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Physical Dating Victimization Among Female College Students in Chile: Prevalence and Risk Factors

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INTRODUCTION

Several recent studies have examined the high levels of intimate partner violence that afflict women in Chile (Larrain 1994; McWhirter1999; Bacigalupe 2000; Bangdiwala et al. 2004; Hassaan et al. 2004). The research to date has focused primarily on women in cohabiting and marital unions, with the exception of a recent study which included also incidents of dating violence (Urzua et al. 2002). A better understanding of gender violence among youth is important both *per se* and because victimization in the young adult years can be a precursor to more severe victimization later in the context of cohabitation or marriage; moreover, the psychological consequences of abuse can be long lasting (Makepeace 1981; O'Keefe et al 1986; White & Koss 1991; Lewis and Fremouw 2001). No quantitative studies on this subject have been conducted to date on the college population in Chile and at present, campuses across the country lack systematized programs to prevent this type of violence or help victims.

Designed to begin to address this void in the literature, an extensive questionnaire, the Survey of Student Well-Being, was administered to male and female students enrolled at a large public university located in Santiago, Chile, during the Winter term of 2005. The survey instrument contains detailed questions on physical, psychological, and sexual victimization, along with items on socioeconomic and demographic variables, and on two experiences with aggression during childhood, namely, witnessing domestic violence and suffering sexual abuse.

Findings from the U.S. show that dating violence is often reciprocal (O'Keefe 1997; Gray & Foshee 1997); some studies indicate that males and females have similar rates of initiating violence (O'Keefe et al. 1986; White & Koss 1991**)** while others report

that the latter actually perpetrate more violence (Lane & Gwartney-Gibbs 1985; Clark et al. 1994; Foshee 1996). However, in part because of men's greater strength and average size, their violent acts are more likely to result in physical injuries and to have serious psychological repercussions (Stets 1990; Foshee 1996). Consistent with these findings, analyses of the present Chilean data showed that the male students had higher physical victimization rates than their female counterparts, but that women suffered more incidents resulting in physical injuries; in addition, cross-tabulation analyses revealed marked differences by sex in the correlates of victimization, indicating that the common practice of pooling the male and female samples is inappropriate (Authors 2006, unpublished data).

The present study focuses on violence inflicted on women and reports the first estimates of the prevalence of physical dating violence among female college students in Chile. The study also examines risk factors for such victimization, considering two main domains of young women's lives: (a) their socioeconomic and demographic characteristics; and (b) early experiences with violence within the family of origin.

METHODS

Study Design

The survey, a closed-ended questionnaire, was drafted in English by the lead author and then translated to Spanish by the third author who is a native Chilean Spanish speaker. Back-translation to English was conducted to ensure accurate translation. The questionnaire draws heavily on scales that have been used widely and validated in the U.S.; items were adapted to the Chilean context. Professors and students at the university

reviewed the instrument for wording and cultural appropriateness of items; revisions were made based on their comments. The second author conducted the field work in Santiago.

One of the largest in the country, the university is a selective public institution with a diverse student body. Institutional Review Board approval was obtained from the Ethics Committee for Research on Human Subjects at the university. Students provided written consent prior to completing the survey.

All 24 classes that comprised the university's required general education offerings in Winter 2005 were surveyed. The convenience sample thus obtained encompassed male and female students enrolled in the various educational programs offered by the university. Total enrollment in these classes was 2,451, with some students registered in more than one course. At the time of questionnaire administration, a total of 1,193 students were present in the 24 classes combined, reflecting the typical attendance rate; 974 students returned completed questionnaires, yielding an 82% overall response rate. Students were instructed not to respond to the survey again if they had already completed it in another class and this accounts for some of the non-responses, i.e., the "true" response rate was higher than 82%.

At the beginning of the class period, the survey administrator made a presentation to the students about the nature and importance of the survey, and emphasized that all responses would be anonymous. Students were told to deposit their completed, unsigned surveys in a box at the front of the room. The professor was not present during survey administration.

