The impact of intimate partner violence on forgone healthcare: a population-based, multicentre European study.

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Abstract

Background: To examine the relation between forgone healthcare and involvement in intimate partner violence (IPV) as victims, perpetrators or both.

Methods: This cross-sectional multicentre study assessed community non-institutionalized residents (n=3496, aged 18-64) randomly selected from six European cities: Athens, Budapest, London, Östersund, Porto, Stuttgart. A common questionnaire was used, including self-reports of IPV and forgone healthcare ("Have you been in need of a certain care service in the past year, but did not seek any help?"). Odds ratios (ORs), 95% confidence intervals (CIs) were computed fitting logistic regression models adjusted for city, chronic disease, self-assessed health status and financial strain.

Results: Participants experiencing past year IPV (vs. no violence) reported more often to forgone healthcare (n=3279, 18.6% vs. 15.3%, p=0.016). IPV experienced as both a victim and perpetrator was associated with forgone healthcare (adjusted OR, 95%CI: 1.32, 1.02-1.70). ~~A similar association was observed among victims only (1.30, 0.86-1.98).~~

Conclusion: IPV was associated with forgone healthcare, particularly for those experiencing violence as both victims and perpetrators. Results suggest that preventing IPV among adults may improve timely healthcare uptake.

Key words: Intimate Partner Violence, Europe, Multicentre study, Forgone Healthcare

Introduction

Financial barriers and a disadvantaged socioeconomic position have been identified among the most relevant determinants of forgoing healthcare (1, 2). However, adverse experiences might result in underutilization of needed health services and ultimately contribute to a poorer health. This might be the case of violence, in particular when occurring in intimate relationships (3). Most partners involved in violent acts sustain injuries that do not result in hospitalization or death, but might otherwise influence their health status (4). For different reasons, including feelings of shame (5) or fear of retaliation (6, 7), people involved in intimate partner violence (IPV) are likely to postpone care or to omit the potential cause of their signs or symptoms (7-10). In the World Health Organization (WHO) Study on Women's Health and Domestic Violence, that included 48 population-based surveys, most IPV victims did not seek for help or care (11). However, healthcare utilization questions were only posed to victims (7, 12), thus a comparison with the care seeking behaviours of women exposed to other forms of IPV or without this experience was not possible.

Forgoing or delaying healthcare can worsen prognosis, increase the risk of hospitalisation and of longer hospital stays (2, 13), decrease treatment adherence and diminish the quality of life (14). It is a relatively common situation mainly constrained by financial barriers that frequently affect children and disabled people.

Forgone mental healthcare was shown to be associated with female victimization (15) and with male perpetration of IPV (16) in the United States (US). Among female users of urban adolescent clinics in the US, IPV victimization was also associated with foregone care (17). In France, a population-based study conducted in a underprivileged area of Paris found a significant association between life-course experience of physical, sexual or psychological abuse and forgone healthcare (18). In Malawi, pregnant women involved in violence also frequently delayed initiation of antenatal care (19).

Violence might not only influence the decision of forgoing healthcare but also interact with other commonly described determinants of delaying care, broadening the health impact of IPV.

Much of the initial research on IPV was conducted with severely abused women and supported the assumption that IPV is primarily perpetrated by men against women. Data is mounting, however, suggesting that IPV is often perpetrated by both men and women against their partner (20, 21). It is also becoming recognized that perpetration of IPV by both partners within a relationship is fairly common. This phenomenon has been described with terms such as mutual violence, symmetrical violence, or reciprocal violence (22). Here we use the terms reciprocal or bidirectional to indicate IPV that is perpetrated by both partners in a given relationship. If intimate partner violence occurs as a result of escalating conflicts, bidirectional IPV should be more serious because it would indicate that both partners are engaging in the escalation of conflict. A large American study in young adults showed that, in fact, bidirectional IPV was associated with greater injury than was nonreciprocal IPV, regardless of the gender of the perpetrator (23), although it has also been related to less severe patterns of violence involvement (22, 24).

Testing if forgone healthcare is more or less frequent among victims, perpetrators or those experiencing IPV as both victims and perpetrators might highlight a particular pattern or profile of IPV experience that needs to be addressed by future prevention efforts, complementing the previous typical focus on supporting victims only.

