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Keeping it in the family: Intergenerational transmission of violence in Cebu, Philippines

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Abstract

Objectives—While witnessing violence between parents is one of the most consistent correlates of experiencing intimate partner violence in later life, little research exists in developing countries on the effects of witnessing interparental intimate partner violence (IPV) on young adults' involvement with family violence. This study examines the relation between witnessing interparental IPV and young adults' subsequent use and experience with family intimidation and physical abuse (FIPA) in Cebu, Philippines.

Methods—Using data from the Cebu Longitudinal Health and Nutrition Survey, recent use and experience of FIPA among 21-22 year old young adults was assessed through self-reports from the 2005 survey, and childhood witnessing of interparental IPV assessed from the 2002 survey. Multinomial logistic regression was used to examine the effect of witnessing interparental IPV on young adults' use and experience of FIPA.

Results—Among all young adults, witnessing paternal perpetration of IPV predicted using FIPA, and witnessing maternal perpetration predicted experiencing FIPA. Among young adult females only, witnessing reciprocal IPV between parents predicted experiencing FIPA. Witnessing paternal perpetration of IPV among young adult males, maternal perpetration among young adult females, and reciprocal interparental IPV among all young adults predicted young adults both using and experiencing FIPA.

Conclusions—Violence prevention efforts should reach all family members through family centered interventions. School based curricula, which largely focus on intimate partner and peer violence, should recognize adolescents' use and experience of violence with family members, and design modules accordingly. Further research on gender differences in family violence is recommended.

Keywords

intimidation; physical abuse; intimate partner violence; young adults; adolescents; family violence; Philippines

Background

Research on interpersonal violence among adolescents focuses largely on dating and peer violence, with limited attention to understanding interfamilial violence. Studies of adolescent violence outside intimate partnerships and peer relationships are particularly limited in developing countries (1). Research using representative samples of non-married adolescents ages 10-19 years attending public school in Mexico and Egypt found that a family member had ever hit 15% of Mexican adolescents and 17% of Egyptian adolescents (2). The majority of family violence likely occurs within the privacy of the home. Given its covert nature, determining the prevalence and risk factors for family violence among adolescents is a fundamental step towards prevention.

Social learning theory posits that adolescents learn to be violent by observing the behaviors of intimate primary group, such as parents and peers (3); and are more likely to perform behaviors exhibited by same sex models (4). While often applied to understand violence perpetration, particularly with intimate partners and community members (5), social learning theory can also be applied to explain victimization (6) within other interpersonal relationships. Several studies have found a positive relationship between witnessing parents' intimate partner violence (IPV) and children's and adolescents' use and experience of violence with their parents (7, 8). In one study of adolescents ages 13-18 years, girls who witnessed fathers perpetrate IPV were more likely to be violent towards their fathers; however, boys who witnessed interparental IPV were not more likely to be violent towards either parent (7). According to another study of married or cohabitating individuals with children ages 3-17 years, children who witnessed maternal-perpetrated, paternal-perpetrated or bidirectional violence between parents were more likely to use violence against mothers, but not fathers (8). As U.S.-based studies, however, the results cannot be generalized to developing country settings, where family structures and relationships are vastly different.

While no research on witnessing interparental violence and subsequent family violence among adolescents has been identified in developing countries, a few studies do exist on the intergenerational transmission of intimate partner violence (IPV). Evidence from India indicates that witnessing interparental violence plays a significant role in subsequent experience and use of IPV. Married women in Lucknow who witnessed their fathers beat their mothers during childhood were at higher risk of being victims of physical spousal abuse (9). In Uttar Pradesh, two studies of married men showed that males who reported witnessing their fathers beat their mothers during childhood had a four to five times higher odds of using physical violence towards their own wives (10, 11).

