Witnessing Parental Domestic Violence and Symptoms of Depression and Anxiety in Filipino Adolescents

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Introduction

According to the World Health Organization, up to 20% of children and adolescents suffer from a disabling mental illness (1). Suicide is the third leading cause of death among adolescents (2). Although mental health issues have been relatively understudied during adolescence, there is increasing evidence that a significant proportion of adolescents experience depression and anxiety and that these conditions have lasting negative effects into adulthood. Worldwide, it is estimated that three-quarters of the mental disorders in childhood and adolescence remain untreated, and in developing nations, 90% are likely untreated (3). In developed nations with "well-organized" health care systems, between 44% and 70% of child and adolescent disorders remain untreated (3). In many lower income countries, there are fewer than one psychiatrist and one psychologist per 100,000 people (4).

Although the overall rates of mental health and behavioral disorders are similar by sex, there are clear sex and age differences in depression and anxiety (1). Anxiety and depressive disorders are more common among women, and depression is the fourth leading cause of disease burden (5). Substance use disorders antisocial personality disorders are more common among men(4). Gender differences in levels of depression emerge during adolescence after puberty (6-9).

The connections between domestic violence and mental health problems has been well-documented in adult women (1;8-10). Child abuse has been linked to poorer mental health outcomes in adolescence and adulthood (10-12). The household environment during childhood is increasingly being shown to be one of the factors associated with mental disorders in adulthood. Several studies in the United States have shown that experiencing adverse events in childhood is associated with attempted suicide (12-14). However, these issues have not been explored among adolescents in a developing country setting. This paper quantifies the level of depression and anxiety symptoms in a cohort of over 2,000 adolescents in the Philippines and explores the relationship of these symptoms to recall of violence between their parents.

Methods

Data from the Cebu Longitudinal Health and Nutrition Survey (CLHNS) are used in this study. These data include a sample of women who were followed beginning in 1983, based on a random sample of 33 communities (barangays) in Metro Cebu to locate all pregnant women. A baseline sample was conducted on 3,327 women during pregnancy, and follow-up surveys (1984-1986, 1991, 1994, 1999, and 2002) were conducted on these women and the 3,080 non-twin live births from their pregnancies (15;16). This paper focuses on the data collection from adolescents from the 2002, nearly twenty years after the baseline survey, and it included 2,051 adolescents. All instruments have been translated into Cebuano, the local language in Cebu.

All adolescents were asked a series of questions regarding anxiety and depression. These items are similar to those developed by Achenbach as part of the Youth Self Report (17). This set of indices have been used in a number of different developing country-settings. In the CLHNS, each adolescent was asked, "Please answer how frequently in the past four weeks did you experience these common feelings or problems." The response categories given were (1) none of the time, (2) occasionally, or (3) most of the time. Of the sixteen items asked, the eight that most closely related to measures of anxiety and depression, as measured in the Youth Self Report were retained for the current analysis (overall alpha=0.72, alpha for anxiety=0.59, alpha for depression=0.76 based on confirmatory factor analysis). A list of these items appears in Table 1.

The key set of independent variables come from a series of questions asked of adolescents regarding their recall of abuse between their parents. Adolescents were asked, "Do you remember if either of your parents/caretakers ever hit, slapped, kicked, or used other means like pushing or shoving to try to hurt the other physically when you were growing up?" If the adolescents responded positively to this question, two follow-up questions were asked: "Who hurt the other physically?" (Father, mother, both or

other) and “Do you ever recall one of your parents/caretakers needing medical attention as a result of being physically hurt by the other parent/caretaker?”

Statistical Analyses

Data were entered into dBASE and transferred to Stata V.8 for analysis. First, the overall prevalence of recall of domestic violence between parents and levels of anxiety and depression are reported. The relationship between sociodemographic variables and anxiety/depression were analyzed and the relationship between recall of domestic violence between parents and anxiety/depression was explored. An overall index of anxiety/depression was used as the dependent variable in multivariate OLS regression, and a dichotomized variable of experiencing four or more symptoms of anxiety/depression was used as an outcome with multivariate logistic regression. These models assessed whether adolescent recall of domestic violence was a significant predictor of anxiety/depression after controlling for sociodemographic factors.

