

Influences of Income, Education, Age, and Ethnicity on Physical Abuse Before and During Pregnancy

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Objective: To examine the influence of socioeconomic status, education, ethnicity, and age on the prevalence of intimate partner abuse before and during pregnancy.

Design: Retrospective correlational analysis.

Setting: Data were collected at six postpartum maternity settings.

Participants: 1,004 women from six ethnic groups.

Main Outcome Measure: Prevalence of intimate partner violence.

Results: 15.9% of study participants reported physical abuse by their current partner and 5.2% reported abuse during pregnancy. Decreased income, not having a high school education, and ethnicity were significantly related to current abuse and abuse during pregnancy in bivariate analyses. Having less than a high school education emerged as the most significant predictor of both abuse variables in multivariate analyses. African American and Puerto Rican women had the highest incidence of abuse in their current relationship. No significant differences were found in rates of abuse during pregnancy among women from different ethnic groups.

Conclusions: The results of this analysis support the notion that abuse is most prevalent among the most disadvantaged women. However, it is not income per se, but rather the highly related variables of education and ethnicity that have the largest effect. Abuse occurs frequently among all women, warranting universal screening during health care encounters. Further research is needed to evaluate relationships between education, ethnicity, income, and abuse. JOGNN, 33, 561-571; 2004. DOI: 10.1177/0884217504269009

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Domestic violence against women is a major public health concern. Based on a recent national survey, it is estimated that 4.4 million adult women are victims of intimate violence every year (Plichta, 1997). Abuse often increases in frequency and severity over time and leads to significant social, psychological, and medical consequences. It is estimated that battered women compose 22% to 35% of women seeking care for any reason in emergency departments and 14% to 28% of women seen in ambulatory medical clinics (Warshaw, 1993).

Abuse during pregnancy has received considerable research attention during the past 15 years. A summary of studies examining violence against pregnant women found that prevalence ranges from 0.9% to 20.1%, with most studies in the 4% to 8% range (Gazmararian et al., 1996). The lowest estimate of abuse was reported in a study in which middle-class private patients responded on a self-administered questionnaire (Sampselle, Petersen, Murtland, & Oakley, 1992). Studies that included poorer women, asked about violence more than once, used in-person interviews, or asked later in the pregnancy reported higher prevalence rates (7.45%–20.1%) (Amaro, Fried, Cabral, & Zuckerman, 1990; O'Campo, Gielen, Faden, & Kass, 1994). For instance, McFarlane, Parker, Soeken, and Bullock (1992) used a three-question abuse assessment screen during the interview to determine frequency of abuse during pregnancy at each prenatal

care visit. They detected a rate of 17% (117/691) with this instrument. Many other studies have found similar or higher rates of abuse during pregnancy (Berrios & Grady, 1991; Bohn, 2002; Cokkinides & Coker, 1998; Curry, 1998; Helton & Snodgrass, 1987; Martin, Harris-Britt, et al., 2001; Martin, Mackie, et al., 2001; McFarlane, Parker, & Soeken, 1995; Pregnancy Risk Assessment Monitoring System [PRAMS], 1994; Wiemann, Agurcia, Berenson, Volk, & Rickert, 2000).

The sequelae of battering during pregnancy noted in the literature include miscarriage, abruptio placentae, low birth weight, premature labor or birth, and intrauterine fetal death (Bohn, 1990; Bullock, & McFarlane, 1989; Chez, 1988; Connolly, Katz, Bash, McMahan, & Hansen, 1997; Helton & Snodgrass, 1987; Murphy, Schei, Myhr, & Du Mont, 2001; Pak, Reece, & Chan, 1998; Williams, McClain, Rosemurgy, & Colorado, 1990). Many of the negative effects of abuse during pregnancy are indirect, including effects resulting from stress, substance abuse, suicide attempts, depression, inadequate prenatal care, and complicated obstetrical and gynecological histories (Bohn & Parker, 1993; Campbell, 2001).

