentages: All the time (100%), most of the time (75%), half the time (50%), some of the time (25%), never (0%), it was indicated if she: 1) have had difficulty concentrating, 2) have worked more slowly than usual, 3) have been tired or exhausted at work, 4) Did not work despite being at work; 5) have to stop working. Since the last two items involves zero-productivity, these are counted as lost hours (zero-productivity). The first three items on the scale are treated differently because they are indicators of reduced productivity (diminished work performance); the three items were averaged assuming a 25% of lost productivity. Total hours of presentism are calculated by adding zero-productivity average to diminished work performance average. These hours are multiplied by the hourly wage, in order to obtain amount per month, and then multiplied by 12 to estimate the annual amount.

### Reliability and validity

The instrument was initially validated by expert judgment. Twelve Peruvian experts on violence against women, from different institutions, analyzed the content of the scales and expressed their opinion about its structure and format suitability. Subsequently, the scales were subjected to an internal consistency analysis using Cronbach's Alpha value and construct validity through linear relationships using Principal Component Analysis.

Because it is very difficult to survey female workers while they are working, it was necessary to design short scales in order to get the information easily, but long enough to ensure minimum levels of reliability and validity. For internal consistency, the scales are reliable and within the acceptable values.

1. VAW scale has an acceptable value of internal consistency ( $\alpha = 0.71$ ), considering that just the most representative items of the original scales (CTS-2 and NVAWS) have been used to create short and quick instrument (6 items). Besides, the range of item-scale correlations with correction for attenuation is positive and with acceptable values ( $r = 0.262$  to  $0.577$ ), that indicates additivity between the items.
2. The scale of “consequences of violence against women” is also reliable ( $\alpha = 0.676$ ), with a range of item-scale correlation with a positive correction for attenuation ( $r = 0.154$  to  $0.520$ ).
3. The scale of absenteeism costs has a low internal consistency value ( $\alpha = 0.42$ ), however, this value is predictable because the items are mutually exclusive, since the reasons for missing work are different and one choice may exclude the others. Nevertheless, the item-scale correlation with correction for attenuation is positive and with an acceptable contribution ( $r =$  from  $0.194$  to  $0.335$ ). In addition, the four-week range required for the self-report of days lost, is within the reliable levels of recall (Mattke et al, 2007; Revicki et al, 1994).
4. The tardiness costs scale is reliable ( $\alpha = 0.656$ , range of item-scale correlation with correction for attenuation  $r = 0.395$  to  $0.532$ ).
5. Finally, presenteeism scale is reliable ( $\alpha = 0.785$ , range of item-scale correlation with correction for attenuation  $r = 0.313$  to  $0.724$ ), an identical value to original scale of Stewart et al (2003) and Work Limitations Questionnaire ( $\alpha = 0.78$  and  $0.7$  respectively). The subscale of diminished work performance has a highest internal consistency ( $\alpha = 0.816$ ) than zero-productivity ( $\alpha = 0.597$ ), that could be due to the number of items and the frequency of responses. Usually presenteeism scales are reliable in temporal stability (Demerouti et al, 2009).

The construct validity was done in two stages, first analyzing the factorial composition of the five scales items, then the relationship between them. Table 2 shows the structure of factor loadings of all items, what is 66.65% of the original data. The results confirm the internal validity of each scale.

- The first component, saturates 80% of the Presenteeism scale items (factor loadings between 0.555 and 0.824), the remaining 20% saturates with a small but positive value (0.206).
- The second component saturates 80% of VAW consequences scale items (factor loadings between 0.584 and 0.794).
- The fourth component saturates 100% of tardiness costs scale items (factor loadings between 0.617 and 0.836).
- The fifth and sixth component saturates 80% of VAW scale items. The fifth component saturates the economic, verbal and sexual violence items (factor loadings between 0.619 and 0.782), and the sixth component saturates physical violence and physical harm items (factor loadings between 0.471 and 0.808). The remaining 20% (physical violence using weapons) is also a positive factor loading (0.237) but low.
- The seventh and eighth components saturates 100% of absenteeism costs scale items, with a strong factor loadings (0.483 and 0.903), demonstrating its validity.