Results

The socio-demographic characteristics of the sample are described in Table 2. While many of the characteristics were the same by gender, females had approximately one more year of schooling on average than males, and females were significantly more likely to report being married or cohabiting. Nearly half of all adolescents (46.9%) reported that they remembered domestic violence between their parents. Overall, 13% of adolescents remembered their mothers acting violently towards their fathers, 25.4% recalled their fathers hurting their mothers, and 7.3% reported that their parents hurt each other. Five percent reported that their parent needed medical attention as a result of the physical violence. None of the prevalence levels significantly differed by gender of the respondent. In contrast, there were significant gender differences in the levels of anxiety and depression reported by the adolescents, as expected. The mean score on the eight-item index of anxiety and depression was significantly higher in

females (3.09) as compared to males (2.52) and the prevalence of experiencing four or more symptoms of anxiety and depression was also higher in females than males (37.1% vs. 26.3% respectively).

Figure 1 shows the levels of anxiety and depression by symptom and gender. All of the gender differences shown are statistically different at the $p<0.05$ level, except loneliness and thinking that life is not worth living, which are significant at the $p<0.10$ level. Levels of anxiety related symptoms are generally more common than depression symptoms. Three-quarters of the females and 61% of males worried occasionally or most of the time in the past four weeks, and about half of the females felt lonely, disliked and reported difficulty sleeping. For the depressive symptoms, a quarter of the males in the sample felt life was worthless, almost a fifth though life was not worth living, 12% wished they were dead and 7% thought about taking their own life some of the time in the past four weeks occasionally or most of the time. Among females, 31% though life was worthless, 21% thought life was not worth living, 18% wished they were dead and 11% thought about taking their own lives.

Tables 3 and 4 use the index of anxiety and depression and the dichotomous measure of experiencing four or more symptoms of anxiety and depression, respectively. Each table is stratified by gender and includes five statistical models, controlling for the socio-demographic factors shown in Table 2. Among males, those who recall either parent hurting the other had a score on the anxiety and depression index that was half a point higher than those who did not recall violence between their parents. Those who recalled their fathers hurting their mothers had a score 0.43 higher and those that remembered both parents hurting each other had an average index score that was 0.69 higher as compared to males who did not recall mutual violence between their parents. The results are similar for females in terms of the magnitude and significance of the coefficients for either parent hurting the other, and their fathers hurting their mothers. Parents mutually committing domestic violence was not associated with females' scores on the anxiety/depression index; however, females who recalled that a parent required medical attention due

to domestic violence had an anxiety/depression score that was one and half points higher on an eight point scale. Table 4, which uses the dichotomized measure of anxiety/depression as an outcome yielded similar results as found in Table 3. Males who remember any domestic violence are 1.43 times more likely to have four or more symptoms and adolescent males who remember their parents hurting each other are almost twice as likely to report experiencing four or more symptoms of anxiety/depression. Adolescent females are one and three quarters times more likely to report four or more symptoms if they recall any domestic violence, are 1.44 times more likely to have four or more symptoms if their fathers hurt their mothers, and over three times more likely to be anxious/depressed if the domestic violence resulted in a parent needing medical attention (OR=3.39).

Figure 2 shows the relationship between reporting a domestic violence between parents and each symptom of anxiety and depression by gender. Overall, as expected, the levels of anxiety and depression are higher among females and than males. Among females who reported any domestic violence between their parents, the associations are in the anticipated direction. Females who recall domestic violence are significantly more likely to report experiencing all symptoms of anxiety and all symptoms of depression except for thinking life is not worth living some or all of the time in the past four weeks. Males who recall any domestic violence between their parents are significantly more likely to report experiencing all symptoms of anxiety, and that life is worthless and not worth living.

Discussion

The association between recall of parental domestic violence and mental health status was assessed in this paper among a cohort of 18-19 year old adolescents in the Philippines. Symptoms of anxiety and depression were common in this cohort and, as expected, fewer adolescents reported the most extreme levels of depression; however, over one-fifth of the adolescents thought that life was not worth living over the past four weeks. Recall of parental domestic violence was significantly associated with

current self reports of anxiety and depression. This association held after controlling for socio-demographic characteristics.