Sample

The last survey item inquired into the honesty of the answers submitted. Two students admitted giving non-honest responses and these cases were eliminated, along with two cases in which the responses indicated that the survey had not been taken seriously; 16 cases in which no answer was provided to the question on student's sex were also dropped. The resulting sample consisted of 484 women and 466 men. The present study utilizes the female sample. After omitting observations corresponding to students who had never had a date or dating relationship since age 14 or had missing information on physical dating violence, the sample size was 441.

Measures

Dependent Variable. For two time frames (the past 12 months and ever since age 14), one of the survey items asked the following question: "How many times has any person with whom you have had a romantic relationship or gone out with on a date done one of the following the things to you? If it ever happened that your partner did something in self-defense, in response to something you initiated, exclude those cases." The specific items, listed in Figure 1, Panel A, were adapted from the Conflict Tactics Scale (Straus 1979). The categorization into mild, moderate, and severe violence is based on Foshee's (1996) analysis of the rate of injury associated with various types of aggression. (Items were not grouped into categories in the questionnaire.) Information on injuries was obtained by asking, for the same time frames, whether any of the outcomes listed in Figure 1, Panel B had ever resulted from a fight with a dating partner.

Physical victimization was operationalized in the analyses of correlates as a trichotomous variable constructed with information on incidents of physical violence and resulting injuries, if any, since age 14. The three mutually exclusive categories indicated that the student (a) had never been victimized; (b) had experienced at least one incident of violence but never suffered physical injuries; and (c) had experienced at least one incident severe enough to result in physical injuries.

Independent Variables. Variables measuring demographic and socioeconomic characteristics are described first, followed by the two available measures of aggression in the family of origin.

Age ≥ 21: equals 1 if the student was 21 years of age or older at the time of the survey.

Low parental education: equals 1 if the parent who had attained the highest level of schooling had twelve years of regular schooling or less, or incomplete advanced technical schooling or less.

Maternal employment: equals 1 if the student's mother worked outside of the home when the student was 14 years old.

No attendance to religious services: equals if the student never attended religious services at age 14.

Big city: equals 1if the student resided in Santiago or another large metropolitan area at age 14.

Residence with parents: equals 1 if the student had primarily resided in the parental home since enrolling in college.

Ever had sex: equals 1 if the student had ever had voluntary sexual intercourse as of the survey date.

Witnessed domestic violence: equals 1 if before age 14 the student had ever witnessed violence between her parents or other people who raised her.

Childhood sexual abuse: equals 1 if the student responded affirmatively to at least one of the following questions: "Before age 14, did someone ever make you have sex against your will?" and "Before age 14, did you ever have any other form of unwanted sexual experience, such as forced kisses, grabbing, etc. ?"

Statistical Analysis

We first computed means for the independent variables. The few instances of missing data for the independent variables were addressed by imputing the modal category, so as to minimize loss of information in this relatively small sample. We then generated descriptive statistics regarding the prevalence of physical victimization, as well as characteristics of the most severe incident reported per subject.

Finally, we used generalized ordered logit models to assess risk factors for victimization since age 14, using GOLOGIT2 by Williams (2006) in STATA version 9.2 This procedure utilizes information on the order of the three categories, i.e., that an incident of aggression resulting in physical injury is a more severe form of violence than one not involving injury; the model allows the proportional odds assumption (i.e., that the odds ratio is constant for all categories) to be relaxed for variables that fail to meet it.

RESULTS

Sample Descriptive Statistics

Table 1 presents descriptive statistics for the independent variables. The students ranged from 18 to 30 years of age; only 37.4% were 21 years old or older, reflecting the tendency of students to take their general education courses early on; 62.1% of the sample was composed of students in their first or second year. Low parental education, the best indicator of SES in these data, characterized about three-tenths of the students; 60.5% had mothers who worked outside of the home when they were 14 years of age; 24.0% reported no attendance to religious activities at this age; 64.9% had ever had voluntary sex by the time of the survey. Religion and sexual debut were correlated: among students who did not attend religious services at age 14, 75.5% had initiated sexual activity, compared to 61.5% of those who did (χ^2 test, $P<0.01$).