The present study examines the relation between IPV and forgone healthcare considering three different partner violence groups: those experiencing IPV as victims; those experiencing IPV as perpetrators; and those experiencing IPV as both victims and perpetrators (bidirectional or reciprocal).

Methods

Study design and participants

The data presented in this study was collected as part of the DOVE project (http://doveproject.eu), a multicentre European project aiming to assess IPV frequency and health-related outcomes. A detailed description of the study design, methods and enrolled participants was published elsewhere (25). In brief, the target population consisted of non-

institutionalized adult men and women, aged 18-64, national citizens or documented migrants, living in eight cities: Ghent – Belgium, Stuttgart – Germany, Athens – Greece, Budapest – Hungary, Porto - Portugal, Granada – Spain, Östersund – Sweden and London – United Kingdom. Sites were selected based on previous research collaborations and expected to represent geographical and cultural diversity in Europe. To compare the prevalence of IPV across cities, a sample size of 544 participants was set for each centre, considering a 15% prevalence of IPV and a 3% relative precision. Samples were proportionally stratified by age and sex to represent the resident population, based on 2008 National Statistics Institutes. In Granada and Ghent, the aimed sample size was not achieved, thus we excluded participants from these sites in the current analysis.

Responding to local constraints, different sampling strategies were taken: in Stuttgart, random sample lists were obtained from the municipality registry; in Porto random lists were drawn from the electoral registry and random-digit-dialling of city landlines was performed; in London, random lists were obtained from electoral registry and a via-public approach in selected public spaces was conducted; in Östersund, the state person address registry was consulted; in Athens and Budapest, random route was used. Invitation letters with a concise description of the project were sent to participants selected based on registries and the study was presented by trained interviewers as part of the invitation procedure to participants contacted by telephone or at their houses. A common questionnaire was developed covering socio-demographic characteristics, intimate relationships, physical and mental health. Following ethical recommendations, the IPV section was self-administered in all centres and the remaining sections were preferably collected through face-to-face interviewing. However, in Östersund, all questionnaires were mailed to be self-completed and returned using a pre-paid envelope. This option was also considered in Stuttgart for the majority of evaluations (74.5%) and to a lesser extent in Porto (14.0%) and in London (3.5%). Signed informed consent was obtained from every participant that provided information by face-to-face interview. All centers followed the World Health Organization ethical and safety guidelines for the conduct of this type of research (26). A local Research Ethic Committee in each participating center approved the study protocol.

Intimate partner violence

The Revised Conflict Tactics Scales (CTS2) (27) was used to ascertain exposure to IPV. In this study three types of violence were considered: sexual coercion, physical assault and injury. Participants were asked about their involvement in specific acts of violence and classified according to violence directionality as victims, perpetrators or involved in violence as both victims and perpetrators during the past year.

Social and demographic characteristics

Gender, age, marital status education and financial strain were self-reported. Age was categorized in five-year groups (18-24, 25-34, 35-44, 45-54 and 55-64), marital status was categorized in four groups (as single, cohabiting, married and divorced/separated/widowed) and education as primary (level 0-1), secondary (level 2-4) and university (level 5-8) based in the levels of the International Standard Classification of Education (ISCED) (28).

Financial strain was characterized using the question "How often are you worried about the daily expenses (e.g. buying food): Never; Often; Quite Often; Always?". For analysis, participants were grouped in only three categories: never, often and always.

Forgone healthcare and health related variables

Forgoing healthcare was ascertained according to the answer (yes/no) to the following question "Have you been in need of a certain care service in the past year, but did not seek any help?".

Self-assessed health status was characterized using the question "In general, would you say your health is: Excellent; Very good; Good; Fair; Poor?" as presented in the Medical Outcomes survey Short-Form 36 (29). For analysis, we grouped participants into three categories: excellent and very good, good, or fair and poor.

Participants were presented a list of 12 chronic conditions, including asthma, chronic bronchitis, diabetes, digestive disorders, musculoskeletal diseases, cardiac pathology, severe depression or other mental illness, high blood pressure, stroke, migraine, epilepsy or fits. For analysis, we

defined a ‘chronic disease status’, from the further dichotomized response as ‘yes’ (at least one positive answer) or ‘no’.