Evidence from other countries have yielded mixed results. Analysis of data from married or cohabitating women surveyed in the 2002 Haiti Demographic and Health Survey found no relationship between witnessing fathers beat mothers and women's experience of physical

abuse from intimate partners (12). In contrast, married or cohabitating young adults from Cebu, Philippines who witnessed mother-perpetrated violence were more likely to later experience IPV victimization, but not perpetration. Additionally, witnessing father-perpetrated or reciprocal interparental violence did not predict subsequent victimization or perpetration of partner violence (13).

Family relations in the Philippines

The family is an important social institution in the Philippines. The nuclear family is the most common family structure (14), though extended families are not uncommon (15). Extended households may include grandparents, aunts, uncles, and cousins (14). Women in the Philippines have relatively high power within their household, especially compared to other women in Asia. While the husband is the legal head of the family, joint decision-making is the norm (14). Even within this context, a clear division of gender roles exists. For example, decisions about household budget allocations are consistently made by wives, while decisions about family finances and investments are dominated by husbands (17).

Relationships between Filipino parents and children have traditionally been intimate, with a tendency for parents to be protective. About 30% of young adult couples continue living with either the bride's or groom's parents after marriage (16), establishing a separate household at a later time (14). Siblings are expected to provide mutual respect and protection, with brothers looking after sisters and older siblings taking care of younger ones, especially when parents are away (14).

Interpersonal violence in the Philippines

Interpersonal violence in the Philippines is common. The 2002 Young Adult Fertility and Sexuality Study, a nationally representative study of Filipino adolescents, found that 14% of 15-24 year olds reported they physically injured someone or were physically hurt by someone in the past three months. More males than females reported using and experiencing violence: 16% vs. 12% had perpetrated, and 16% vs. 11% had been victims (18). Spousal violence is also prevalent. About 14% of ever-married women ages 15-49 years ever experienced physical violence, and 16% of ever-married women reported they had ever initiated physical violence against their current or most recent husband (19).

While witnessing violence between parents is one of the most consistent correlates of experiencing intimate partner violence in later life (9, 11, 20, 21), little research exists in developing countries on the effects of witnessing interparental violence on adolescents' violence with family members. Research on the effects of witnessing interparental violence that is perpetrated by mothers or both parents, and how these effects differ between male and female adolescents, is also limited. This study examines the relation between witnessing interparental IPV and young adults' subsequent use and experience of family intimidation and physical abuse in Cebu, Philippines. This study also investigates if the impact of witnessing interparental violence differs based on the sex of the perpetrating parent and young adult.

Methods

Study Design

The source of data for this research is the Cebu Longitudinal Health and Nutrition Survey (CLHNS), an ongoing study of a cohort of Filipino women who gave birth between May 1, 1983 and April 30, 1984. A one-stage cluster sampling procedure was used to select participants for the baseline survey. All pregnant women living in 33 randomly selected communities in Metropolitan Cebu were invited to take part in the study. The baseline interview was conducted with 3,327 pregnant women, and of these women 3,080 remained in the study and had singleton live births (referred to as index children) during the one-year period of eligibility (22). Follow up continued for these women and their index children (ICs) every two months for 24 months immediately after birth, and again in 1991-92, 1994-95, 1998-99, 2002, and 2005. For the 2005 survey 65% (n=2018) of the 3,80 mothers and 62% (n=1912) of the 3,080 ICs were interviewed. Attrition was largely due to migration. Refusal rates at each survey ranged from 9% to 11% during the first year of data collection, and substantially decreased over the years (22). Informed consent was obtained from participants and all surveys were approved by the Internal Review Board of the University of North Carolina-Carolina Population Center (22, 23).

Sample

The sample for this study consists of 1,912 index children (ICs) ages 21-22 years who were interviewed in 2005. Eight pairs of twin ICs (0.84%) were dropped from the analyses, in addition to fifteen ICs (0.78%) who were missing data on violence use and experience. Remaining missing data were checked to see if they were related to the outcome. The nearest neighbor hotdeck imputation sorting by IC's age, IC's education, and household location was used to replace missing data. The final sample size was 1,881.