It is customary in Santiago for young people to remain in the parental home during the college years; exceptions tend to be students who come from other parts of the country or whose families are wealthy. Consistent with this, 78.5% of the students had primarily resided with their parents since enrolling in the university; among such students, 91.0% had grown up in a large urban area and 32.4% had parents with low education; the corresponding percentages for their counterparts who lived away from their families were 28.4% and 22.1% (P-values for χ^2 tests were <0.01 and 0.05, respectively).

In 36.3% of the cases, the student had ever witnessed domestic violence during childhood. About 2 of every 10 students reported having experienced some form of sexual abuse as a child, similar to the prevalence documented for other countries

(Finkelhor 1994a, 1994b). These two dimensions of intra-family violence were correlated. Among subjects who had ever been sexually abused, 43.5% had witnessed violence, compared to 34.4% of those who had not (χ^2 test, P=0.11). Both forms of aggression occurred more frequently when the level of parental education was low. Among subjects raised in households with low parental education, 48.1% had witnessed violence, compared to 31.2% among their counterparts whose parents had higher levels of schooling (χ^2 test, P<0.01); the corresponding figures for sexual abuse were 28.6% and 17.5% (χ^2 test, P<0.01).

Prevalence of Physical Victimization; Characteristics of Most Severe Incident

Part I of Table 2 presents the percentage of students who reported each measured form of physical victimization, since age 14 and in the past 12 months. Students who reported more than one form contribute to the percentages in each category. Experiences of mild violence, moderate violence and severe violence since age 14 were reported by 21.1%, 12.0% and 5.7% of the students, respectively, and 5.0% had suffered a physical injury. The corresponding percentages for the past 12 months alone were 11.9%, 6.3%, 2.4%, and 2.4%, respectively.

Consistent with Foshee's (1996) findings, ancillary analyses showed that the injury rate ranged from 23.7% to 24.5% in cases of ever experiencing mild or moderate violence; in instances of ever experiencing severe violence it ranged from 42.9% for students who were hit with a fist, to fully 100% for those who were burned or beat repeatedly. Further analyses revealed that among students who were ever victimized,

44.3% reported more than one incident; among students who had ever suffered an injury, 72.7% reported more than one incident.

In Part II of the table, students who reported more than one form of physical victimization were categorized in the most severe type. These estimates show that 5.0% and 20.6% of the students, respectively, reported violence with physical injury and violence with no physical injury as the most severe form experienced since age 14; the corresponding twelve-month percentages were 2.4% and 12.9%, respectively.

One of the questionnaire items asked about the identity of the perpetrator in the most serious incident of physical dating violence experienced; in 89.4% of the cases, the perpetrator was identified as a steady dating partner; more casual relationships were involved in the remainder of the cases. It is noteworthy that in response to a question on whom, if anyone, the victim notified, no one reported telling the police, not even students who experienced injuries serious enough to require medical attention.

Generalized Ordered Logit Analyses

Table 3 reports the generalized ordered logit estimates. Brant tests revealed that two variables violated the proportional odds assumption in all models: age and maternal employment; the corresponding odds ratios were thus allowed to vary across categories. Wald tests indicated that there were no violations of the assumption in the final models that were estimated.

The bivariate analyses shown in the first column indicate that low parental education, childhood sexual abuse, having witnessing domestic violence, and having had sexual debut were all significantly associated with a higher risk of victimization. Students

21 years of age or older at the time of the survey, who had had a longer exposure to the risk of victimization, displayed an increased likelihood of having suffered an incident resulting in injuries; at the same time, maternal employment had a protective effect against this most severe type of victimization.

Multivariate analyses were conducted by building sequential models. Age and the socioeconomic and demographic variables measured as of age 14 were included first, followed by demographic variables reflecting students' choices regarding living arrangements and the initiation of sexual activity. The variables measuring intra-family violence during childhood were added next, one at a time, to ascertain the extent to which the effects of socioeconomic status were mediated by early experiences with aggression.

Model 1 shows that for the older students, 21 years old and over, the odds of being in category 3 (victimization with injury) as opposed to categories 1 and 2 was 4.87 times the odds for their younger counterparts. At the same time, having a mother who worked outside the home had a protective effect, particularly against the worst type of victimization (AOR 0.29, 95% CI 0.11 – 0.70). Young women who had no attendance to religious services had 1.62 times the odds of reporting victimization (95% CI 1.00 – 2.63).