Participants were also asked about their usual type of healthcare services provider, and divided as public or private sector clients.

The number of visits to an emergency department or a primary healthcare center during the previous 12-month period was recorded. For the analysis, answers were dichotomized as none or at least one visit to each type of health service.

Statistical analysis

A four-level variable was coded to account for violence, considering the presence of any act of violence regardless of the specific type (sexual coercion, physical assault or injury): absence of violence; victim of at least one act of violence; perpetrator of at least one act of violence; victim and perpetrator of at least one act of violence.

From the 3496 sampled participants, we analysed the reports of 3279 that had complete information about IPV and forgone healthcare. Missing information in the remaining covariates ranged from 0.1% to 8.0%.

The Chi-square test was used to compare the prevalence of forgone healthcare and of involvement in IPV according to city of residence, sex, age, marital status, education, financial strain, self-assessed health, type of health services provider, presence of a chronic disease, past year emergency department and primary healthcare centre utilization.

Logistic regression models were fitted to measure the association between forgoing healthcare and different exposure variables. Models used participants’ observations with valid values for all variables considered. Crude and adjusted odds ratios (OR) with respective 95% Confidence Intervals (95%CI) were calculated. Variables showing a significant bivariate association with forgone healthcare and with IPV were included as potential confounders in the multivariate model. Given the established evidenced linking financial barriers with forgone healthcare (30) and a disadvantaged socioeconomic position with IPV (11), financial strain was included in the final model.

A supplementary analysis was conducted, fitting logistic random effects models with forgone healthcare as the outcome. Interclass correlation coefficients (ICCs) and Median Odds Ratios were computed as measures of city-level variance in the outcome. A null model was fitted to analyze the city-level variance without considering intimate partner violence and additional models were fitted following the same adjustment strategy as described for the unconditional logistical regression models.

Results

Overall, 16.3% of participants declared to have forgone healthcare during the previous year. Participants involved in IPV significantly more often reported forgone healthcare (18.6% vs. 15.3%, p=0.016).

As shown in Table 1, forgone healthcare was more frequent among participants residing in Stuttgart (22.3%), Östersund (17.7%) and Porto (17.4%). Participants with a lower educational level, more financial strain, a poorer self-assessed health, living with chronic diseases and who visited an emergency department or primary care during the previous year, were significantly more likely to report forgoing healthcare.

Except for education, financial strain, type of health provider and utilization of healthcare, the prevalence of intimate partner violence was significantly different according to levels of the characteristic assessed (Table 2). Among participants who forgone healthcare, the proportions of victims-only, perpetrators-only or involved in IPV as both (any act of physical, sexual coercion or injury), were 6.0%, 9.1% and 21.5%, respectively. The proportion of victims-only was highest in London (7.4%) and lowest in Stuttgart (3.4%). IPV reports as both a victim and a perpetrator were highest in Stuttgart (29.7%) and lowest in Budapest (7.5%), while the proportion of perpetrators-only was highest in Athens (16.2%) and lowest in Porto (6.0%). A higher proportion of victims-only was observed among women (6.6%), while the proportion of participants experiencing both victimization and perpetration and perpetration-only were higher among men (18.0% and 12.3%, respectively). The proportions of the three types of violence involvement decreased with age and were higher in the absence of a chronic disease.

The prevalence of the three forms of IPV assessed (physical, sexual coercion and injury) were presented separately and disaggregated by sex, city and severity in a previous publication (31). Compared to participants not involved in IPV, those experiencing it as both victims and perpetrators in the previous year were 1.5 times more likely to declare forgone healthcare (Table 3). After adjustment for city of residence, sex, age, marital status, self-assessed health, presence of chronic diseases and financial strain, the association remained statistically significant (OR=1.32; 95%CI=1.02-1.70).

Discussion

The present study suggests that IPV has a role in the decision to forgone healthcare. The likelihood of reporting forgone healthcare is higher in those accumulating the experience of victimization and perpetration, showing a statistically significant association, independent of potential confounders such as city of residence, sex, age, marital status, the presence of chronic diseases, quality of self-assessed health or financial strain.

