

and gained confidence in their skating ability, they still have a substantial risk for injury and should continue to adhere to fundamental safety principles. More important, the performance of tricks while skating places a skater at significantly higher risk for injury, regardless of the skater's experience level. Targeting and educating more experienced skaters in safe skating campaign messages may assist in lowering rates of injury due to in-line skating. □

Contributors

Richard Seldes designed and planned the study, analyzed the data, oversaw and conducted the standardized interviews, and wrote the paper. Jeff Pavell, Virak Tan, and Brock Bowman contributed to the design and planning of the study, analyzed the data, conducted the standardized interviews, and contributed to the writing of the paper. Jeane Grisso, Jesse Berlin, and Judith Kinman designed and planned the statistical analysis and contributed to the writing of the paper. Robert Fitzgerald contributed to the planning of the study, analysis of the data, and

writing of the paper. All authors are guarantors for the integrity of the research.

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Wife Abuse Among Women of Childbearing Age in Nicaragua

Mary Carroll Ellsberg, MPH, Rodolfo Peña, MD, MPH, Andrés Herrera, MD, Jerker Liljestrand, MD, PhD, and Anna Winkvist, PhD

ABSTRACT

Objectives. This study measured the prevalence, frequency, and severity of physical wife abuse and its risk factors in León, Nicaragua.

Methods. A cross-sectional survey was conducted with a representative sample of 488 women 15 to 49 years of age.

Results. The lifetime prevalence of spousal violence was 52% among ever-married women (n = 360). Spousal violence was significantly positively associated with poverty, parity, urban residence, and history of violence in the husband's family. No significant associations were found between spousal violence and women's age, education, marital dependency, or occupation.

Conclusions. Wife abuse constitutes a major public health problem in Nicaragua, requiring urgent measures for prevention and treatment for victims. (*Am J Public Health*. 1999;89: 241–244)

Wife abuse is increasingly recognized as a global public health concern.¹ Although reliable prevalence data are scarce, it is estimated that between 20% and 50% of women in most countries have experienced physical violence from an intimate partner.^{2–6} Wife abuse has been associated with a variety of adverse health outcomes for women and children, including trauma,^{7,8} low birthweight,^{9,10} gynecological disorders,¹¹ depression,^{12,13} suicide,¹⁴ and sexually transmitted diseases.¹⁵ Few studies have found significant risk factors among women for wife abuse,^{16,17} although some risk factors have been consistently associated with violent men, such as witnessing violence as a child, poverty, stress, alcohol use, and cultural norms that discriminate against women.^{16,18–20} Awareness regarding wife abuse has increased greatly in Nicaragua, in part as a result of the growing number of nongovernmental organizations providing health, legal, and psychological services for battered women, as well as advocacy to improve laws and public policy with regard to domestic violence.^{21,22} Although the reported incidence of wife abuse has increased,²³ it is unknown, in the absence of

population-based data, whether this reflects an actual increase or improved reporting.

Methods

This article presents the results of the first population-based survey carried out in Nicaragua on wife abuse. The study aimed to

Mary Carroll Ellsberg is with the Department of Epidemiology and Public Health, Umeå University, Umeå, Sweden, and the Department of Preventive Medicine, Autonomous University of Nicaragua, León. She is also with the Center for Health and Gender Equity, Takoma Park, Md. Rodolfo Peña and Anna Winkvist are with the Department of Epidemiology and Public Health, Umeå University. Rodolfo Peña is also with the Department of Preventive Medicine, Autonomous University of Nicaragua. Andrés Herrera is with the Department of Preventive Medicine, Autonomous University of Nicaragua. Jerker Liljestrand is with the Department of Reproductive Health and Research, World Health Organization, Geneva, Switzerland.

Requests for reprints should be sent to Mary Carroll Ellsberg, MPH, Center for Health and Gender Equity, 6930 Carroll Ave, Suite 910, Takoma Park, MD 20912 (e-mail: mellsberg@genderhealth.org).

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measure the prevalence, frequency, and severity of physical abuse of women by current or former intimate partners and to identify associated risk factors. A cross-sectional survey was performed in León, Nicaragua's second largest city (population: 195 000). A representative cluster sample of 10 867 women 15 to 49 years old developed in 1993 for a household survey on reproductive and child health^{24,25} was used to obtain a subsample of 566 women. Of these women, 488 were located and interviewed. No women refused to be interviewed.

Prevalence and severity of violence, as well as frequency during the previous 12 months, were measured with the physical aggression scale of the Conflict Tactics Scale. The Conflict Tactics Scale, which has been used extensively to measure physical spousal violence and is considered to have high reliability and construct validity,²⁶⁻²⁹ lists 8 acts ranked according to severity. Pushing, slapping, and throwing objects are classified as moderate violence, while kicking/hitting with a fist, blows with an object, "beating up," and threats or use of a knife or gun are classified as severe violence. Wife abuse was defined as the experience of one or more acts of physical violence at any time from a current or former male intimate partner. Current violence was defined as acts taking place within the 12 months prior to the interview.