It is essential that women's health care professionals identify and intervene with existing abuse to promote the health and safety of the women they serve. However, despite the endemic nature of abuse, health care providers do not consistently screen their patients for abuse for a number of reasons (Ellis, 1999; Kimberg, 2001; Rodriguez, Bauer, McLoughlin, & Grumbach, 1999; Sugg & Inui, 1992; Thompson et al., 2000). Health care providers may have biases regarding who is at risk and therefore be selective about the clients they screen for abuse. Women with specific demographic characteristics may be screened less frequently because their health care providers believe abuse to be infrequent (McLeer, Anwar, Herman, & Maquiling, 1989; Tilden et al., 1994). For example, White, middle-class physicians who closely identify with the socioeconomic and ethnic backgrounds of their patients often assume their patients are not at risk for violence (Sugg & Inui, 1992). One of the barriers to routine and systematic screening is the belief that only women with very low incomes or limited education are victims of abuse (Sampselle et al., 1992). Other barriers include a fear of offending the patient, powerlessness or lack of control over the situation, time constraints, male provider gender, lack of education, and the setting and type of practice (Parsons, Zaccaro, Wells, & Stovall, 1995; Rodriguez et al., 1999; Sugg & Inui, 1992). For the most part, however, women would not be offended if routinely screened about abuse and feel they could get help easier if routinely screened (Gielen et al., 2000).

Experts on violence assert that the prevalence of violence in the home is larger than is generally assumed. Given the shame and humiliation suffered by battered

women, and the victim-blaming attitudes of our society, it is not likely that women will volunteer information about their situation easily. Women with better socioeconomic situations might not feel disclosure is safe owing to a perceived risk to their status in the community, status associated with marriage, or preservation of appearances. A recent study also identified health care provider characteristics that may hinder disclosure of abuse. These include the woman's fear that she will be judged or blamed for the abuse and perceptions that the provider was uncaring, rushed, too busy, uncomfortable or not really listening (McCauley, Yurk, Jenckes, & Ford, 1998). It is therefore important that health care providers not only routinely assess for abuse during routine and problem-focused exams, but that they convey a sense of genuine interest, caring, comfort, and acceptance as they approach the subject of abuse.

Whether or not abuse prevalence differs among women with varying socioeconomic levels has not been adequately demonstrated. It is generally believed that abuse occurs among women of all socioeconomic levels. However, several sources report a higher frequency of partner abuse and abuse during pregnancy among economically disadvantaged women (Bachmann & Saltzman, 1995; Cokkinides, Coker, Sanderson, Addy, & Bethea, 1999; Dearwater et al., 1998; Gazmararian et al., 1995; Muhajarine & D'Arcy, 1999; PRAMS, 1994; Tollestrup et al., 1999). Studies addressing abuse and socioeconomic status (SES) differ in how they measure SES, making comparisons difficult. Variables that have been used to estimate SES include employment status, educational attainment, and income, but these are not used consistently (Hastings & Hamberger, 1997).

Some sources of abuse statistics only include those episodes of violence reported to the police or perceived as a crime. Many women, especially women with economic means, tend to use private resources to obtain protection and safety (Chez, 1988). In a study of 940 women seeking prenatal care at a private practice clinic in which 35% of the sample reported an annual income of greater than \$50,000, researchers concluded that a decreased annual income was predictive of current abuse but not past abuse. They also concluded that although abuse may be more prevalent among lower income, less educated women, it is not unique to that group (Sampselle et al., 1992). This study, as noted previously, found very low rates of abuse during pregnancy.

Other studies have also found a relationship between decreased income and increased prevalence of abuse during pregnancy (Cokkinides et al., 1999; Hedin & Janson, 2000; Muhajarine & D'Arcy, 1999). This finding is not consistent across studies, however. In a study of 563 middle-class obstetrical patients, researchers found no differences in level of education, employment status, or marital status

between abused women (18%) and those who were not abused (Smikle, Sorem, Satin, & Hankins, 1996).