Study Measures

Young adults' use and experience of family violence was taken from the IC's 2005 survey, and predictors were taken from the 2002 IC and maternal surveys.

Family Intimidation and Physical Abuse

The 2005 CLHNS contains a 20-item scale based on an adaptation of Straus' Conflict Tactic Scale (CTS1) (25) and the Revised Conflict Tactics Scale (CTS2) (26). Young adults were asked if they had used or experienced acts of negotiation, psychological aggression, and physical abuse with unspecified family members over the course of a disagreement, annoyance, "spat" or fight in the 12 months preceding the survey, and if so how often. Using results from exploratory factor analysis and Kuder-Richardson-20 (KR-20) statistics as guidance, the following items were included from the 20-item scale to create an *Intimidation and Physical Abuse* subscale: 1) Threw or smashed at something; 2) Had something in hand to throw but did not; 3) Threw something at someone; 4) Pushed, grabbed or shoved; 5) Hit someone (not with anything); 6) Hit someone with something hard. (Perpetration KR-20=0.73. Victimization KR-20=0.78). Respondents who reported using and/or

experiencing one or more of the above items at least once in the past year were categorized as using and/or experiencing intimidation and physical abuse.

The dependent variable, family intimidation and physical abuse (FIPA), was created as a categorical measure with four unordered categories: 1) did not use or experience (reference category); 2) only used towards family member; 3) only experienced from family member; and 4) bidirectional (both used and experienced FIPA, though not necessarily with the same family member).

Witnessing Interparental Violence

The 2002 survey asked ICs if they remembered either parent physically hurt the other during childhood, and if so who hurt the other. The main independent variable was a categorical measure with four unordered categories: 1) neither parent hurt the other (reference category); 2) mother-only hurt the father; 3) father-only hurt the mother; and 4) reciprocal violence between parents.

Individual, Maternal, and Household Characteristics

Individual characteristics, based on IC's 2002 responses, included highest grade completed, married/cohabitating (yes, no), current work status (yes or no), attend church at least one per week (yes, no), any current alcohol consumption (yes, no), and history of drug use (yes, no). Maternal characteristics, based on mother's 2002 surveys, included age, highest educational grade completed, attend church at least one per week (yes, no), and married/cohabitating (yes, no). Household characteristics, taken from both IC's and mother's 2002 reports, included location (urban, rural), household size, any household alcohol expenditure (yes, no), and wealth based on asset ownership of living room set, bed with mattress, electric iron, electric fan, air conditioner, refrigerator, VCR, and color television (Chronbach's $\alpha=0.82$).

Data Analysis

All analyses accounted for the clustered design of the CLHNS and were stratified by respondents' gender. Bivariate multinomial logistic regression was used to examine the association between the dependent variable and each independent variable. Multivariable multinomial logistic regression was used to examine the relationship between respondents' reports of FIPA and independent variables. A block modeling approach was used and independent variables were entered in the following order: 1) ICs' reports of witnessing interparental violence; 2) ICs' characteristics; 3) Mothers' characteristics; and 4) Household characteristics.

Multicollinearity of the independent variables was evaluated using variance inflation factor. In logistic regression values above 2.50 may indicate multicollinearity (27). The variance inflation factor for this study was 1.17. All analyses were conducted in Stata 10.

Results

Respondent characteristics

A similar percentage of young adult males and females reported witnessing interparental violence, with about 13% reporting their mothers hurt their fathers, 23-26% reporting their father hurt their mothers, and 7% reporting both parents hurt each other (Table 1). About 23% of females and 9% of males used FIPA, and about 6% of females and 4% of males experienced it. Approximately 28% of females and 24% of males both used and experienced FIPA.

Bivariate Analysis

Among young adult males, using FIPA was not associated with witnessing interparental violence, though experiencing FIPA was associated with witnessing maternal perpetration of IPV (Table 2). Bidirectional FIPA was associated with witnessing paternal IPV perpetration and reciprocal violence between parents.