Model 2 shows that remaining in the parental home had a strong protective effect (AOR 0.48, 95% CI 0.24 – 0.93). When this influence was controlled, the effects of low parental education and having been raised in a large metropolitan area increased in size and became significant (AOR 1.67, 95% CI 1.05 – 2.67, and AOR 2.26, 95% CI 1.10-4.63, respectively). Model 1 concealed the fact that growing up in a big city and in a low-SES home are risk factors for victimization, because young people with these

characteristics disproportionately remained in the parental home, which exerts an influence in the opposite direction, i.e., it decreases the victimization risk.

Model 2 also shows that students who had initiated sexual activity were 1.81 times more likely to have been victimized (95 % CI 1.09-3.02), and controlling for this factor made the religious attendance variable become insignificant. This suggests that part of the reason why youth who grew up with no religious involvement in their lives were more likely to have been victimized was their higher probability of having had their sexual debut by the survey date.

Models 3 and 4 indicate that childhood sexual abuse and witnessing domestic violence were significantly related to victimization (AOR 1.95 95% CI 1.18-3.21; and AOR 1.58 95% CI 1.00 – 2.50, respectively). As noted earlier, these variables were correlated and Model 5, which includes both, shows somewhat smaller effects. Compared to Model 2, the effect of low parental education in Model 5 was smaller in magnitude and significance, suggesting that these acts of aggression partially mediate the influence of low SES.

DISCUSSION

In the U.S., Makepeace's (1981) pioneering investigation of dating violence led to numerous subsequent attempts to quantify and replicate prevalence rates, identify risk factors, and develop programs of prevention and response in college campuses across the country (O'Keefe et al. 1986; Arias et al. 1987; Stacy et al. 1994). Estimates of dating violence prevalence in the U.S. are in the 21% - 45% range (Lewis & Fremouw 2001). The present analysis for the case of Chile revealed that 25.6% of the students had

experienced some form of physical dating violence since age 14. In interpreting this estimate, it is important to recall that the sample was disproportionately composed of relatively young students. Overall, the results suggest that physical victimization in the college population in Chile is an issue warranting public health attention.

Intervention efforts in the U.S. have generally included attempts to change the victims' and perpetrators' perceptions regarding the legitimacy of violence in interpersonal relations (Arias & Johnson 1989). Such initiatives seem particularly pressing in the context of the traditional Chilean society, where permissive attitudes toward family violence and beliefs that men may demonstrate their love through violent behaviors are widespread (McWhirter 1999).

The multivariate analyses identified students who live away from their parents as meriting particular attention in prevention programs, as they are more vulnerable to victimization; young women growing up in large metropolitan areas were also seen to be at higher risk.

Violence is known to be more severe in more committed relationships (Cate et al. 1982) and this most likely explains the finding that young women who had already had their sexual debut were more likely to have experienced victimization. The estimates also showed that being raised with some participation in religious activities had a protective effect, consistent with evidence from the U.S. (Howard et al. 2003). Additional analyses revealed that the beneficial influence of such participation stemmed in part from its impact on delaying sexual debut. Involvement in religious activities is known to be associated also with other positive outcomes for youth, including better mental health and less substance use (Donahue and Benson 1995; Koenig et al. 2001;

Waite and Lehrer 2003), and such factors most likely played a role here as well. Future surveys will ideally include an array of items measuring mental health factors and risk behaviors directly.

The variables reflecting students' choices regarding living arrangements and initiation of sexual activity merit further attention. Residence in the parental home decreases the risk of victimization due to support and supervision from family members. At the same time, initiation of sexual activity increases such risk because of its association with more committed relationships where violence is more prevalent. At the same time, students who choose to live away from their parents and to become sexually active have unobserved characteristics that probably increase the victimization risk. Thus the true protective effect of residence with the parents and the true adverse effect of making the transition to sexual activity are smaller than the influences measured here.