Relationships between ethnicity and abuse prevalence have also been inconsistently demonstrated in research. The National Violence Against Women Survey found increased abuse rates among African American and Native American women, but not among Hispanic women (Tjaden & Thoennes, 2000). Muhajarine and D'Arcy (1999) also found increased rates of abuse during pregnancy among Canadian aboriginal women. In a large ($n = 2,415$) survey of female members of one managed care organization, Tollestrup and colleagues (1999) found Hispanic ethnicity to increase the risk of violence against women. Because of interrelationships between poverty, employment, and ethnicity, it is difficult to determine the effect of each of these individual variables on abuse prevalence.

These and other studies provide evidence that physical violence is a problem for all women regardless of their social, economic, ethnic, and racial groups. Findings of increased abuse prevalence among poorer women have been inconsistent. Little is known about the effects of SES on overall abuse rates because most abuse-focused studies have included only women in lower SES populations. Poor women are more easily accessed for research. Private clinics or clinics that serve wealthier women might not agree to have their clients questioned about such sensitive issues. The resulting lack of information on abuse among "privileged" women may encourage health care providers to avoid screening when their population is primarily middle or upper class.

The purpose of this study was to explore the prevalence of physical abuse both before and during pregnancy among women across a spectrum of socioeconomic levels. Relationships between monthly income, employment status, education (attainment of a high school diploma), age, ethnicity, and abuse are examined.

Methods

This study is a further analysis of data originally collected (years 1991–1996) to determine the risk of low birth weight among survivors of intimate partner abuse (Campbell et al., 1999; Torres et al., 2000) using a retrospective case control design.

Setting and Sample

The sample included 1,004 ethnically stratified women from six postpartum maternity settings in Florida and Massachusetts. Participants included equal numbers of self-identified Mexican American, Cuban American, Puerto Rican, Central American, African American, and White women. All women of the appropriate ethnicity with low-birth-weight babies and matched controls were

invited into the study. All participants were at least 6 hours postdelivery and were paid \$15 for their participation.

Approval for the study was granted by the Human Subjects Committee at Wayne State University, and approval for this analysis was granted by the Human Subjects Committee at the University of Minnesota. Consent was obtained from all participants. Comfort and privacy were ensured for all the participants during the interview. Women without abuse histories were given written information from a local abuse shelter. Abused women were interviewed in more depth and completed an Advocacy Protocol (King & Ryan, 1992) that included referrals to local domestic violence agencies, a lethality assessment, and safety planning.

The researchers used a modification of the Abuse Assessment Screen (AAS) to collect information about abuse. This screening tool was designed by the Nursing Research Consortium on Violence and Abuse (Parker & McFarlane, 1991). It consists of five questions to determine the presence or absence of abuse within a stated period of time and body sites of injuries. Content validity was established for the AAS by a panel of 12 nurse researchers of White, African American, and Hispanic ethnicities working in the area of abuse against women. Significant ($p < .001$) criterion-related validity was established for the AAS when responses to three questions were compared with scores from the Conflict Tactics Scale (CTS), Index of Spouse Abuse (ISA), and Danger Assessment Screen (DAS) (McFarlane, Parker, Soeken, Silva, & Reel, 1998; Soeken, Parker, McFarlane, & Lominak, 1998).

This analysis focuses on prevalence of physical abuse as determined by two of the AAS questions. Participants were asked the question, "Has your partner ever physically hurt you?" According to the AAS, *physically hurt* includes being "pushed, shoved, slapped, hit, kicked, or otherwise physically hurt by someone." The same question was asked but specified to physical abuse occurring "since the pregnancy began."

Research Procedure

Study participants were invited to participate in the study and interviewed by staff nurses and graduate nursing students trained in collecting data regarding abuse issues. The interview protocol began with numerous nonabuse-focused questions then led into more sensitive topics. The nonabuse portion was completed first as a method of achieving rapport, followed by the AAS and other abuse-focused instruments. Only data collected by face-to-face interview are included in this analysis. For Latina women, all instruments were translated into the appropriate Spanish language dialect and back-translated for assurance of language accuracy.

Three ranges (<\$500, \$501–\$2,000, >\$2,000) were used to categorize income because only 15.6% of participants' incomes were greater than \$2,000 per month. This allowed for a more even distribution across categories. Employment status was categorized as employed, unemployed and not in school, and in school. The education variable was limited to the attainment of a high school diploma. Age was divided into three groups: younger than 18 years (teenaged women), 18–34 years, and greater than 34.