As expected from prior research, there were gender differences in the levels of reporting of symptoms of anxiety and depression, with significantly higher rates among females for nearly all of the symptoms. In addition, the relationship with recall of parental domestic violence is strong. Given the strength of the associations observed as well as the consistency of the findings after multivariate adjustment, it is clear that there is cause for concern for the mental health of adolescents in the Philippines. Those who witness parental domestic violence are at even higher risk for poorer mental health in adolescence.

While the results of this study are strong, there are some limitations. First, with cross-sectional data, it is not possible to sort out whether adolescents who have experienced parental domestic violence have poorer mental health or whether adolescents who have poorer mental health are more likely to report witnessing parental domestic violence. The data are based on self-report during face-to-face interviews which may have led to under-reporting, given the stigma attached to depression and anxiety. In addition, the reports of parental domestic violence are based on adolescents' perceptions and are self-reported, which may be inaccurate. The Youth Self-Report Scale has been used in a number of setting to assess anxiety and depression in adolescents(17), and a recent report of a comparison of scores from seven countries showed that cultural setting only explained 5% of the variance in the anxiety and depression scale, suggesting that the instrument is robust in both developing and developed country settings (18). In the three developing countries studied (China, Jamaica and Turkey) the average score for depression and anxiety was higher than in the developed countries studied.

One of the primary obstacles to better mental health services in the developing country context has been the documentation of need. Currently in the Philippines, 0.02% of the health budget is spent on

mental health, there are 0.4 psychiatrists per 10,000 people, and there is no system of data collection for mental health(4). Too few researchers are investigating this problem in the developing world, and this has been a major concern of the World Health Organization. To further the dissemination of mental health research, there was a meeting in 2003, "Mental Health Research in Developing Countries: Role of Scientific Journals" that highlighted the need for local capacity-building for researchers in developing countries to publish on mental health. Public health researchers need to collect longitudinal data and conduct cost-effectiveness analysis on the treatment of mental health problems in adolescence– particularly since adolescents constitute over 1.2 billion people, with four out of five living in the developing world (19).

This study is among the first to explore adolescent mental health and its association with witnessing violence in the developing world. Both mental health and domestic violence have been of increasing concern in the public health community. In the developing country context, adolescent mental health is understudied and few services are available for those needing treatment. Without services and treatment, adolescents are at risk for continued mental health problems, which, can persist and lead to greater expenses both in terms of costs and in terms of future morbidity and mortality if left untreated (3). In addition, while there has been increasing evidence that domestic violence is a serious public health problem in both the developed and developing world, the intergenerational impact of domestic violence in the developing country context merits further study. In addition, the link between family context and environment, and the important role of domestic violence, in this case, can enable public health researchers and policy makers to design interventions to identify and target at risk adolescents for prevention and treatment of mental health problems.

Table 1: Measures of Anxiety and Depression

Measures of Anxiety: How frequently in the past four weeks did you experience these common feelings or problems. (None of the time, Occasionally, or Most of the time): You were worried? You felt lonely? You felt people disliked you? You had difficulty falling asleep?
Measures of Depression: How frequently in the past four weeks did you experience these common feelings or problems. (None of the time, Occasionally, or Most of the time): You thought of yourself as worthless? You felt life isn't worth living? You wished you were dead? You had the idea of taking your own life?

Table 2: Characteristics of the Sample

	Male	(SD)	N	Female	(SD)	N
Demographic Characteristics						
Age in 2002, 17-19 years	18.18	(0.38)	1089	18.19	(0.42)	962
Urban Residence, %	74.4		1089	73.9		962
Last Grade Completed in School, 1-15 grades***	9.72	(2.84)	1087	10.83	(2.23)	962
Socio-Economic Status, 0-10 household items	5.04	(2.53)	1086	4.96	(2.44)	962
Married or Cohabiting***	4.0			14.2		
Adolescent Recall of Parental Domestic Violence						
Any Parent Hurt the Other, %	48.2		1089	45.4		962
Mom Hurt Dad, %	13.0		1089	14.0		962
Dad Hurt Mom, %	26.7		1089	22.9		962
Both Hurt Each other, %	7.6		1089	7.0		962
Injury Required Medical Attention, %	5.5		1089	5.2		962
Mental Health Measures						
Index of Anxiety & Depression***	2.52	(2.01)	1088	3.09	(2.07)	962
Experienced 4 or more Symptoms of Depression or Anxiety***	26.3%		1088	37.1%		962