Table 2. Construct validity of violence and labor productivity scale items by Principal Component Analysis with Varimax Rotation with Kaiser (n=160)

	Component							
	1	2	3	4	5	6	7	8
Have had difficulty concentrating (last month)	,824							
Have been tired or exhausted at work (last month)	,821	,254						
Have worked more slowly than usual (last month)	,812							
Did not work despite being at work (last month)	,555		,420	,374				
Because of fights with your partner (or former partner) have lost concentration or diminished work performance		,794						
Because of fights with your partner (or former partner) have been late at work or missed business appointments		,657	,242		,238			
Because of fights / arguments with your partner (or former partner) have to stop working a few days		,648	,371			,228	,248	
Because of fights / arguments with your partner (or former partner) have received a reprimand or warnings of their boss	,256	,584						
Have to stop working (last month)	,206		,851					
Your current partner (or former partner) have attacked you with belts, sticks, sharp weapons or firearms			,716		,237			
Have arrived a half hour to an hour late (last month)				,836				
Have arrived more than an hour late (last month)				,812				
Have arrived half an hour late (last month)	,209			,617				,437
Your current partner (or former partner) have forced you to have sex without your consent			,250		,782			
Your current partner (or former partner) have appropriate / taken your salary or income					,756		,210	
Your current partner (or former partner) have threatened, insulted or verbally attacked you		,432			,619			
Your current partner (or former partner) have caused you physical damage (severe bruises, sprains, fractures, injuries, cuts) that require medical attention or rest for recovery						,808		
Because of fights with your partner (or former partner) have lost your job or been fired						,804	,215	
Your current partner (or former partner) have pushed, slapped, kicked, bitten or hold your arm in a strong grip		,208	,408		,218	,471	-,202	
Working days lost to address legal, financial or personal issues (last month)							,679	
Working days lost to take care of her or relative's health (last month)							,678	
Working days lost for other reasons (last month)					,411	,255	,483	
working days lost to attend their physical or mental health (last month)								,903
Eigenvalue	2,6232,265	2,002	1,996	1,976	1,743	1,505	1,220	
Explained variance (%)	11,4059,846	8,703	8,678	8,591	7,579	6,544	5,303	

Determinant of matrix = 0,001; KMO=0.68; X2Bartlett = 1126,362, gl =253, p<0.001  
 Source: Arístides Vara

Figure 1 presents the factor structure of the scales, representing 59.3% of the original data variance. As expected, the variables are grouped in two components, the first represents the labor productivity (tardiness, zero-productivity, diminished work performance and absenteeism) and the second represents VAW (Violence Against Women and self-reported employment consequences of VAW).