The Statistical Package for the Social Sciences (SPSS 10.0 for Windows, SPSS Inc., Chicago, IL) was used for this analysis. Descriptive statistics were examined to determine the proportion of women in the sample abused by their current partner before and during pregnancy. Chi-square analysis was used to determine relationships between demographic variables and between these variables and abuse. Backwards stepwise logistic regression analyses were conducted to examine the relative contribution of demographic variables in predicting abuse. A significance level of .05 was used for all analyses.

Results

Participants' ages ranged from 15 to 43 years (Mean = 25.7). Eighty-two percent ($n = 824$) of the women in the sample were between the ages of 18 and 34. Relationships between age and the demographic variables of employment status, income, and high school education are presented in Table 1. As would be expected, teenaged women (<18 years of age) were found in comparatively greater numbers among participants who were students, not working, and without a high school diploma. They were also overrepresented in the most impoverished group of women and underrepresented in the highest income category. Women older than 34 years of age composed the largest proportion of women who had graduated from high school and who were in the highest household income group.

Table 2 presents relationships between ethnicity and other demographic variables. Compared to other groups, White women had the highest rate of employment, as well as the highest income, and high school graduation rate. Although African American women had the second highest rates of employment and high school completion, compared to other ethnic groups, they, along with Mexican/Mexican American and Puerto Rican women, were disproportionately represented among those who were less than 18 years of age and those with household incomes of <\$500/month. These same three ethnic groups also reported the highest rates of abuse by their current partner and abuse during pregnancy (Table 3). However, Cuban American women had a similar proportion of women in the <\$500 income group but had one of the lowest rates of reported abuse.

TABLE 1
Relationships Between Age and Employment, Income and Education (N = 1,004)

Demographic Variable	Age n(%)			Total
	<18	18–34	>34	
Employment status ^a				
Working	3 (3.8)	252 (30.7)	34 (34.7)	289 (28.9)
Student	34 (43.0)	64 (7.8)	3 (3.1)	101 (10.1)
Neither	42 (53.2)	506 (61.6)	61 (62.2)	606 (61.1)
$\chi^2 = 114.01, df = 4, p < .001$				
Monthly Income ^a				
<\$500	38 (49.4)	280 (34.0)	22 (22.4)	341 (34.1)
\$501–\$2000	280 (45.6)	418 (50.7)	50 (51.0)	504 (50.3)
>\$2,000	4 (5.1)	126 (15.3)	26 (26.5)	156 (15.6)
$\chi^2 = 22.89, df = 4, p < .001$				
High school education ^a				
yes	11 (13.9)	485 (58.9)	71 (72.4)	567 (56.6)
$\chi^2 = 70.32, df = 2, p < .001$				
Total	79 (7.9)	824 (82.1)	98 (9.8)	

^a1–5 missing values.

One hundred sixty (15.9% of 994; 10 missing) women reported having ever been abused by their current partner. Fifty-two women (5.2% of 994) were abused during pregnancy. All but two of these women (96.2%) had also been abused by their intimate partner prior to the pregnancy; however, two thirds of the women abused prior were not abused during pregnancy. When examined by ethnicity, rates of currently abused women who also reported abuse during pregnancy ranged from 20% to 40%, but these differences were not significant. When examined by age, rates of continued abuse ranged from 14.3% among the

Fifty-two women were abused during pregnancy, and all but two of these women were abused by their intimate partner prior to the pregnancy.

oldest women to 40% among teenagers. This relationship was not significant.