Among young adult females, using FIPA was associated with paternal perpetration of IPV (Table 3). Experiencing and bidirectional FIPA were associated with maternal IPV perpetration and reciprocal interparental violence.

Multivariate Analyses

Likelihood ratio tests indicated the full multinomial regression model for both young adult males' and females' use and experience of FIPA fit the data significantly better than the null models. Only the final models are shown.

After adjusting for covariates, young adult males who witnessed paternal perpetration of IPV had a higher risk of using FIPA (Relative risk ratio [RRR]= 1.70; 95% confidence interval [CI]= 1.01, 2.87) (Table 4). Witnessing maternal perpetration of IPV remained a predictor of males' FIPA experience (RRR = 2.79; 95% CI = 1.24, 6.29). Witnessing paternal IPV perpetration (RRR = 1.50; 95% CI = 1.05, 2.14) or reciprocal interparental violence (RRR = 2.72; 95% CI = 1.27, 5.86) remained predictors of males' bidirectional FIPA.

Similar to males, young adult females who witnessed paternal perpetration of IPV were more likely to use FIPA (RRR = 1.60; 95% CI = 1.09, 2.38) (Table 5). Witnessing maternal perpetration (RRR = 3.02; 95% CI = 1.27, 7.18) or reciprocal interparental violence (RRR = 3.71; 95% CI = 1.54, 8.93) remained more likely to experience FIPA. Finally, witnessing maternal perpetration (RRR = 1.93; 95% CI = 1.10, 3.37) or reciprocal interparental violence (RRR = 1.89; 95% CI = 1.05, 3.36) remained predictors of females' bidirectional FIPA.

Discussion

The results of this study suggest that witnessing interparental violence is a significant risk factor for young adults' use of and experience with intimidation and physical abuse with family members. Young adults who witnessed paternal perpetration of IPV were more likely

to use FIPA, while young adults who witnessed maternal perpetration were more likely to experience FIPA. Among females only, witnessing reciprocal interparental violence was also a risk factor for experiencing FIPA. Bidirectional FIPA was predicted by witnessing reciprocal interparental violence among both males and females, in addition to witnessing paternal perpetration of IPV among males and maternal perpetration among females.

The finding that both males and females were more likely to use FIPA after witnessing paternal IPV perpetration, but more likely to experience FIPA after witnessing maternal perpetration, may speak to qualitative differences in the type and severity of violence used by fathers compared to mothers. According to a U.S.-based study, adult children who had reported witnessing interparental violence were more frequently victims than perpetrators of partner abuse, and the difference between victim and perpetrator depended on the type of interparental violence witnessed. The authors suggest that exposure to relatively mild violent acts increases the risk of victimization, while exposure to severe forms of violence increases risk of perpetration (28). Ansara and Hindin (29) found that in the Philippines wives were more likely than their husbands to require medical attention due to violence. Fathers in this study may have similarly perpetrated more severe violence than mothers, and the differential in severity of violence led to young adults' different roles in violence involvement.

The different role modeling behaviors may also be explained by young adults who used FIPA towards IPV-perpetrating fathers (who likely used more severe violence than IPV-perpetrating mothers) to protect mothers. In this case, young adults' use of FIPA is situational rather than a learned behavior.

Witnessing reciprocal violence between parents was a risk factor for bidirectional FIPA among all young adults. Evidence suggests that when intimate partners are in mutually violent relationships they sustain more frequent severe violence and a greater number of injuries than individuals in unidirectional violent relationship (30). The more frequent and severe violence one witnesses and is in close proximity to, the more violence s/he may be involved with. In this case, the resulting higher level of young adult violence is in the form of bidirectional intimidation and physical abuse.