Study limitations must be addressed: the different sampling procedures taken in each city may be a source of selection bias, although previous analysis showed that within cities where two different strategies were used (Porto and London), different sampling procedures resulted in participants with similar characteristics (25). Previous analysis also revealed that the proportion of more educated people in the study sample was higher than in the population. This might have resulted in an underestimation of violence and of forgone healthcare, once more educated people can be expected to more easily overcome financial barriers and leave violent relationships (3). Since information was self-reported it can add ambiguity due to forgotten, undisclosed or socially desirable answers, especially expected when dealing with these sensitive and private issues. Although this is a subjective statement, it clearly indicates an important discomfort with the healthcare system, and it could also indicate a lost chance for improving the health status.
We did not consider detailed economic or psychosocial reasons as determinants of forgoing healthcare. Difficult events in childhood and financial difficulties in adulthood have been

associated with forgoing care (18, 32). A recent large Swiss study (30) showed that the question which was best associated with the risk of forgoing healthcare was ‘‘During the last 12 months, have you had trouble paying your household bills (taxes, insurance, telephone, electricity, credit cards, etc.)?’’ and compared to those who responded negatively, those who replied positively were 11 times more likely to have forgone healthcare. We used a similar question to measure material deprivation and it also presented a significant association with forgoing healthcare. However, the impact of IPV in forgoing healthcare was not affected by adjusting for financial strain. Nevertheless, issues of forgone care could provide an important link between health inequalities and healthcare provision.

We did not explore the presence of specific organizations and policies regarding IPV or guidelines in use within each national health system that might influence the decision to seek healthcare. However, the associations found remained statistically significant in city- and healthcare provider- adjusted models (result not shown), thus in favour of valid associations across health systems. Also, the fixed estimates (odds ratios) obtained through the logistic random effects models fitted, remained essentially unchanged. The inter-class correlation coefficients, as a measure of observed variation in forgone healthcare attributable to higher-level characteristics, varied from 3.95% in the null model to 7.77% in the fully adjusted model (supplementary material), which strengthens our results, since the variance of forgone healthcare attributable to city-level characteristics did not show a great variation.

Finally, the experience of both victimization and perpetration of IPV does not necessarily mean that the frequency or the severity of the violence is equal or similar between partners and the lack of such information make generalisations more cautious.

In our sample, the prevalence of forgone healthcare was 16.3% but varied significantly across cities, from 12.8% in Athens and Budapest to 22.3% in Stuttgart. The overall proportion was similar to that found in a population-based survey in Switzerland, where 14% of respondents reported forgone healthcare for economic reasons (2). In Östersund, we found a lower proportion of forgone healthcare (17.7%) compared to a 2001 Swedish national postal survey showing that

24% of citizens refrained from visiting a physician despite a perceived need during the previous three months (33). In 2000, nearly 24% of the French respondents to a representative annual survey of healthcare utilization stated that they had forgone healthcare at least once in their lifetime because they could not afford it, and 15% indicated they had done so in the year preceding the survey (34). The proportions vary markedly with age, gender and household size but also according to income levels, occupational status and welfare coverage, regardless of complementary health insurance supplementing basic national health coverage.

A study performed in five underprivileged areas of the Paris region during 2001 found a strong link between life-course experience of physical, sexual or psychological abuse and forgone care, although focusing on financial reasons (18). Since it used a single (yes/no) question to assess violence, it was unable to disentangle the effect of the victim or perpetrator condition. In our study, the association was only significant for those involved in the so called reciprocal or bidirectional IPV, as measured by the Revised Conflict Tactics Scales. There was an association with the victim role of similar magnitude but non-significant which could be the result of statistical power limitations.

Women victims of IPV are likely to refrain from seeking help (35), often undervaluing the severity of any symptom derived from their exposure and fearing consequences of their disclosure (14, 36). The findings of studies based on clinical samples and battered women's agencies showed that experiences of severe, life-threatening physical abuse frequently result in delayed help seeking (37). The US 2002 National Survey on Drug Use and Health data, was used in two separate studies to assess the relation of unmet need for mental healthcare with IPV victimization of women (15) and with IPV perpetration by men (16) and both found statistically significant associations with experiences of IPV representing increased likelihood of forgone mental healthcare. Even though we did not specify the type of healthcare forgone, if any (as opposed to focusing in mental health), our analysis suggests that such association is also present in the European general population.