*** $p<0.001$ for test of gender differences

Table 3: OLS Regression of Anxiety and Depression Index by Adolescent Recall of Domestic Violence by Sex

	Anxiety Depression Index (0-8) (Adjusted Beta Coefficients)					
	Males	(95%CI)	(n)	Females	(95% CI)	(n)
Recall of Parental Domestic Violence						
Model 1: Any Parent Hurt the Other	0.54***	(0.30-0.58)	(1081)	0.58***	(0.30-0.87)	(959)
Model 2: Mom Hurt Dad	-0.06	(-0.42-0.31)	(1083)	0.34	(-0.08-0.76)	(961)
Model 3: Dad Hurt Mom	0.43**	(0.15-0.71)	(1083)	0.39**	(0.09-0.68)	(961)
Model 4:Both Hurt Each other	0.69***	(0.29-1.09)	(1083)	0.47	(-0.14-1.09)	(961)
Model 5: Injury Required Medical Attention	0.20	(-0.31-0.70)	(1081)	1.51***	(0.96-2.06)	(959)

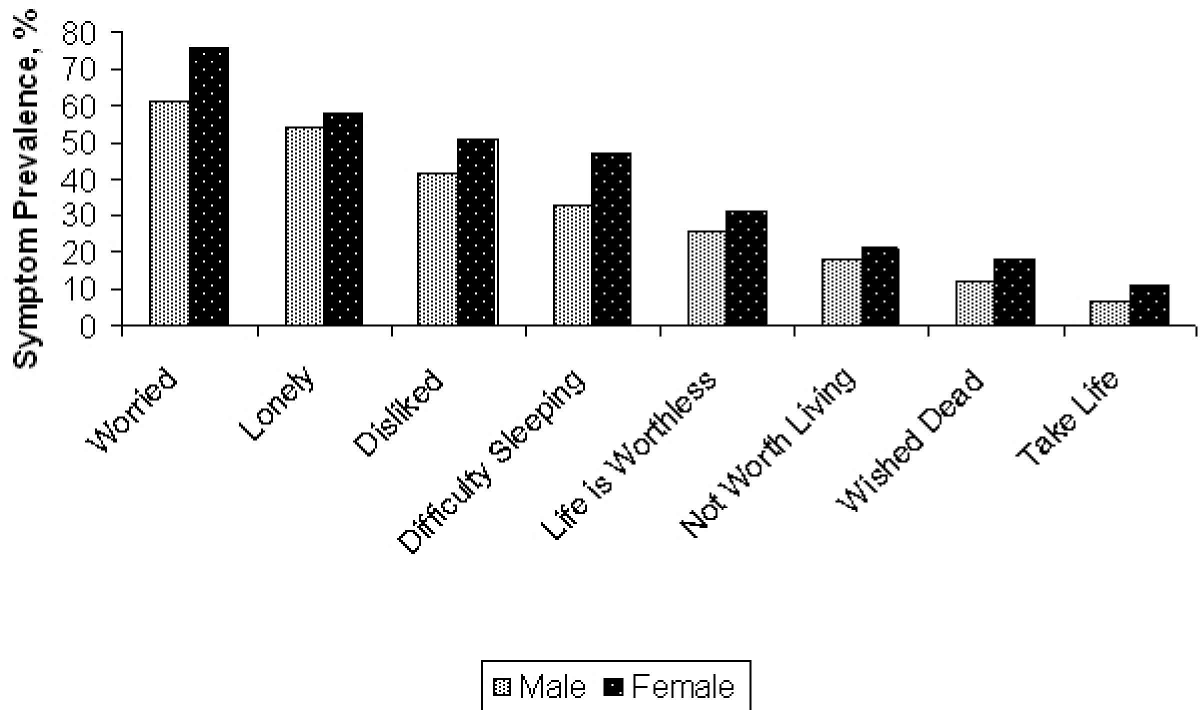
Each model controls for age in 2002, urban residence, last grade completed in school, Socio-Economic Status, and marital status. All standard errors and p-values are corrected for clustering at the barangay level.

