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## Prevalence of Suicidal Thoughts and Attempts Among Pregnant Pakistani Women

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### Abstract

**Objective**—To determine the prevalence of suicidal thoughts and attempts and to identify demographic variables and mental health correlates such as anxiety/depression and domestic violence among pregnant women in an urban community in Pakistan.

**Design**—Cross sectional data from a prospective cohort study are presented.

**Setting**—Women enrolled in an antenatal care clinic and followed to delivery in an urban area of Pakistan

**Population**—Cohort of pregnant women in Pakistan.

**Methods**—1,369 pregnant women were enrolled and interviewed regarding various maternal characteristics and pregnancy outcomes, and were asked specific questions about suicidal thoughts and attempts and administered the Aga Khan University Anxiety Depression Scale at 20–26 weeks of gestation.

**Main outcome measures**—Suicidal thoughts and attempts, verbal, sexual or physical abuse.

**Results**—Overall, 148 of the 1369 (11%) women studied had considered suicide. Of these, 148 women, 67 (45%) had attempted suicide. Eighteen percent of the women were classified as having depression/anxiety, almost half (48%) reported experiencing verbal abuse and 20% reported physical/sexual abuse. Women who had anxiety/depression or had experienced verbal or physical/sexual abuse were significantly more likely to have had suicidal thoughts and attempts.

**Conclusions**—Women at greatest risk for having suicidal thoughts or a suicide attempt were those who were depressed/anxious and had experienced some form of domestic abuse. With the high prevalence of these conditions, attention should be given to the establishment of effective mental health treatment programs for pregnant women.

### Keywords

Suicidal thoughts; suicide attempts; pregnancy; abuse; anxiety/depression

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## Introduction

The World Health Organization estimates that at least one death by suicide occurs every minute, with suicide responsible for an annual global mortality rate of about 14.5 deaths per 100,000 people, the thirteenth leading cause of death worldwide (1). In addition to those who die, many more people engage in non-fatal suicidal behavior, and still more people experience suicidal thoughts. Less than one quarter of those who attempt suicide contact support services or health facilities (2,3). Although having suicidal thoughts is undoubtedly more common than suicidal action, its extent is even less clear.

In Pakistan, suicide attempts are not formally tracked as part of health systems. Since 1947 (when Pakistan came into existence), few reports have been published on suicide (4–6). Two reports showed a preponderance of men over women (6.8:1 and 4.5:1, respectively), with “domestic troubles” listed as the most common cause for both women and men (4,5). A third study reported on 1900 cases of acute poisoning admitted over a 10-year period to a large public hospital in Karachi (6). Suicidal cases accounted for 70% of the total poisoning admissions and more than half (53%) were women. “Negligence by husband” was the reason most commonly given for women’s suicidal behavior (35%); only 15% of the women were under psychiatric care. In related research, the prevalence of depression among Pakistani women may be as high as 66% (7), with married women at higher risk for depression than single women (8,9). High rates of depression amongst Pakistani women suggest their vulnerability to suicidal behavior. Similarly, these studies suggest that being married is significantly correlated with attempted suicide for women. The reasons often were related to social relationships, i.e., trouble with spouse or in-laws (7). Generally, having suicidal thoughts among women has been related to social factors such as domestic violence. Women who have been abused by their intimate partners are almost four times more likely to have suicidal tendencies compared to non-abused women (10). Furthermore, studies have suggested that pregnancy and new motherhood may be periods where women are at particular risk for depressive disorders.

Although pregnancy is a critical time period, few studies have addressed mental health during pregnancy, especially in low-income countries. The few that have addressed this issue suggest that pregnant women have relatively high rates of depression (11,12). As part of a larger study of pregnancy outcomes, we sought to examine risk factors for having suicidal thoughts and suicidal attempts from a community – based sample of pregnant women living in Hyderabad, Pakistan. We reported previously that 18% of the pregnant women had anxiety and/or depression, with physical/sexual and verbal abuse during pregnancy as the most common risk factor (13,14). Of the women studied, 9.7% were physically or sexually abused both before and during pregnancy. In our current study, we sought to examine the prevalence of suicidal thoughts and attempts and whether there was an association with anxiety/depression or verbal or physical/sexual abuse.

## Material and methods

This research was conducted as a part of a prospective observational study of pregnant women in Hyderabad, Pakistan, an Urdu-speaking city of about one million inhabitants. Hyderabad, which lies on the bank of the Indus River in southern Pakistan, is the second largest city of Sindh Province and is home to many cultural and ethnic groups, but primarily Sindhis and Urdu-speaking Muslims who migrated from India at the time of independence and partition (1947). The city is served by outreach health workers of the national program for Family Planning and Primary Health Care Centers. The parent study examined a range of socio-demographic, psychosocial, nutritional, and clinical factors associated with infectious morbidity and pregnancy outcomes among mothers and infants; details have been published

(13–17). The study was led by researchers from the Aga Khan University (AKU), Karachi, Pakistan together with U.S. colleagues from the University of Alabama, Birmingham (UAB), Research Triangle Institute (RTI), and the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). The study team is part of the NICHD Global Network for Women's and Children's Health Research, a multi-country research network.