In our study, we did not characterize the types of violence against partners making distinctions between common couple violence, violent resistance or mutual violent control (22), although, it

has been stated that most violence in general population samples is common couple violence, less likely to involve severe violence (38). By showing a link of bidirectional violence to forgone healthcare regardless of several potential confounders, even if mainly describing common couple violence, our results suggest that the bidirectional pattern in IPV might be, in fact, associated with harsher health consequences, here denoted by occasions where healthcare was needed but not sought.

While sound knowledge on major factors that characterize vulnerable populations is central to reduce barriers in the access to healthcare, our findings emphasise the need to include IPV amongst these concerns. Intimate partner violence is associated with a number of negative psychological and physical health consequences including posttraumatic stress disorder, depression, physical injury, reproductive health problems, irritable bowel syndrome, and chronic pain (3). They all point towards an increased need of professional guidance. Recognizing the role of IPV in delayed or forgone healthcare and increasing the opportunity to receive timely and preventive care may thus ultimately improve health outcomes and further help to stop violence.

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Conflict of interest

None declared.

Key points:

- Intimate Partner Violence (IPV) is a global major public health problem resulting in social and health adverse outcomes for women and men.

- Those experiencing both victimization and perpetration of IPV were more likely to forgone healthcare when in need.
- The relation between IPV and forgone healthcare was independent of city of residence, sex, age, marital status, chronic conditions, quality of self-assessed health and financial strain.

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Table 1. Social and demographic characteristics, health-related outcomes and any intimate partner violence involvement, by forgone healthcare.

		Forgone Healthcare		
		Yes	**No**	
		n (%)	**n (%)**	**p***
City of residence	Athens	69 (12.8)$_a$	469 (87.2)$_b$	<0.001
	Budapest	75 (12.8)$_a$	511 (87.2)$_b$	
	London	80 (15.7)$_b$	431 (84.3)$_b$	
	Östersund	97 (17.7)$_b$	450 (82.3)$_b$	
	Porto	104 (17.4)$_b$	495 (82.6)$_b$	
	Stuttgart	111 (22.3)$_a$	387 (77.7)$_b$	
Sex	Male	213 (15.6)$_a$	1152 (84.4)$_a$	0.356
	Female	323 (16.9)$_a$	1591 (83.1)$_a$	
Age	18-24	55 (14.9)$_a$	313 (85.1)$_a$	0.632
	25-34	111 (16.4)$_a$	564 (83.6)$_a$	
	35-44	126 (16.7)$_a$	628 (83.1)$_a$	
	45-54	126 (17.9)$_a$	579 (81.6)$_a$	
	55-64	118 (15.2)$_a$	659 (84.3)$_a$	
Marital Status	Single	141 (16.6)$_a$	708 (83.4)$_a$	0.341
	Cohabiting	81 (15.7)$_a$	436 (84.3)$_a$	
	Married	229 (15.6)$_a$	1241 (84.4)$_a$	
	Divorced, separated, widowed	84 (19.1)$_a$	355 (80.9)$_a$	
Education	University	197 (14.3)$_a$	1182 (85.7)$_b$	0.012
	Secondary	273 (17.4)$_b$	1300 (82.6)$_b$	
	Primary	50 (20.7)$_b$	192 (79.3)$_b$	
Financial strain	Never	131 (12.6)$_a$	905 (87.4)$_b$	<0.001
	Often	286 (17.0)$_b$	1393 (83.0)$_b$	
	Always	118 (21.4)$_a$	433 (78.6)$_b$	
Chronic diseases	None	129 (9.5)$_a$	1225 (90.5)$_b$	<0.001
	Any	407 (21.2)$_a$	1515 (78.8)$_b$	
Self-assessed Health	Excellent or very good	137 (9.5)$_a$	1302 (90.5)$_b$	<0.001
	Good	220 (18.1)$_a$	997 (81.9)$_b$	
	Fair or poor	178 (28.8)$_a$	440 (71.2)$_b$	
Healthcare provider	Public	444 (16.4)$_a$	2266 (83.6)$_a$	0.902
	Private	76 (16.0)$_a$	398 (84.0)$_a$	
Emergency department‡	Yes	119 (27.3)$_a$	317 (72.7)$_b$	<0.001
	No	361 (14.0)$_a$	2220 (86.0)$_b$	
Primary care‡	Yes	363 (20.3)$_a$	1425 (79.7)$_b$	<0.001
	No	151 (11.0)$_a$	1221 (89.0)$_b$	
Intimate Partner Violence¥	Yes	196 (18.6)$_a$	855 (81.4)$_b$	0.016
	No	340 (15.3)$_a$	1888 (84.7)$_b$	