A questionnaire was used to collect information about education and family background for women and their current or former spouses. Socioeconomic status was measured via the basic needs assessment, a method that has been adapted and used widely in Nicaragua to measure household access to adequate sanitary, educational, and economic conditions.^{25,30} Poverty was defined as the absence of one or more of these basic needs.

All interviews were carried out in complete privacy by trained female interviewers between April and June 1995, with special measures taken to protect the safety of both informants and interviewers. An educational pamphlet on domestic violence and referrals for free counseling were offered to all informants. Random repeat interviews and logical data controls were performed to control data quality.

Data were analyzed with Epi Info 6.02 (for univariate analysis) (Centers for Disease Control and Prevention, Atlanta, Ga) and SPSS 7.0 (for multivariate analysis) (Version 7.0, SPSS Inc, Chicago, Ill). Initial results of the survey were discussed in focus groups with local women activists and field workers to help interpret the data. Informed consent was obtained from all participants, and ethical

TABLE 1—Description of Total Sample and Women Who Had Been in a Formal Marriage or Common-Law Union at Any Point in Their Lives: León, Nicaragua, 1995

Variable	Total Sample (n = 488), %	Ever-Married Women (n = 360), %
Education		
No schooling	8	9
Primary	39	45
Secondary or more	53	46
Poverty status		
Nonpoor	21	20
Poor	79	80
Zone		
Rural	18	18
Urban	82	82
Age, y		
15-19	23	9
20-29	37	39
30-39	26	34
40-49	14	19
Current marital status		
Married/common law	57	78
Single/separated/divorced	43	23
Family history of abuse		
Wife's mother not abused	43	40
Wife's mother abused	57	60
Husband's mother not abused	61	57
Husband's mother abused	39	43

clearance for the study was received from Nicaraguan university authorities.

Results

Prevalence, Frequency, and Severity of Violence

Characteristics of the respondents are given in Table 1 for the overall sample and for the subsample of 360 ever-married women. The characteristics of the women with regard to educational attainment, poverty, age groups, and current marital status were similar to national figures.³¹

Of the overall sample, 40% (n = 194) reported having experienced physical violence by a current or former partner at some point in their lives (95% confidence interval [CI] = 35%, 44%). Thereafter, women who had been married or in a common-law relationship at least once in their lives (n = 360) were analyzed separately from women who had dated but never cohabited (i.e., who had never been exposed to the risk of intimate partner abuse; n = 79). The lifetime prevalence of violence varied from 8% among dating women (95% CI = 3%, 15%) to 52% (95% CI = 47%, 57%) among ever-married women of childbearing age. Given the wide disparity between the 2 groups, only the first was included in further analyses of risk factors for spousal violence.

Among ever-married women, 27% (n = 97) reported violence within the previous 12 months. Seventy percent of both current and former violence was classified as severe. Among women reporting current violence, those reporting moderate levels described less frequency of violence, while those reporting severe levels described a greater frequency of violence ($P < .02$). Sixty percent of women abused within the previous 12 months had experienced more than 1 violent event, while 20% had experienced severe violence more than 6 times during the previous year.

Associations Between Background Factors and Wife Abuse

Wife abuse was significantly positively associated, at the univariate level, with being poor, having more than 4 children, and a history of domestic violence in either the wife's or the husband's family (Table 2). No significant associations were found at the univariate level between risk of violence and urban/rural zone, age, current marital status, occupational category, or educational attainment of women. Also, no significant association was found between the risk of abuse and either the husband's educational attainment or indicators of marital dependence (negative differentials in age or education or number of children under 7 years of age). Finally, at the univariate level, no difference was found

TABLE 2—Association Between Background Factors and Prevalence of Violence Among Women Aged 15 to 49 Years Who Had Ever Been Married^a (n = 360): León, Nicaragua, 1995

Variable	Univariate OR (95% CI)	Multivariate OR (95% CI) ^b
Poverty		
Nonpoor	1.00 . . .	1.00 . . .
Poor	1.91 (1.12, 3.23)	1.82 (1.03, 3.23)
Zone		
Rural	1.00 . . .	1.00 . . .
Urban	1.62 (0.94, 2.78)	2.07 (1.12, 3.82)
No. of children		
0-1	1.00 . . .	1.00 . . .
2-3	1.40 (0.82, 2.39)	1.34 (0.74, 2.43)
≥4	2.77 (1.59, 4.82)	2.23 (1.21, 4.15)
Family history of abuse		
No history in wife's family	1.00 . . .	1.00 . . .
Wife's mother abused	1.80 (1.24, 2.90)	1.28 (0.79, 2.09)
No history in husband's family	1.00 . . .	1.00 . . .
Husband's mother abused	3.13 (2.00, 4.96)	2.98 (1.86, 4.73)

Note. OR = odds ratio; CI = confidence interval. ORs were calculated with logistic regression analysis.

^aIncludes common-law marriages.