Relationships between abuse and the demographic variables of income, education, and ethnicity are presented in Table 3. Central American women had the lowest

TABLE 2

Relationships Between Ethnicity, Age, and Measures of Socioeconomic Status (N = 1,004)

Socioeconomic Measure	Ethnicity (%)						Total
	African American	White	Mexican, Mexican American	Cuban American	Puerto Rican	Central American	
Employment status ^a							
Working	31.7	47.5	19.8	19.9	22.8	29.5	28.9
Student	17.2	3.5	5.7	6.4	14.7	14.8	10.1
Neither	51.1	49.0	74.5	73.8	62.4	55.7	61.0
$\chi^2 = 83.19, df = 10, p < .001$							
Monthly Income							
<\$500	38.5	14.6	41.7	37.6	45.2	21.3	34.1
\$501–\$2,000	44.9	42.9	56.3	53.9	43.7	74.2	50.3
>\$2,000	16.6	42.4	2.1	8.5	11.2	4.5	15.6
$\chi^2 = 182.55, df = 10, p < .001$							
High school education (yes)	66.8	80.8	31.8	63.8	40.6	59.6	56.7
$\chi^2 = 127.28, df = 5, p < .001$							
Age ^a							
<18	9.6	0.5	13.5	6.5	11.3	3.4	7.9
18–34	84.0	81.8	80.2	76.6	87.1	83.1	82.3
>34	6.4	17.7	6.3	17.0	1.5	13.5	9.8
$\chi^2 = 68.53, df = 10, p < .001$							
Total	18.6	19.7	19.1	14.0	19.6	8.9	

^a3 missing values.

rate of abuse in their current relationship and, along with Cuban American women, had the lowest rates of abuse during pregnancy. Women with high school or more education had a lower incidence of abuse before or during pregnancy than women with less than high school education. Although abuse rates were highest among women with household incomes of less than \$500 (except for Cuban American women), abuse rates were nearly identical among women in the two higher income brackets.

Relationships between income and abuse during pregnancy were not significant. No direct relationship was found between abuse and age or employment status. However, when teenagers were removed from the analyses to examine the effects of demographic variables on abuse among the older women ($n = 922$), a significant relationship between employment status and current abuse emerged in chi-square analysis, with employed women reporting significantly lower rates of abuse (11.7%) than women who were students (18.7%) or unemployed and not in school (18.2%) ($\chi^2 = 6.85, df = 2, p = .033$).

To further evaluate the nature of relationships between abuse by a current partner, abuse during pregnancy, and demographic variables, backward logistic regression analyses were conducted, with income, ethnicity, and high school education being entered into the model in the first step. The variable that emerged as the only significant demographic predictor of both current partner abuse and abuse during pregnancy was education (Table 4). In both regression analyses, adjusted odds of current partner abuse and abuse during pregnancy were lowest among those with at least a high school education (OR = 0.50 and 0.54, respectively).

For lifetime abuse by a current partner, ethnicity was also a significant risk marker. Compared to Central American women, the highest adjusted odds ratios for current partner abuse were found among African American (OR = 6.27, $p < .001$) and Puerto Rican (OR = 4.31, $p = .003$) women. Again using Central Americans as a referent, African American (OR = 3.72, $p = .087$), Puerto Rican (OR = 3.68, $p = .087$), and Mexican/Mexican American (OR = 2.05, $p = .363$) women had a higher inci-

TABLE 3
Chi-Square Analyses of Relationships Between Abuse and Demographic Variables (N = 1,004)

Demographic Variable	Abuse n (%)	
	Current Partner Abuse	Abuse During Pregnancy
Monthly Income ^a		
<\$500	69 (20.3)	23 (6.7)
\$501–\$2,000	69 (13.8)	23 (4.6)
>\$2,000	22 (14.2)	6 (3.8)
	$\chi^2 = 6.75$ $df = 2$ $p = .034$	$\chi^2 = 2.63$ $df = 2$ NS
High school education (yes) ^a	68 (42.5)	21 (40.4)
	$\chi^2 = 15.30$ $df = 1$ $p < .001$	$\chi^2 = 5.76$ $df = 1$ $p = .016$
Ethnicity ^a		
African American	49 (26.3)	14 (7.5)
White	23 (11.8)	7 (3.6)
Mexican, Mexican American	28 (14.7)	10 (5.3)
Cuban American	10 (7.2)	2 (1.4)
Puerto Rican	45 (23.0)	17 (8.6)
Central American	5 (5.7)	2 (2.2)
	$\chi^2 = 39.32$ $df = 5$ $p < .001$	$\chi^2 = 13.43$ $df = 5$ $p = .020$
Total ^a	160 (15.9)	52 (5.2)

^a6–10 missing values.

dence of abuse during pregnancy; however, these differences were not significant.