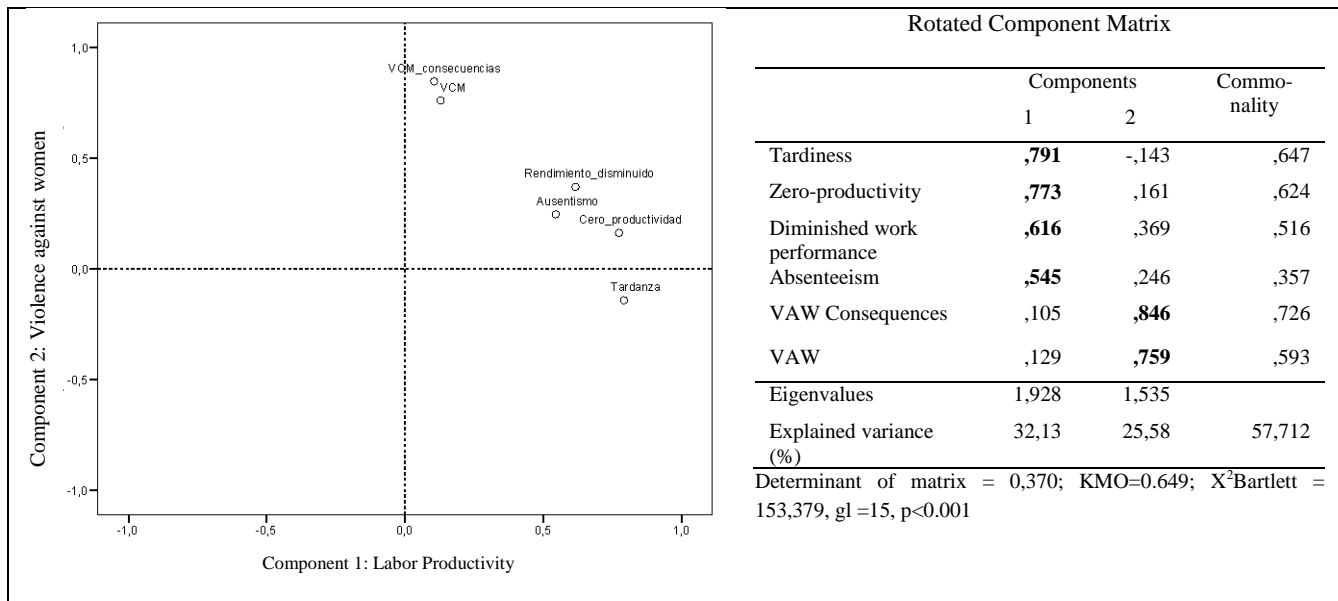


Figure 1. Construct validity of violence and labor productivity scales by Principal Component Analysis with Varimax Rotation with Kaiser (n = 162). Source: Arístides Vara

### Procedure and analysis

After coordination with the managers of the selected companies, female workers were surveyed during their working hours. The participation was voluntary, anonymous, and giving guarantees of data confidentiality. The female workers completed the questionnaires in an average of 20 minutes.

The data was tabulated and analyzed using SPSS 15 version. Costs were estimated using the algorithms presented in each instrument.

### Results

#### Prevalence and incidence of VAW

Regarding the prevalence of VAW according to the self-report of female workers, 23.1% have been victims of any kind of intimate partner violence or former partners, in the last 12 months and in an average of 5 times per year. Among all women who have suffered some kind of violence, in the last 12 months (current prevalence), 74.4% had been assaulted by their partners and 25.6% by their former partners. The psychological violence has been the most common aggression (19% insults and threats; 6.2% appropriate her incomes), followed by physical violence (8% attacks, 0.6% weapon attacks) and sexual abuse (4%).