Witnessing paternal perpetration of IPV among males and maternal perpetration among females also increased the risk of bidirectional FIPA, possible a result of same sex modeling. Young adults may relate particularly well to same sex parents as a result of similar gendered experiences. They may be especially susceptible to learning violence from same sex parents, and therefore use more frequent and severe intimidation and violence with family members. High intensity use of FIPA may lead young adults to experience intimidation and violence as well. Evidence of same sex modeling can be found for violence perpetration, but not victimization (7, 31). However, these studies are based on non-representative samples in the U.S.

This study confirms that female's use of intimidation and physical abuse in this setting is common and more frequent than males' use. This finding is in line with previous research that shows, compared to married and cohabitating young males, a higher proportion of married and cohabitating young adult females perpetrate intimate partner violence in Cebu

(13, 29). No other known studies in the developing country context have measured family intimidation and violence use among adolescents.

This study has several limitations. First, the survey instrument does not ask respondents to specify the type or gender of the family member(s) intimidation and physical abuse occurred with. Therefore, determining the power dynamics that may exist between the young adult and family member is not possible. Violence that occurs with a parent has different implications than violence between siblings, and violence with in-law family holds different meaning than violence with one's natal family. Further, violence between opposite-sex family members pose a different set of issues than that between same-sex members. Second, the instrument does not allow for differentiation between bidirectional FIPA that is mutual (i.e. between the same set of family members) and non-mutual, or specify who initiated in cases of bidirectional FIPA. Third, this study does not measure excessive punishment or abuse of young adults by parents during childhood. Excessive punishment or abuse is associated with witnessing intimate partner violence between parents (32, 33), and is a risk factor for violence involvement in children's later years (20, 21). Finally, self-reported data is potentially biased. Young adults who used and/or experienced FIPA and reported it may be different from young adults who used and/or experienced FIPA but did not report it. In particular, young adults who witnessed violence as children may view it as normative and provide valid reports of their own involvement with intimidation and physical abuse. In contrast, young adults who did not witness violence may be less likely to report their own use or experience. If such reporting bias exists in this study, then we have overestimated the strength of the relationship between witnessing interparental violence and young adults' use and experience of FIPA.

Despite these limitations, this study makes several contributions to adolescent violence research. This study is the first in a developing country to examine the effect of witnessing interparental violence on young adults' subsequent use and experience of familial intimidation and violence. This study is also one of the few in the developing world that includes female use and male experience, and considers the multidirectional nature of violence among both parents and young adults. Including one-sided and bidirectional violence is particularly important since persons who are victimized often also perpetrate violence (30). Finally, although most studies of violence in developing countries are cross-sectional, this research uses two time points for the outcome and predictors, and uses a representative sample of 21-22 year olds in Cebu.

Our findings have several implications for addressing adolescent violence prevention in the Philippines. First, programs and policies must reach all family members to effectively address adolescent violence. Family centered interventions that work with adults, adolescents, and children to manage strong emotions and stress, develop problem solving skills, and communicate effectively can decrease aggressive behaviors among young people (34). Such programs can also work with adult couples in the family to reduce and prevent intimate partner violence. In addition to working with the couple as a unit, programs can focus on prevention among fathers given they are more likely to perpetrate IPV and cause injuries from physical abuse, compared to mothers (29). Since about half of young adults in Cebu and 60% of their mothers attend church frequently, these programs may be promoted

by and otherwise linked with churches. Additionally, most school based adolescent violence prevention curricula focus solely on intimate partner or peer violence (35, 36). School based curricula in the Philippines would do well to recognize that adolescents use and experience violence within their families, and design modules accordingly. To ensure the different needs of male and female adolescents are met, both family centered and school based interventions should address gender-specific conflict themes young people engage in with their families.

The gender differences found in our study warrant further research. Particularly, the finding that males and females are both at higher risk of using FIPA after seeing their fathers be violent and higher risk of experiencing FIPA after seeing their mothers be violent, but follow same-sex modeling for bidirectional FIPA, should be more fully explored. Understanding the level of severity of intimate partner violence used by mothers and fathers, and how parent-child interactions differ based on the gender of both the parent and the child, may explain the differential impact of witnessing interparental violence by gender.