Discussion

The overall prevalence of lifetime physical abuse by a current partner (15.9%) found in this study is consistent with other research (Campbell, Poland, Waller, & Ager, 1992; Helton & Snodgrass, 1987; McFarlane et al., 1995; Stewart & Cecutti, 1993). The rate of abuse during pregnancy (5.2%) falls within the range of 0.9% to 20.1% cited by Gazmararian and colleagues (1996) and is within the range of most studies (4%–8%). It is also consistent with the rate of abuse during pregnancy (2.4%–5.6%) found in 13 states by the Pregnancy Risk Assessment Monitoring System (PRAMS) between the years of 1993 and 1997 (PRAMS Working Group, 1999). However, the prevalence is lower than rates found in a few studies that asked about violence more than once during pregnancy

by regular health care providers (McFarlane et al., 1995; McFarlane et al., 1992; PRAMS, 1994). In this study, a single interview was conducted during the postpartum period rather than during pregnancy or on multiple occasions.

Among the 160 women reporting abuse by their current partner, only 50 (31.3%) reported continuing abuse during their pregnancy. Neither race nor age was significantly associated with this phenomenon. Most studies report that approximately 50% of battered women continue to be abused during pregnancy (Bohn, 1990). Other studies have also found that women experience a higher prevalence of abuse before pregnancy than during pregnancy (Muhajarine & D'Arcy, 1999; O'Campo et al., 1994). Few studies have examined this difference or have asked about lifetime abuse rather than abuse just prior to pregnancy with the same partner. Those who have investigated this issue in the same couples have also found pregnancy to be a protective period rather than a risk period on average (McFarlane et al., 1992; O'Campo et al., 1994). However, for some women, pregnancy may present a time of increased risk for abuse, and further research is needed to determine what differentiates these women (Campbell, Soeken, Oliver, & Bullock, 1998). There is some indication that a man who abuses his partner during pregnancy is a particularly dangerous man (Campbell, 1995; McFarlane et al., 1998).

In the current study, Latina women composed 61.1% of the total sample. Results of this study differ from those of other research that included Latina women, perhaps in part because of the purposive sampling among four distinct Latina groups. Unlike this study, in which ethnicity did not have an effect on abuse during pregnancy, Latina ethnicity has been found by others to be protective for abuse continuing into pregnancy. In a reanalysis (Bohn & Parker, 1993) of data from a study examining racial differences in abuse and abuse during pregnancy, fewer Latina women who had previously been abused by their partners reported abuse during pregnancy (26%) when compared with Black, White, and other women (40%–50%) (Helton, McFarlane, & Anderson, 1987). The possible explanations offered by Bohn and Parker (1993) for this difference include the reluctance to report abuse during pregnancy among Latina women or the cultural norm of familialism, which may make it less acceptable to abuse a woman during pregnancy among Latinas. In addition, Helton and associates (1987) did not include Puerto Rican women in their study.

Other studies have also found a decreased prevalence of abuse during pregnancy among Latina women (Gaffney et al., 1997; McGrath, Hogan, & Peipert, 1998). McGrath and colleagues (1998) did not specify country of origin among the Latina women in their study. In the study by Gaffney and colleagues (1997), Central

TABLE 4

Logistic Regression Analyses of Demographic Variables as Predictors of Current Partner Abuse and Abuse During Pregnancy

Demographic Variable	Current Partner Abuse*			Abuse During Pregnancy**		
	OR	95 CI	Significance	OR	95 CI	Significance
High school education (yes)	0.50	0.34–0.72	<.001	0.54	0.29–1.00	.050
Ethnicity						
African American	6.27	2.40–16.48	<.001	3.72	0.82–16.79	.087
White	2.57	0.94–7.06	.067	1.85	0.37–9.16	.452
Mexican/Mexican American	2.33	0.86–6.30	.096	2.05	0.44–9.64	.363
Cuban American	1.30	0.43–3.96	.642	0.65	0.09–4.69	.669
Puerto Rican	4.31	1.64–11.35	.003	3.68	0.83–16.38	.087
Central American (referent)						

*Hosmer & Lemeshow Test $p = .23$; model correctly classifies 83.9.