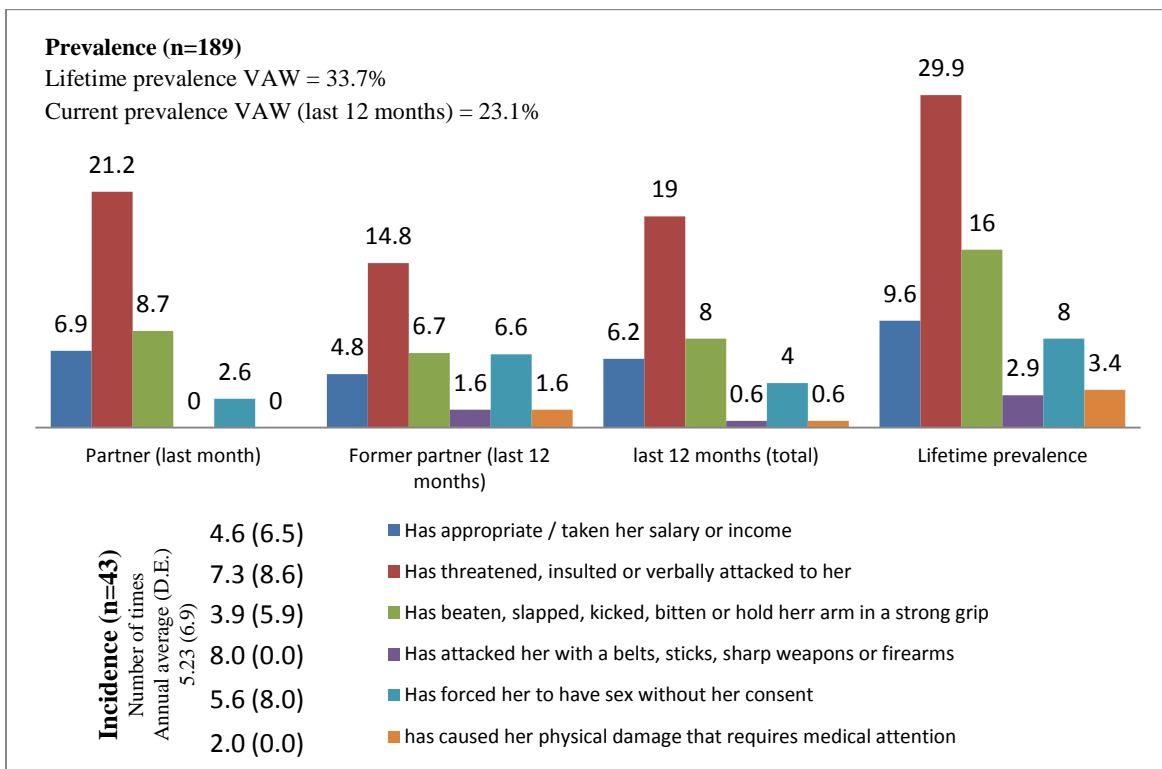


Figure 1. Prevalence of violence against women by their intimate partners or former partners, self-reported by female workers. Source: Arístides Vara.

Due to the sample characteristics, is possible to determinate the number of female workers who were/are victims of violence by their intimate partners or former partners in the past year. Approximately 45% of the economically active population in Lima Metropolitan are women and the 33.7% of these women are adequately employed .Adequately employed means that they have a steady-job, have above average incomes and work over 35 hours per week. This research only considers working women who are dependent and salaried; it means that works for a company under the conditions mentioned before (70% of women who are adequately employed). Considering the above-mentioned, and using VAW current prevalence (23.1%) as an indicator, there may be 143,347 working women who have suffered VAW at least once in the past year, in Lima.

Table 3. Projections of VAW magnitude in companies in Lima Metropolitan

Economically active women population who are employed (EAP) / a	1'994,500
Economically active women population who are adequately employed (EAP adequately employed) /b	886,500
Economically active women population who are adequately employed and dependent (70.1% of /b)	620,550
Current Prevalence of VAW (last 12 months) in female workers who are adequately employed and dependents	23.1%
Economically active female population who are adequately employed, dependent, and who suffers intimate partner violence, in the last 12 months	143,347

Note: Estimates obtained from the Permanent Survey of Employment for January-May 2012 period (INEI, 2012).

### VAW impact in ausentism and presentesim

There is a direct correlation between violence against women and self-reported employment consequences ( $r = 0.717, p < 0.001$ ). Due to violence, 56.4% have lost concentration at work, reducing their work performance. Another 38.2% have received reprimands or warnings from their chiefs or supervisors, 31.3% have been late or missed business appointments, the 26.8% have stopped working a few days and 9.1% have lost their jobs (been fired or resign).

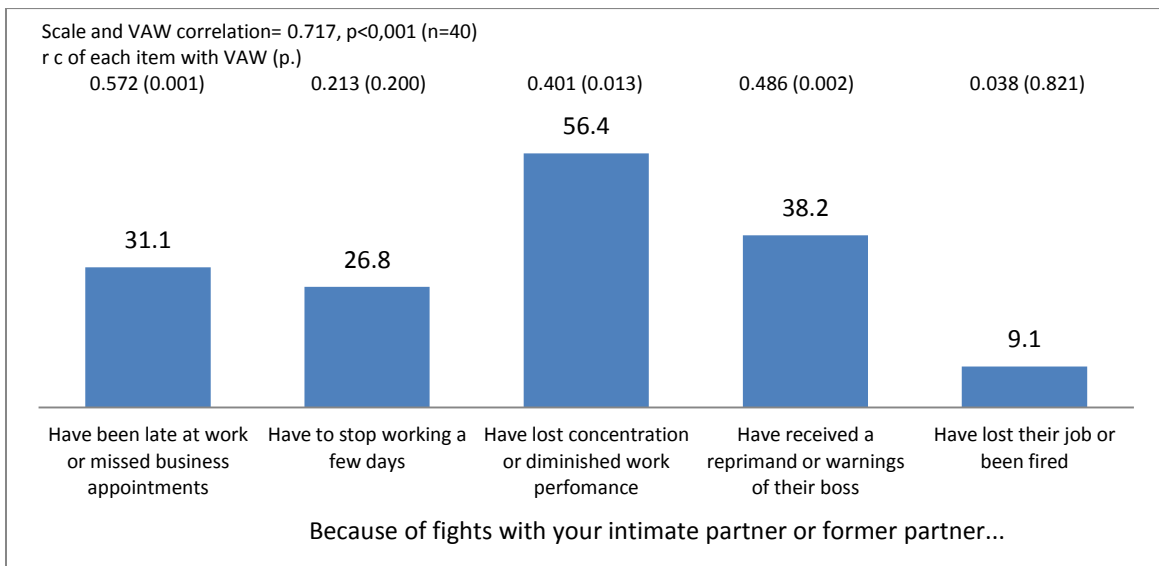


Figure 3. Employment consequences of VAW suffered in the past 12 months, self-reported by female workers (n = 43).