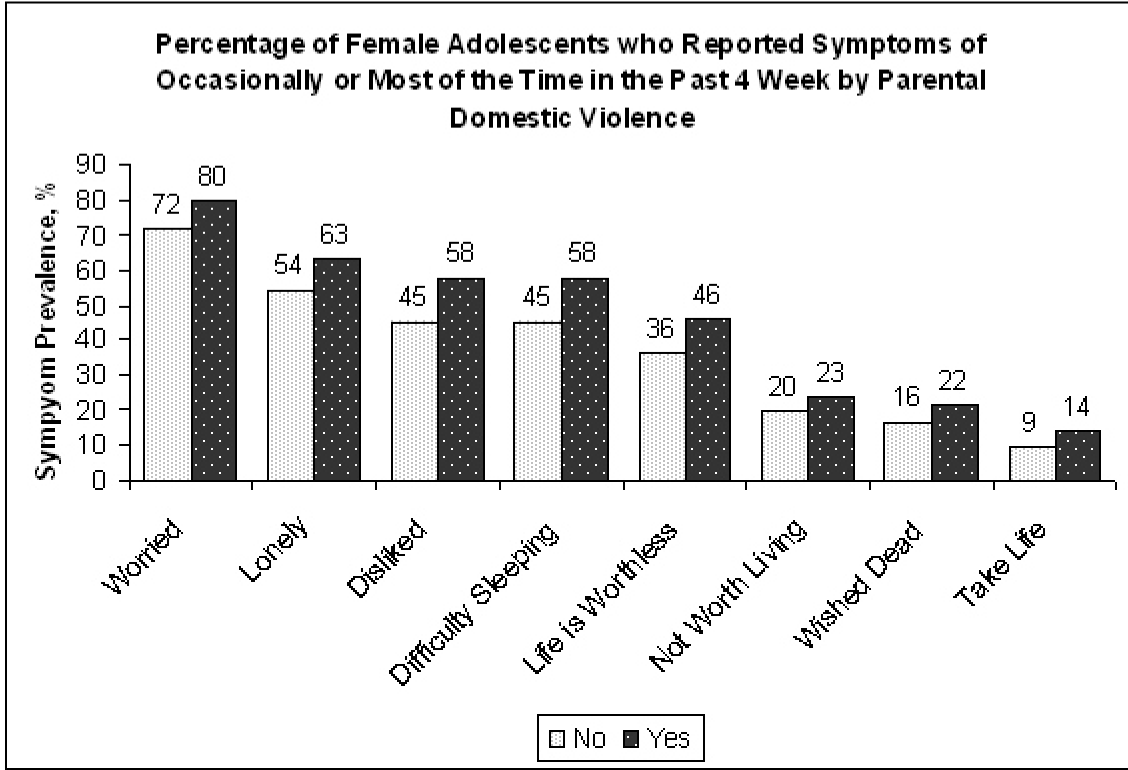
*** $p<0.001$, ** $p<0.01$, * $p<0.05$

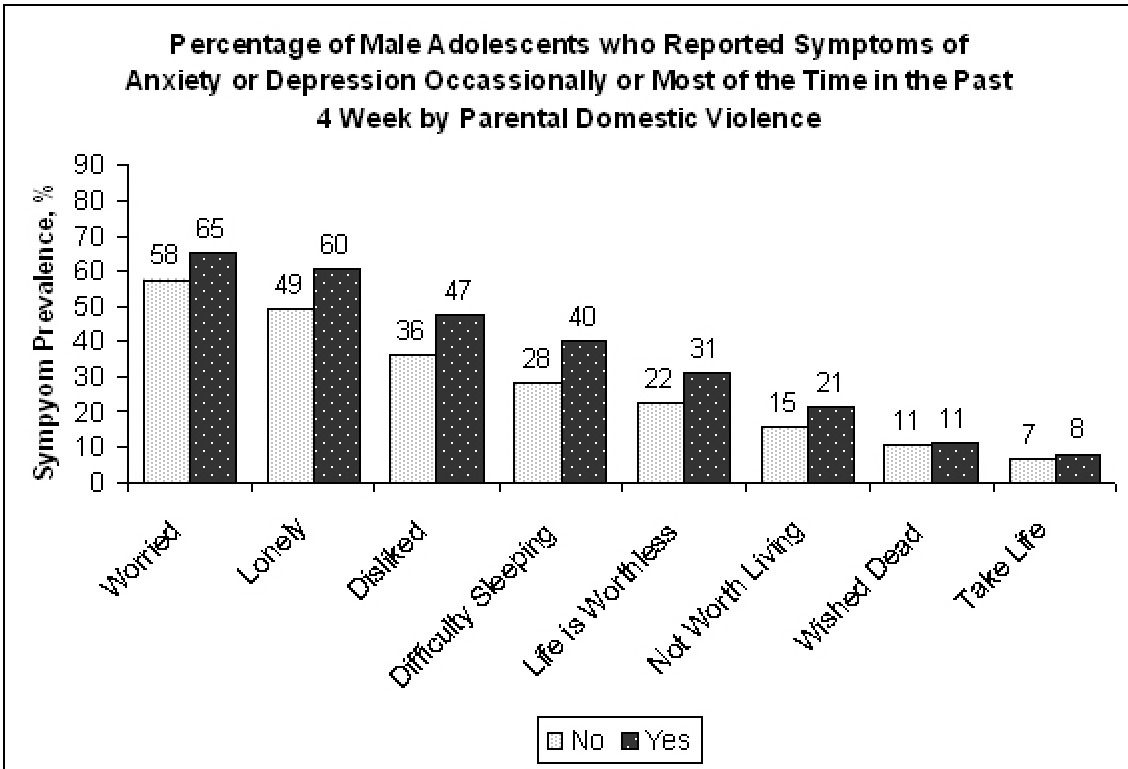
Table 4: Multiple Logistic Regression of Experiencing Four or More Symptoms of Anxiety and Depression and Adolescent Recall of Domestic Violence by Sex

	Experienced Four or More Symptoms of Anxiety or Depression (Adjusted Odds Ratios)					
	Males	(95%CI)	(n)	Females	(95%CI)	(n)
Recall of Parental Domestic Violence						
Model 1: Any Parent Hurt the Other	1.43***	(1.10-1.85)	(1081)	1.75***	(1.31-2.33)	(959)
Model 2: Mom Hurt Dad	0.72	(0.83-3.00)	(1083)	1.36	(0.94-1.96)	(961)
Model 3: Dad Hurt Mom	1.38	(0.97-1.98)	(1083)	1.44*	(1.05-1.96)	(961)
Model 4:Both Hurt Each other	1.93**	(0.90-2.90)	(1083)	1.47	(1.47-2.76)	(961)
Model 5: Injury Required Medical Attention	1.25	(0.70-2.23)	(1081)	3.39***	(2.00-5.73)	(959)

Each model controls for age in 2002, urban residence, last grade completed in school, Socio-Economic Status, and marital status. All standard errors and p-values are corrected for clustering at the barangay level.