*p=p-value from chi-square test;
†Chronic disease: asthma, chronic bronchitis, diabetes, digestive disorders, musculoskeletal diseases, cardiac pathology, severe depression or other mental illness, high blood pressure, stroke, migraine, epilepsy or fits;
‡At least one visit during the previous year;
¥Experience of any act of physical violence, sexual coercion or injury;
Total values differ due to missing information.
Subscript letters indicate the result of the z-test to compare column proportions using adjusted p-values (Bonferroni Method). Different subscript letters, indicate that the pair of values (column proportions) is significantly different.

Table 2. Social and demographic characteristics and health-related outcomes, by type of involvement in intimate partner violence (victims, perpetrators, bidirectional).

		Intimate Partner Violence				
		No	**Victims-only**	**Victims and perpetrators**	**Perpetrators-only**	
		n (%)	**n (%)**	**n (%)**	**n (%)**	**p***
City of residence	Athens	291 (54.1)$_a$	39 (7.2)$_b$	121 (22.5)$_b$	87 (16.2)$_b$	<0.001
	Budapest	441 (75.3)$_a$	34 (5.8)$_a$	44 (7.5)$_b$	67 (11.4)$_a$	
	London	330 (64.6)$_a$	38 (7.4)$_a$	85 (16.6)$_a$	58 (11.4)$_a$	
	Östersund	438 (80.1)$_a$	24 (4.4)$_{a,b}$	50 (9.1)$_b$	35 (6.4)$_b$	
	Porto	435 (72.6)$_a$	34 (5.7)$_{a,b}$	94 (15.7)$_{a,b}$	36 (6.0)$_b$	
	Stuttgart	293 (58.8)$_a$	17 (3.4)$_a$	148 (29.7)$_b$	40 (8.0)$_a$	
Sex	Male	892 (65.3)$_{a,b}$	59 (4.3)$_b$	246 (18.0)$_{a,c}$	168 (12.3)$_c$	<0.001
	Female	1336 (69.8)$_{a,b}$	127 (6.6)$_b$	296 (15.5)$_{a,c}$	155 (8.1)$_c$	
Age	18-24	206 (56.0)$_a$	30 (8.2)$_b$	77 (20.9)$_b$	55 (14.9)$_b$	<0.001
	25-34	401 (59.4)$_a$	51 (7.6)$_b$	148 (21.9)$_b$	75 (11.1)$_{a,b}$	
	35-44	502 (66.6)$_a$	40 (5.3)$_a$	131 (17.4)$_a$	81 (10.7)$_a$	
	45-54	500 (70.9)$_a$	32 (4.5)$_a$	107 (15.2)$_a$	66 (9.4)$_a$	
	55-64	619 (79.7)$_a$	33 (4.2)$_b$	79 (10.2)$_b$	46 (5.9)$_b$	
Marital Status	Single	532 (62.7)$_a$	58 (6.8)$_{a,b}$	161 (19.0)$_b$	98 (11.5)$_{a,b}$	0.002
	Cohabiting	350 (67.7)$_a$	29 (5.6)$_a$	75 (14.5)$_a$	63 (12.2)$_a$	
	Married	1020 (69.4)$_a$	77 (5.2)$_a$	249 (16.9)$_a$	124 (8.4)$_a$	
	Divorced/S/W†	323 (73.6)$_a$	22 (5.0)$_a$	56 (12.8)$_a$	38 (8.7)$_a$	
Education	University	950 (68.9)$_a$	75 (5.4)$_a$	232 (16.8)$_a$	122 (8.8)$_a$	0.251
	Secondary	1045 (66.4)$_a$	94 (6.0)$_a$	265 (16.8)$_a$	169 (10.7)$_a$	
	Primary	176 (72.7)$_a$	10 (4.1)$_a$	31 (12.8)$_a$	25 (10.3)$_a$	
Financial strain	Never	738 (71.2)$_a$	57 (5.5)$_a$	157 (15.2)$_a$	84 (8.1)$_a$	0.126
	Often	1109 (66.1)$_a$	95 (5.7)$_a$	291 (17.3)$_a$	184 (11.0)$_a$	
	Always	371 (67.3)$_a$	34 (6.2)$_a$	91 (16.5)$_a$	55 (10.0)$_a$	
Chronic diseases‡	None	874 (64.5)$_a$	92 (6.8)$_b$	234 (17.3)$_{a,b}$	154 (11.4)$_b$	0.002
	Any	1351 (70.3)$_a$	94 (4.9)$_b$	308 (16.0)$_{a,b}$	169 (8.8)$_b$	
Self-assessed Health	Excellent or very good	965 (67.1)$_a$	101 (7.0)$_b$	228 (15.8)$_a$	145 (10.1)$_{a,b}$	0.028
	Good	817 (67.1)$_{a,b}$	56 (4.6)$_b$	222 (18.2)$_a$	122 (10.0)$_{a,b}$	
	Fair or poor	443 (71.7)$_a$	29 (4.7)$_a$	90 (14.6)$_a$	56 (9.1)$_a$	
Healthcare provider	Public	1846 (68.1)$_a$	150 (5.5)$_a$	434 (16.0)$_a$	280 (10.3)$_a$	0.087
	Private	310 (65.4)$_a$	34 (7.2)$_a$	91 (19.2)$_a$	39 (8.2)$_a$	
Emergency department¥	Yes	287 (65.8)$_a$	21 (4.8)$_a$	83 (19.0)$_a$	45 (10.3)$_a$	0.426
	No	1741 (67.5)$_a$	157 (6.1)$_a$	422 (16.4)$_a$	261 (10.1)$_a$	
Primary care¥	Yes	1233 (69.0)$_a$	92 (5.1)$_a$	289 (16.2)$_a$	174 (9.7)$_a$	0.166
	No	899 (65.5)$_a$	89 (6.5)$_a$	241 (17.6)$_a$	143 (10.4)$_a$	
Forgone Healthcare	Yes	340 (63.4)$_a$	32 (6.0)$_{a,b}$	115 (21.5)$_b$	49 (9.1)$_{a,b}$	0.008
	No	1888 (68.8)$_a$	154 (5.6)$_{a,b}$	427 (15.6)$_b$	274 (10.0)$_{a,b}$	