A significant impact of violence is estimated, when the percentage of women who missed work, were late or reduced her work performance (in the last four weeks), is compared with the women who have or have not suffered violence (in the past twelve months). While 30.5% of non-abused women have missed work, 46.9% of abused women have. In the cases of tardiness, the tendency is the same (25.75% versus 35.55%), also in diminished work performance (53.23% versus 65.73%) and zero-productivity (5% versus 11.1%).

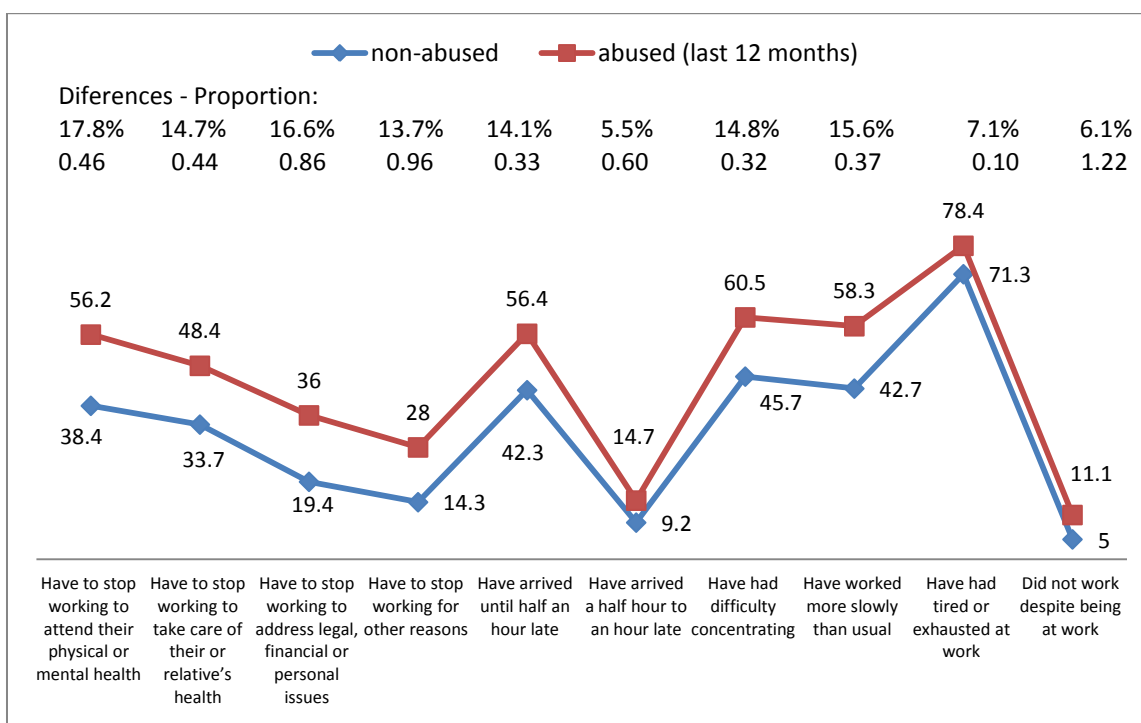


Figure 4. Percentage of female workers who have been affected in their work performance and absenteeism in the past four weeks, according to their intimate partner violence experiences, last 12 months (n = 189).

When the scale of intimate partner violence against women (scale based on the average of incidences) is correlated with the scales of annual costs of absenteeism and presenteeism, significant associations were found except tardiness costs. VAW is directly associated with absenteeism costs ( $r = 0.337$ ,  $p = 0.016$ ), diminished work performance ( $r = 0.468$ ,  $p = 0.002$ ) and zero-productivity ( $0.375$ ,  $p = 0.017$ ), but not with tardiness costs ( $r = -0.205$ ,  $p = 0.206$ ).