*** $p<0.001$, ** $p<0.01$, * $p<0.05$


Percentage of Adolescents who Reported Symptoms of Anxiety and Depression Some or All of the Time in the Past 4 Weeks
Symptom Prevalence, %
80
70
60
50
40
30
20
10
0
Worried
Lonely
Disliked
Difficulty Sleeping
Life is Worthless
Not Worth Living
Wished Dead
Take Life
Male
Female


Percentage of Female Adolescents who Reported Symptoms of Occasionally or Most of the Time in the Past 4 Week by Parental Domestic Violence
Sympyom Prevalence, %
90
80
70
60
50
40
30
20
10
0
72
80
54
63
45
58
45
58
36
46
20
23
16
22
9
14
Worried
Lonely
Disliked
Difficulty Sleeping
Life is Worthless
Not Worth Living
Wished Dead
Take Life
No
Yes


Percentage of Male Adolescents who Reported Symptoms of Anxiety or Depression Occassionally or Most of the Time in the Past 4 Week by Parental Domestic Violence
Sympyom Prevalence, %
90
80
70
60
50
40
30
20
10
0
58
65
49
60
36
47
28
40
22
31
15
21
11
11
7
8
Worried
Lonely
Disliked
Difficulty Sleeping
Life is Worthless
Not Worth Living
Wished Dead
Take Life
No
Yes

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