There is some evidence from previous studies in Chile (Urzua et al. 2002) and the U.S. (Stets & Henderson 1991; O'Keefe 1998) that low SES may increase the probability of receiving dating violence, and the present results supported this finding. Further analyses suggested that important risk factors are childhood sexual abuse and the witnessing of domestic violence, and that part of the way in which low SES leads to increased victimization is through the higher prevalence of these forms of violence in economically disadvantaged households. Studies that have found an intergenerational transmission of violence have suggested an explanation based on social learning theory (Bandura 1977): youth who have witnessed domestic violence or who have experienced abuse during childhood are more prone to go on to imitate and/or tolerate such behaviors later in life (O'Keefe 1998, Lewis & Fremouw 2001).

Maternal employment during the respondent's childhood was found to have a protective effect, especially against the most severe incidents of violence. Young women who grow up seeing their mothers engaged in work outside the home are probably less traditional, more assertive, and more likely to get out of violent relationships before the aggression escalates to severe levels.

At the methodological level, the present analysis is the first in this area to utilize the generalized ordered logit technique, a procedure that utilizes information on the distinction between violence which results in physical injuries versus less severe forms, and allows for the possibility of non-proportional odds. It is noteworthy that some of the relationships described here (e.g., the effects of age and maternal employment) were statistically insignificant in preliminary logistic regressions with a dichotomous dependent variable that only distinguished between some and no victimization, the methodology generally used in previous research.

The study has several limitations. Although the sample encompassed members of the various educational programs at the university, it was not a random sample and the findings cannot be generalized to the full student body of the university. The estimates presented are likely to underestimate the true prevalence of physical victimization because a substantial proportion of eligible subjects were not in attendance on the day of questionnaire administration; such students most likely include a disproportionate number of high-risk individuals. In addition, intimate partner violence is commonly underreported by women due to reasons that include denial, not interpreting coercion as such, social desirability bias, and recall error (Koss et al. 1994; Lewis & Fremouw 2001).

Overall, this study represents a first step in the process of gathering evidence on the prevalence of and risk factors for physical dating victimization among female college students in Chile. It is hoped that it will stimulate the collection of additional data on both receiving and perpetrating gender violence, as well as progress in developing theory-based public health initiatives to prevent and respond to such violence.

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Figure 1. Questionnaire Items on Incidents of Physical Violence and Injuries

Panel A: Incidents of Violence[a]	
Mild Violence	scratched or slapped me
	pushed, grabbed, or shoved me
Moderate Violence	slammed me or held me against a wall
	kicked or bit me
Severe Violence	hit me with a fist
	hit me with something hard
	beat me repeatedly
	tried to choke me
	burned me
	assaulted me with a knife or gun

Panel B: Injuries[b]
I had a sprain, bruise or small cut because of a fight with a dating partner
I passed out from being hit on the head by my dating partner in a fight
I went to a doctor for an injury from a fight with my partner
I needed to see a doctor for an injury from a fight with my partner, but didn't go

[a] Possible responses were never, 1-2 times, 3-5 times, and 6 times or more.

[b] Possible responses were yes or no.

Table 1. Descriptive Statistics for Independent Variables[a]

Age ≥ 21	37.4
Low parental education	30.2
Maternal employment	60.5
No attendance to religious services	24.0
Big City	77.6
Residence with parents	78.5
Ever had sex	64.9
Childhood sexual abuse	20.9
Witnessed domestic violence	36.3

n= 441

[a] The estimates in this table represent the percentage of cases in which the variable equals 1.

Table 2. Percentage of Students Reporting Physical Victimization

	Panel A: Since Age 14	Panel B: Past 12 months
PART I: Multiple occurrences per student included: categories not mutually exclusive		
Mild violence	21.1	11.9
Moderate violence	12.0	6.3
Severe violence	5.7	2.4
Injury	5.0	2.4
No incidents of dating violence	74.4	84.7
PART II: Summary measure placing each student in only one category based on most severe incident: categories mutually exclusive		
Violence with injury	5.0	2.4
Violence with no injury	20.6	12.9
No incidents of dating violence	74.4	84.7
TOTAL	100%	100%

n for Panel A: 441

n for Panel B: 412 (29 observations with missing data on past 12-month victimization were dropped)