**Hosmer & Lemeshow Test $p = .24$; model correctly classifies 94.8.

American women reported the lowest rates of abuse in the current relationship, whereas Cuban American women were the least likely to be abused during pregnancy. These findings are consistent with the current analyses; however, in this study, other groups of Latina women reported higher rates of abuse. With the exception of African American women, Mexican/Mexican American and Puerto Rican women had the highest rates of abuse in the current study. The proportion of White women abused in the current relationship as well as during pregnancy did not lag far behind those of Mexican American women. The PRAMS Working Group (1999) data also indicate that Hispanic women are at greater risk of abuse during pregnancy than non-Hispanic women. Other researchers have reported a higher risk of abuse among Hispanic women (Tollestrup et al., 1999). Inconsistencies between these studies emphasize the importance of recognizing heterogeneity of culture/ethnicity within racial categories.

Bivariate analysis revealed a significant relationship between physical abuse by a current partner and monthly income; however, this relationship did not remain significant in multivariate analyses. Only the women in the very lowest income group (<\$500/month) experienced higher rates of abuse during the year prior to pregnancy (20%), whereas rates of abuse among women in the two higher income groups were nearly identical (14%). Only 16% of women in this study were in the higher income bracket (>\$2,000/month). Only 3.3% of the women in this group had monthly incomes that would place them into a group that might be considered upper SES (>\$4,000). It may be argued, therefore, that participants in this study represent lower and middle, but not upper income groups. Similarly, an increased rate of physical abuse during pregnancy was found among women in the lowest income category,

but the relationship was not significant. This might be a reflection of the smaller size of the subgroup of women battered during pregnancy ($n = 50$).

High school education and ethnicity were significantly related to both abuse measures in bivariate analyses, and education emerged as the most significant predictor of current partner abuse as well as abuse during pregnancy in multivariate analyses. Women with less than a high school education were at greatest risk of abuse. This is consistent with other research (Cokkinides et al., 1999; Muhajarine & D'Arcy, 1999; PRAMS Working Group, 1999; Saunders, Hamberger, & Hovey, 1993). It is difficult to speculate about the meaning of this relationship

Education emerged as the most significant predictor of current partner abuse and abuse during pregnancy.

without knowing why women did not complete high school. Dropping out of school due to pregnancy or as a result of dysfunction or abuse in their homes of origin and/or substance use or learning or behavioral problems could each themselves be risk factors for partner abuse.

Education was significantly related to ethnicity in this study. Latina women were less likely to have completed high school when compared to White and African American women. The lowest rates of high school completion were found among Mexican/Mexican American (31.6%) and Puerto Rican (40.6%) women, the two Latina groups

with the highest rates of abuse. How long the Latina women or their families had been in the United States was not examined in this analysis, nor was the ethnicity of their partners. It may be that recent immigrants, who come from countries where high school education is not the norm, and who may not speak English, are more vulnerable to being taken in by or unable to leave an abusive partner. It may also be that the frustrations of trying to survive in a foreign country without benefit of education, language skills, or good support systems may be a trigger for abuse.

Relationships between ethnicity and abuse during pregnancy within this sample have been reported elsewhere (Campbell et al., 1999; Torres et al., 2000). That analysis found that less acculturation was significantly related to lower rates of abuse during pregnancy. However, cultural norms of male partners (partner's belief in the supremacy of the wife/mother role for women, and cultural group acceptance of violence against women) were significantly related to a higher abuse prevalence.

Education was also, understandably, significantly related to employment status and income in bivariate analyses. It makes sense that women with less education are less employable and have less earning potential. This may increase their risk of abuse in a number of ways. Abusive men may find financial vulnerability to be one way of entrapping women in a relationship. If a woman is unable to support herself and her children, this may act as a deterrent to leaving an abusive relationship.