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Table 1

Characteristics of respondents and mothers: Cebu, Philippines, 2002 (n=1881)

	Males (n=989)	Females (n=892)	p-value
Intimidation and physical abuse with family (2005)			
None, %	63.5	40.1	
Used-only, % ^a	8.5	22.8	<0.001
Experienced-only, % ^a	4.2	5.6	0.07
Bidirectional, % ^a	24.1	27.6	0.13
Witnessed interparental violence (2002)			0.58
Mother hurt father, % ^a	13.4	13.5	
Father hurt mother, % ^a	25.9	23.1	
Both hurt each other, % ^a	7.3	7.1	
Neither parent hurt the other, % ^a	53.5	56.4	
Individual characteristics (2002)			
Years of school completed (range 0-13), mean (SD) ^b	8.0 (2.3)	8.8 (2.0)	<0.001
Married or cohabitating, % ^a	4.0	14.4	<0.001
Worked at time of survey, % ^a	58.1	53.3	0.01
Church attendance, once a week or more, % ^a	40.4	58.7	<0.001
Alcohol consumption, % ^a	74.2	45.0	<0.001
History of drug use, % ^a	22.2	3.4	<0.001
Maternal characteristics (2002)			
Age (range 32-66), mean (SD) ^b	44.8 (6.0)	44.8 (6.0)	0.92
Years of school completed (range 0-19), mean (SD) ^b	7.5 (3.9)	7.4 (3.8)	0.69
Married or cohabitating, % ^a	90.5	82.7	<0.001
Church attendance, once a week or more, % ^a	57.9	60.1	0.36
Household characteristics (2002)			
Number of persons in household (range 1-18), mean (SD) ^b	6.6 (2.6)	6.8 (2.7)	0.32
Household purchased any alcohol, % ^a	42.5	41.4	0.55
Household asset index (range 0-25), mean (SD) ^b	5.1 (4.4)	5.0 (4.1)	0.86
Rural residence, % ^a	25.9	26.23	0.87

^aSecond-order corrected Rao-Scott chi-square used to test for independence between male and female reports.^bAdjusted Wald test used to test for equal means.

Table 2

Bivariate multinomial logistic regression of intimidation and physical abuse with family members on witnessing interparental violence among male young adults: Cebu, Philippines, 2005 (n=989)

	Used only RRR	Experienced only RRR	Bidirectional RRR
Witnessed interparental violence (2002)^a			
Maternal perpetration	1.30	2.81 *	1.62
Paternal perpetration	1.65	1.14	1.56 *
Reciprocal	0.99	1.06	2.89 **
Individual Characteristics (2002)			
Year of school completed	1.05	0.91	1.01
Married or cohabitating	0.23	0.98	0.50
Worked at time of survey	0.63 *	1.49	0.94
Church attendance, once a week or more	0.75	1.18	1.17
Alcohol consumption	0.92	0.84	1.05
History of drug use	1.24	1.04	1.17
Maternal Characteristics (2002)			
Age	1.00	1.01	0.97 *
Years of school completed	0.97	0.99	1.01
Married or cohabitating	0.83	0.41	1.09
Church attendance, once a week of more	0.89	0.77	1.14
Household Characteristics (2002)			
Number of persons in HH	1.09 *	1.01	1.12 **
HH purchased any alcohol	0.98	0.68	0.93
Household asset index	0.97	0.95	0.98
Rural residence	0.96	0.77	0.46 **

^aReference is 'Did not witness violence'

RRR=relative risk ratio

*
 $p < .05$.