Table 3. Generalized Ordered Logit Estimates: Physical Victimization Odds Ratios (P-value) [95% confidence interval][a]

	Bivariate analyses	Multivariate analyses				
		Model 1	Model 2	Model 3	Model 4	Model 5
Low parental education	1.63 (0.03)* [1.04-2.54]	1.51 (0.08) [0.95-2.38]	1.67 (0.03)* [1.05-2.67]	1.59 (0.06) [0.99-2.54]	1.52 (0.09) [0.94-2.44]	1.45 (0.13) [0.90-2.35]
No attendance to religious services	1.58 (0.06) [0.98-2.55]	1.62 (0.05)* [1.00-2.63]	1.46 (0.13) [0.89-2.39]	1.46 (0.14) [0.89-2.41]	1.46 (0.14) [0.89-2.40]	1.47 (0.13) [0.89-2.42]
Big City	1.56 (0.12) [0.90-2.70]	1.47 (0.18) [0.84-2.56]	2.26 (0.03)* [1.10-4.63]	2.32 (0.02)* [1.14-4.73]	2.05 (0.05)* [1.00-4.21]	2.13 (0.04)* [1.04-4.37]
Residence with parents	0.79 (0.37) [0.48-1.32]	--	0.48 (0.03)* [0.24-0.93]	0.47 (0.03)* [0.24-0.93]	0.54 (0.07) [0.27-1.06]	0.53 (0.07) [0.27-1.04]
Ever had sex	1.88 (0.01)** [1.17-3.02]	--	1.81 (0.02)* [1.09-3.02]	1.76 (0.03)* [1.05-2.95]	1.75 (0.03)* [1.05-2.92]	1.70 (0.04)* [1.01-2.84]
Childhood sexual abuse	2.10 (<0.01)** [1.30-3.41]	--	- -	1.95 (0.01)** [1.18-3.21]	- -	1.89 (0.01)** [1.14-3.12]
Witnessed domestic Violence	1.80 (0.01)** [1.17-2.77]	- -	- -		1.58 (0.05)* [1.00-2.50]	1.52 (0.08) [0.95-2.41]
Age						
1 vs 2&3	1.33 (0.20) [0.86-2.06]	1.32 (0.21) [0.85-2.06]	1.07 (0.79) [0.67-1.70]	1.02 (0.95) [0.63-1.63]	1.08 (0.76) [0.67-1.72]	1.03 (0.91) [0.64-1.65]
1&2 vs 3	4.83 (<0.01)** [1.85-12.61]	4.87 (<0.01)** [1.88-12.65]	3.89 (0.01)** [1.48-10.25]	3.76 (0.01)** [1.42-9.92]	3.97 (0.01)** [1.51-10.49]	3.86 (0.01)** [1.46-10.23]
Maternal employment						
1 vs 2&3	0.73 (0.15) [0.47-1.12]	0.75 (0.21) [0.48-1.17]	0.71 (0.14) [0.45-1.11]	0.72 (0.16) [0.45-1.14]	0.66 (0.08) [0.42-1.06]	0.68 (0.11) [0.43-1.09]
1&2 vs 3	0.29 (0.01)** [0.11-0.72]	0.28 (0.01)** [0.11-0.70]	0.27 (0.01)** [0.11-0.67]	0.27 (0.01)** [0.11-0.67]	0.25(<0.01)** [0.10-0.63]	0.25(<0.01)** [0.10-0.64]
log L	- -	-291.79	-286.58	-283.29	-284.71	-281.75
χ^2 (P-value, df)	- -	29.76** (<0.01, 7)	40.17** (<0.01, 9)	46.76** (<0.01, 10)	43.91** (<0.01, 10)	49.84** (<0.01, 11)
Wald-test (P-value, df)	- -	3.96 (0.27, 3)	4.69 (0.46, 5)	4.50 (0.61, 6)	4.67 (0.59, 6)	4.56 (0.71, 7)

n = 441

[a]Dependent variable is trichotomous:
1 (no victimization); 2 (victimization with no injury); or 3 (victimization with injury)

** p<0.01; * p<0.05