The results of this analysis lend some support to the notion that abuse is more prevalent among disadvantaged women: those in the lowest income group and without a high school education who are further disadvantaged by their ethnicity. Stark and Flitcraft (1996) have described models of violence that might explain the differences in violence among differing socioeconomic groups including a sociological or environmental model. This theory holds that disadvantaged groups adopt illegitimate means such as violence to realize their goals when they are denied access to legitimate means by poverty, unemployment,

The results of this analysis lend some support to the notion that abuse is more prevalent among disadvantaged women.

racism, or relative economic disadvantage. Violence within the family is a means to exert control and obtain power in the context of social disadvantage. According to Stark

and Flitcraft, "sociological theories recognize that the means, victims, intensity, and cultural meaning of violence are rooted in group life rather than nature and are patterned by one's race, gender, and class" (p. 142). It is also possible that women with more resources are better able to escape the violent relationship or otherwise make the abuse end.

Ultimately, however, violence against women is a socially constructed method of exerting power and control that is independent of SES. Although it is possible that this tactic is used more often among some subgroups, such as those living in poverty, it is used by both rich and poor to achieve the same ends and for the same reasons. Violence against women is practiced by abusers to ensure that they are in control and can have things their way, within the context of a broader culture that justifies and glorifies violence as a masculine trait.

Another explanation for these results could be differences in reporting among wealthier, more educated women. Privileged women are rarely suspected of being abuse survivors by professionals who find it difficult to imagine abuse in women similar to themselves (Warshaw, 1993). The reverse may also be true. Privileged women may feel greater shame in reporting abuse to providers or researchers in their own social circles. They have a greater social stake than underprivileged women do and therefore have more to lose by losing face.

Limitations

There are a number of limitations to the current study. These data were collected retrospectively, which can result in recall error by the participants. However, the period of recall for abuse during pregnancy was less than a year, and abuse at any distant time in a relationship is not an experience that is easily forgotten. The timing of the data collection could also have affected the reporting of partner abuse. During the immediate postpartum period, women are often focused on preservation of the family unit, making it less likely that abuse would be reported. The postpartum period is also a time of tremendous physiological and psychological adaptation. This, coupled with fatigue and other stresses, may make it less likely that women would chose to deal with abuse issues at this time.

The inclusion of such a large number of Latina women makes generalization of findings to the larger population of women difficult. Because many of the Latina women may have been recent immigrants, the additional variables of language barriers and a lack of understanding of laws regarding violence against women may have influenced not only their experience of abuse but also their willingness to report it to researchers.

Conclusions

The results of this study reinforce the need for health care providers to screen all women for abuse, regardless of socioeconomic status. In practice, the use of an abuse assessment tool needs to become routine in all patient-care encounters. Pregnant women, in most cases, will be with their care provider on multiple occasions during the course of their pregnancy. These women face special risks from abuse and need to be given multiple opportunities to disclose their situation. The postpartum period is possibly the least likely time for this disclosure, but for women without prenatal care, this may be the best opportunity for screening.

Compared with previous research, this study found a lower prevalence of battering during pregnancy among a group of predominantly Latina women. Further research is needed to evaluate the effects of recent immigration, acculturation, and cultural beliefs, as well as education within various Latina groups. There is also a need to ascertain whether the effectiveness of screening techniques may differ between cultures.

Research using large representative samples is needed to further evaluate relationships between income, education, and abuse. Questions must be explored regarding what it is about these factors that may be protective for physical abuse and abuse during pregnancy. The possibility that nonphysical, but equally harmful, forms of abuse (e.g., emotional, economic) are equally or more prevalent among advantaged women must also be addressed. There is an assumption that women with higher household incomes may be better able to cope with abuse and stress owing to increased resources. However, abused women from upper income groups are just as likely to be prevented from accessing resources as other battered women.

Alternately, the possibility that abuse may prevent economic improvement must also be explored. Abusive men often prevent or sabotage their partner's efforts to attend school or seek and maintain employment or career advancement. Women with abuse histories may have problems with depression, anxiety, low self-esteem, and substance abuse that make economic achievement nearly impossible. Long-term cohort studies examining the economic status of families of origin, lifetime abuse and sequelae, and lifetime economic status are needed to truly delineate relationships between abuse and SES.

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