Only in Lima Metropolitan, and considering only female workers who are adequately employed, a minimum loss of 3 million 981 thousand 463 days per year is estimated. That means that annually, Lima lost 4 million working days caused by violence against women, where 63.9% comes from presenteeism and 36.1% from absenteeism.

Table 4. Days lost to absenteeism and presenteeism caused by intimate partner violence against women (average values per woman-year)

	Absenteeism	Zero-productivity (hours)	Diminished work performance (hours)
Abused women (n=40)	25.08	9.075 (77.64)	60.79 (486.32)
Non-abused women (n=139)	15.06	7.335 (58.68)	45.405 (363.24)
Time lost per woman-year, due to VAW	10.02	2.37 (18.96)	15.385 (123.08)
Working days lost due to VAW (year)*	1 436 336.94	339 732.39 (2 717 859.12)	2 205 393.595 (17 643 148.76)
Percentage loss in function of the total	36.1%	8.5%	55.4%
Total working days lost due to VAW (year)	3 million 981 thousand 463 days per year		

\* Estimated by multiplying the time lost due to VAW (woman-year) by 143,347 abused women, who are salaried female workers and adequately employed in Lima.

These working days lost to absenteeism and presenteeism, represents an annual cost of 180 million 791 thousand 418.8 dollars, just for Lima Metropolitan. Presenteeism costs are the highest percentage (61.8% of total lost).

Table 5. Absenteeism and presenteeism costs due to intimate partner violence against women (Peruvian nuevos soles and U.S dollars, without considering productivity factor)

	Absenteeism (U.S. dollars)	Zero-productivity (U.S. dollars)	Reduced performance (U.S. dollars)
Abused women (n=40)	2277.7 (860.5)	1188.3 (448.9)	4832.7 (1825.7)
Not abused women (n=139)	1003.8 (379.2)	608.9 (230.0)	3347.6 (1264.7)
Time lost per woman-year, due to VAW	1274.0 (481.3)	579.0 (218.9)	1485.0 (561.1)
Working days lost due to VAW (year)*	182 606 690 (68 992 851.53)	83 060 268.95 (31 379 021.14)	212 887 926.7 (80 426 115.1)
Percentage loss in function of the total	38,2%	17,4%	44,5%
Total costs of VAW(year)	Peruvian nuevos soles S/. 478 million 554 thousand 885.6 (USD \$ 180 million 791 thousand 418.8)		

\* Estimated by multiplying the time lost due to VAW (woman-year) by 143,347 abused women, who are salaried female workers and adequately employed in Lima

## Discussion and conclusions

These preliminary results are part of a national research made by University of San Martin de Porres and Sectorial Program of Gender “Fight against VAW in Latin America” of the German Development Cooperation/ GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit). The national research estimates the business costs of intimate partner violence against women, obtaining triangled information from the human resource managers, female workers, workers and secondary data from national samples. This report only includes information obtained from a representative sample of dependent female workers who are adequately employed, in Lima.

In an earlier report about VAW prevalence according to human resource managers (Vara-Horna, 2012), managers found that 1.78% of female workers were victims of violence, which is 11 thousand 46 cases in Lima Metropolitan. In this report, 23.1% of women surveyed said they were attacked by their intimate partners, by an average of five attacks per year, which is 143 thousand 347 cases. That means that for every case known by the human resource managers, 13 unknown cases of VAW will exist.

One out of 4 women is abused by her former partner, with a higher prevalence of extreme violence (sexual abuse, attack with objects, physical damage). These values are consistent with the data reported by Hotton (2001), where 28% of Canadian women have been attacked by their former partners, after a separation of five years, often with extreme violence. Other studies show that violence does not end when the relationship ends, but persists with attacks even worst and more frequent than the previously attacks. (Brownridge et al, 2006, 2008; DeKeseredy, Rogness & Schwartz, 2004; Thiara & Gill, 2012).

The literature provides abundant studies that demonstrate the pernicious effects of intimate partner violence against women, in the workforce. On a personal level, VAW restricts the development of work skills, produces permanent loss of work capacity due to layoffs, restricts occupational achievements, promotions; also it generates tardiness discounts and absenteeism. At a business level, all these individual consequences generates production costs, diminished work performance by “presenteeism” (reduced work capacity), causes loss of incomes, generates employee turnover and training

costs (Patel & Taylor, 2011; Franzway, 2008; O’Leary, Lean, Reeves & Randel, 2009; Brown, 2008; Soroptmist International of the Americas, 2011; Swanberg et al, 2005; Potter & Banyard, 2011; Lisboa et al, 2008).