^bLikelihood ratio statistic on 8 df = 44.425, $P < .001$.

in the strength of the associations between background factors and violence when violence was stratified according to severity and currency of abuse.

At the multivariate level, significant associations were maintained between risk of violence and poverty, parity, and a history of marital violence in the husband's family, even after adjustment for the woman's age and education. Women residing in the rural area were found to have a lower risk of violence than those residing in the urban area, while the association between violence and abuse of the wife's mother became non-significant. No significant interactions were found among the independent variables in their effects on risk of violence.

Discussion

According to our results, one half of ever-married women of childbearing age in León had experienced physical violence from a partner at some point in their lives, and 1 out of 5 women had been severely beaten within the last year. These figures are comparable with or even higher than data from other countries.³⁻⁶

It is unlikely that violence was overreported, as a result of the detailed and complex nature of the information gathered; however, numerous studies have indicated that women tend to minimize episodes of violence for a variety of reasons, including self-blame, fear, and a desire to protect the abuser.³ Therefore, it is possible that the figures are somewhat underreported.

Sample size may account for the lack of association found between violence and some background variables. The findings with regard to women's education and occupation are consistent with international research indicating that wife abuse crosses social and economic boundaries.^{16,20} The lack of variation with regard to the woman's age is more intriguing, since it might be expected that older women could have experienced a higher frequency of violence. This may be explained by an early onset of violence in the relationship. The large difference in the prevalence of dating violence and spousal violence suggests that in Nicaragua a cohabiting relationship greatly increases the risk of physical abuse.

As a result of the cross-sectional study design, it is not possible to infer a causal relation between parity and risk of violence. However, the lack of association between age and abuse suggests that violence begins before many women have started bearing children. Thus, this association is probably due to reverse causality, implying that wife abuse may often be accompanied by sexual coercion or increased control over women's reproduction and use of contraceptive methods.

The associations found between violence and poverty are consistent with international research.^{19,20} However, it is unknown whether this association and that between violence and urban/rural zone are due to actual variations or whether they simply reflect a greater reluctance of both rural women and women of higher socioeconomic status to disclose violence. The association found between violence and a history of vio-

lence in the husband's family is consistent with research in other countries suggesting that violent behavior may be learned from childhood experiences.^{6,32}

We conclude that wife abuse represents a significant public health concern in Nicaragua, in terms of its high prevalence as well as the frequency and severity of abuse, and that Nicaraguan women experience similar risks for spousal abuse, regardless of age and educational background. Therefore, interventions within the health sector, including screening and caring for battered women and children, are urgently needed. □

Contributors

Mary Carroll Ellsberg planned the study, field work, and data analysis and drafted and finalized the paper. Rodolfo Peña participated in all stages of planning, analysis, and writing. Andrés Herrera participated in study design, field work, and interpretation of findings. Jerker Liljestrand and Anna Winkvist supervised and contributed to all stages of study design, analysis, and writing of the paper. All 5 authors are guarantors for the integrity of the research.

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The Influence of Race on Approaching Families for Organ Donation and Their Decision to Donate

Edward Guadagnoli, PhD, Patrick McNamara, PhD, Michael J. Evanisko, MA, MPhil, Carol Beasley, MPPM, Clive O. Callender, MD, and Andrea Poretzky, BA

ABSTRACT

Objectives. This study examined whether patients' race was associated with their families' being approached for organ donation and agreeing to donation.

Methods. Logistic regression models were applied to data collected from records at 112 hospitals.

Results. The odds that a family of a White patient was approached for donation were nearly twice those for a family of an African American. The odds of donation also differed by race, but the magnitude varied by patient and hospital characteristics.

Conclusions. Much attention directed toward racial disparity in donation has focused on attitudes of the public. The behavior of hospital staff also may be related to differences in rates. (*Am J Public Health*. 1999;89:244-247)

African Americans with end-stage organ failure wait longer than Whites for organ transplants and are less likely to receive transplants.¹⁻⁵ Despite a shortage of organs, the number of patients who are medically suitable for donation is much greater than the actual number of patients who donate.⁶⁻⁸ In order to devise strategies to increase donation among African Americans, we need to understand better whether the process of donation in hospitals differs for Whites and African Americans.

We used data from several regions of the United States to examine whether the likelihood of a family member's being approached for donation differed by race of the patient. In addition, we assessed whether the likelihood of agreeing to donate differed by race.

Methods

Patients

We studied White and African American patients who died between 1990 and 1993 at 112 hospitals located in 7 regions

Edward Guadagnoli is with the Department of Health Care Policy, Harvard Medical School, Boston, Mass. Patrick McNamara, Michael J. Evanisko, Carol Beasley, and Andrea Poretzky are with the Partnership for Organ Donation, Boston, Mass. Clive O. Callender is with the Department of Surgery, Howard University College of Medicine, Washington, DC.

Correspondence and requests for reprints should be sent to Edward Guadagnoli, PhD, Department of Health Care Policy, Harvard Medical School, 180 Longwood Ave, Boston, MA 02115-5899.

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