**
 $p < .01$.

Table 3

Bivariate multinomial logistic regression of intimidation and physical abuse with family members on witnessing interparental violence among female young adults: Cebu, Philippines, 2005 (n=892)

	Used only RRR	Experienced only RRR	Bidirectional RRR
Witnessed interparental violence (2002)^a			
Maternal perpetration	1.41	2.61 *	1.84 *
Paternal perpetration	1.78 **	1.54	1.30
Reciprocal	1.01	3.42 *	1.93 *
Individual Characteristics (2002)			
Year of school completed	0.92 *	1.11	1.01
Married or cohabitating	1.17	0.19 *	0.30 ***
Worked at time of survey	0.97	1.31	0.95
Church attendance, once a week or more	1.02	1.13	0.92
Alcohol consumption	1.16	2.18 **	1.41 *
History of drug use	0.77	1.05	0.74
Maternal Characteristics (2002)			
Age	0.97	1.01	0.98
Years of school completed	0.96	0.98	1.01
Married or cohabitating	1.28	0.53	0.92
Church attendance, once a week of more	0.86	2.51 *	1.23
Household Characteristics (2002)			
Number of persons in household	1.04	0.87	1.09
HH purchased any alcohol	0.99	0.70	0.95
Household asset index	0.93	1.03	1.00
Rural residence	0.91	0.38 *	0.62 ***

^aReference is 'Did not witness violence'

RRR=relative risk ratio

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 4

Multivariate multinomial logistic regression of intimidation and physical abuse with family members on witnessing interparental violence among male young adults: Cebu, Philippines, 2005 (n=989)

	Used only ARRR	Experienced only ARRR	Bidirectional ARRR
Witnessed interparental violence (2002)^a			
Maternal perpetration	1.32	2.79*	1.49
Paternal perpetration	1.70*	1.24	1.50*
Reciprocal	1.03	1.31	2.72*
Individual Characteristics (2002)			
Year of school completed	1.10	0.90	1.02
Married or cohabitating	0.24	0.82	0.45*
Worked at time of survey	0.59*	1.32	0.95
Church attendance, once a week or more	0.76	1.33	1.18
Alcohol consumption	0.85	0.80	0.97
History of drug use	1.31	0.95	1.24
Maternal Characteristics (2002)			
Age	1.00	1.01	0.98
Years of school completed	0.98	1.05	1.01
Married or cohabitating	0.72	0.45	0.88
Church attendance, once a week of more	0.96	0.74	1.08
Household Characteristics (2002)			
Number of persons in HH	1.10*	1.04	1.14**
HH purchased any alcohol	0.99	0.69	0.87
Household asset index	0.95	0.96	0.95*
Rural residence	0.85	0.69	0.44***

^aReference is 'Did not witness violence'

ARRR=adjusted relative risk ratio

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 5

Multivariate multinomial logistic regression of intimidation and physical abuse with family members on witnessing interparental violence among female young adults: Cebu, Philippines, 2005 (n=892)

	Used only ARRR	Experienced only ARRR	Bidirectional ARRR
Witnessed interparental violence (2002)^a			
Maternal perpetration	1.33	3.02 *	1.93 *
Paternal perpetration	1.60 *	1.65	1.33
Reciprocal	0.89	3.71 **	1.89 *
Individual Characteristics (2002)			
Year of school completed	0.97	1.06	0.98
Married or cohabitating	1.10	0.16 *	0.30 ***
Worked at time of survey	0.95	1.30	0.93
Church attendance, once a week or more	1.22	0.91	0.82
Alcohol consumption	1.28	1.72 *	1.22
History of drug use	0.76	1.00	0.72
Maternal Characteristics (2002)			
Age	0.97 *	1.00	0.98
Years of school completed	0.98	0.91 *	1.01
Married or cohabitating	1.28	0.57	0.77
Church attendance, once a week of more	1.02	2.20	1.29
Household Characteristics (2002)			
Number of persons in household	1.04	0.85	1.08 *
HH purchased any alcohol	0.92	0.76	0.93
Household asset index	0.94 *	1.01	0.97
Rural residence	0.83	0.43 *	0.64 *

^aReference is 'Did not witness violence'

ARRR=adjusted relative risk ratio

* $p < .05$.

** $p < .01$.

*** $p < .001$.