This study found that intimate partner violence against women cause an average of 10 days of absenteeism per woman in a year, 2.37 days of zero-productivity at work and 15.38 days of diminished work performance per year. In total, there are about 28 working days lost per woman in a year; this value is close to 33.9 working days lost per abused woman in the United States (CDC, 2003; Arias & Corso, 2005; Karpeles, 2004).

Although absenteeism and presenteism costs due to violence were presented, it is important to note that these costs are severely undersized; because they are based on the wages of female workers and exclude the productivity factor, which could be four or five times more, depending on the industry and the strategic position of the female worker.

Although there are many reasons that explain the unjustified absenteeism of female workers; in this research VAW and its consequences, explains 39.95% of the total unjustified absenteeism. In Peru, Díaz & Miranda (2010), based on data from ENDES-2007, estimate that incomes of abused women are between 1,150 and 1,500 Peruvian nuevos soles less per year; with a higher impact in non-poor households. These values are similar to those estimated for absenteeism (1,274 Peruvian nuevos soles), considering that absenteeism is deducted from the female worker wage.

Excluding legal absenteeism due to maternity, Latin American studies found no significant difference in absenteeism rates between men and women (Abramo & Todaro, 2002). Absenteeism brings many problems for the company, depending on the strategic position of the female worker in the company and the company sector; because the consequences are higher in companies where human factor is more important (See Table 6).

Table 6. Problems caused by absenteeism in different levels of the organization

Occupational Category	Absenteeism Issues
Chief Executive Officer (CEO)	Strategic issues Delayed decision Inappropriate decisions by losing focus
General Managers	Coordination and control issues Delayed decision– management problems
Professional and technicians	Jobs reorganization Specific problems of production or service management and operational delay Reorganization of tasks
Administrative employees and sellers	Administrative and operative problems Problems to get customers, customer dissatisfaction Decreased efficiency in the process Administrative delays and reorganization of tasks Internal customer dissatisfaction
Highly skilled workers	Increasing cost due to temporary replacement or difficult replacement Reorganization of tasks, line imbalance, work overload
Low-skilled workers	Decreased process efficiency Decreased production

Source: Based on Abramo & Todaro, 2002.

Besides of absenteeism, there are some invisible costs that are not discounted; these are related to presenteism, which approximately represents two thirds of total costs. Previous studies on presenteism costs (e.g. Collins et al, 2005; Hemp, 2004; Allen, Hubbard & Sullivan, 2005; D’Abate & Eddy, 2007), show that these costs are higher than absenteeism

costs; which are consistent with the results. In this regard, the research conducted with managers (Vara-Horna, 2012) found that the main consequences of VAW recognized by the human resource managers in their companies are absenteeism (76.9%) and employee turnover (53.8%); whereas in this report, female women affirmed that the main consequence is the diminished work performance (56.4%).

No significant differences related to delays were found, although that tendency is higher in the group of female victims of violence. This lack of significant differences may be due to workplace policies in companies of Lima; these policies restrict lateness to few minutes, and if worker exceeds that time, will be considered an absenteeism day. In other words, the tardiness costs would be absorbed by absenteeism costs. These results are consistent with those obtained by the human resource managers (Vara-Horna, 2012), according to managers' reports, there is no significant difference in the tardiness frequency of female workers.

## Conclusion

1. 23.1% of female workers in Lima has suffered any kind of intimate partner violence in the past 12 months, by an average of 5 times per year, and one out of 4 female victims had been attacked by her former partner. Under these considerations, there may be companies in Lima that have 143 thousand 347 women who have suffered VAW, at least once the last year.
2. Violence against women causes significant employment consequences. Annually, Lima lost 4 million working days caused by violence against women, which represents a minimal loss of 180 million 791 thousand 418.8 American dollars, excluding the production factor and based only on wages.
3. Considering the total costs of absenteeism and presentism, the highest percentage of costs falls on presentism costs, with 61.8% of all losses.
4. No differences in tardiness costs by presence or absence of VAW were found, because the workplace policies in Lima restrict the tardiness and transferring to absenteeism.

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