*p=p-value from chi-square test;
†Divorced/S/W=Divorced, separated, widowed;
‡Chronic disease: asthma, chronic bronchitis, diabetes, digestive disorders, musculoskeletal diseases, cardiac pathology, severe depression or other mental illness, high blood pressure, stroke, migraine, epilepsy or fits;
¥At least one visit during the previous year;
Total values differ due to missing information.
Subscript letters indicate the result of the z-test to compare column proportions using adjusted p-values (Bonferroni Method). Different subscript letters, indicate that the pair of values (column proportions) is significantly different.

Table 3. Association of intimate partner violence and forgone healthcare in victims, perpetrators and in participants involved as both victims and perpetrators.

		n	OR† (95%CI‡)	n	AOR¥ (95%CI)	n	AOR§ (95%CI)
IPV*	No	2228	1.00	2219	1.00	2209	1.00
	Victims-only	186	1.15 (0.78-1.72)	186	1.32 (0.87-2.01)	186	1.30 (0.86-1.98)
	Victims and Perpetrators	542	1.50 (1.18-1.89)	539	1.34 (1.04-1.73)	536	1.32 (1.02-1.70)
	Perpetrators-only	323	0.99 (0.72-1.38)	323	0.99 (0.70-1.39)	323	0.96 (0.68-1.35)

*IPV= Intimate partner violence;
†OR= Odds ratio;
‡95%CI=95% Confidence intervals;
¥AOR= Adjusted odds ratio for city of residence, sex, age, marital status, presence of chronic disease and self-assessed health status;
§Further adjusted for financial strain.