Outreach workers, referred to as Lady Health Workers (LHWs), were hired, trained and certified to conduct demographic, depression/anxiety and domestic violence interviews and to follow participants for periodic clinical evaluations. To protect confidentiality, the interviews were conducted without family members present. The structured interview was prepared in English, translated into Urdu and back-translated into English. The interview consists of open and close-ended questions with alternative responses. A question-by-question manual of operations was prepared and interviewers trained and certified to ensure that all the interviewers would interpret the items in a similar manner.

The study was approved by the Ethics Review Committee at AKU and the Institutional Review Boards of the UAB and RTI. Each subject provided informed consent. WHO ethical and safety guidelines for research on domestic violence were observed (18). To ensure that study participants received appropriate treatment for depression if indicated, we developed a referral mechanism for therapeutic counseling, with utilization of the services at individual discretion.

LHWs in five selected units of Hyderabad screened 1,879 potentially eligible participants during routine prenatal home visits. Based on a clinic visit, a total of 1,376 (73%) of these women met the inclusion criteria (20 to 26 weeks of pregnancy as confirmed by ultrasound and confirmation of permanent residence). Of those, 1,369 (99%) gave informed consent to participate in the full study. Exclusions included a clinical diagnosis of a life-threatening condition, and/or plans to deliver outside of the project area.

Demographic variables collected included the participant's age, employment status, and husband's employment status. Subjects' receipt of education was recorded, and may have occurred in either a formal school setting, in a religious institution or as informal tutoring. Because women in Pakistan are less likely to be employed or own substantial assets, we estimated socioeconomic status using a measure of overall household wealth. This measure, referred to as the household property index, scored the number of the following items owned by any member of the participant's household: home, cultivated land, vehicle, television, and/or refrigerator. In addition, the level of crowding in the household was measured as the number of people per room.

The Aga Khan University Anxiety and Depression Scale (AKUADS) was developed in the Urdu language, and designed and validated to screen for depression and anxiety in Pakistan. (19) The AKUADS was a 25 question scale regarding symptoms of anxiety and depression (i.e., "have you felt hopeless?") and included a question about suicide: "Have you thought of taking your life?" The current study utilized the validated 13-item short form of the AKUADS (AKUADS-SF) which omits items on the somatic symptoms from the original scale to improve its diagnostic validity with a pregnant population and retains the suicide question (15). Each AKUADS-SF item has four response options (never, sometimes, often, always) scored from 0 to 3. Total scores on the scale ranged from 0 to 39 with higher scores indicating more psychological distress. In an earlier study, we assessed the diagnostic validity of the AKUADS-SF, using the psychiatrist-administered Diagnostic and Statistical Manual of Mental Disorders-fourth edition (DSM-IV) criteria for depression and anxiety as the gold standard criterion, as previously described (13–15). Using receiver operating curve

analyses, we identified a score of 13 as the most appropriate cut-point for optimizing the sensitivity and specificity of the AKUADS-SF for diagnosing depression/anxiety. Therefore, in the current study we classified those women with a score of 13 or higher as meeting the criterion for antenatal depression/anxiety. The Cronbach's alpha for the AKUADS-SF was 0.83 in the current study.

As a part of the interview, participants were asked whether they been verbally, physically, or sexually abused during the current pregnancy or in the six months prior to the current pregnancy. Based on responses to these questions, participants were grouped into one of three categories: 1) no abuse, 2) verbal abuse only and 3) physical or sexual abuse. Because of the small percentage of respondents indicating sexual abuse alone and the physical nature of sexual abuse, physical and sexual abuses were combined for analysis. Participants experiencing domestic violence were asked follow-up questions about the frequency of the abuse and whether they made any of the following responses to the abuse they experienced: verbally or physically fought back, kept quiet, talked to others, returned to parents, or attempted suicide.

Various components of the interview included questions to capture suicidal thoughts and attempts. Questions on suicidal thoughts included whether the woman had thought of taking her life in the past 2 weeks and whether she had thought of taking her life as a result of abuse. Questions on suicidal attempts included whether she had ever attempted suicide and whether she had responded to abuse by attempting suicide. Women who reported suicidal attempts were assumed to have experienced suicidal thoughts as a part of the attempt.

For the statistical analysis, we first estimated the prevalence of suicidal thoughts and attempts by computing the percentage of women in our sample who reported that they had thought of taking their lives and the percentage who had ever attempted suicide. To identify particular subgroups that may be at increased risk for suicidal ideation or who attempted suicide, we used logistic regression models to compare prevalence of suicidal thoughts and attempts according to the following demographic and background characteristics: age, any education (formal or informal), employment, husband's employment, property index, crowding index, depression/anxiety, and type of abuse if any.

We then restricted the sample to participants who reported that they had been verbally, physically, and/or sexually abused. We explored whether more frequent abuse was associated with greater suicidal ideation, classifying women into the following three categories based on frequency of abuse; 1) less than once a month, 2) once a week to once a month, and 3) more than once a week. We conducted logistic regression models predicting suicidal thoughts and attempts based on frequency of abuse, controlling for socio-demographic characteristics. All analyses were conducted using SAS version 9.2.

## Results

The study included 1,369 pregnant women who completed the questions on demographic characteristics, domestic violence and the AKUADS-SF. Sample characteristics are shown in Table 1. Most women were under 30 years of age (71%), had some informal or formal education (84%), and had husbands who were employed (96%), while very few worked for an income (12%). They lived in households averaging four people per room, which also had on average three of the items on the property index. Eighteen percent were classified as having depression/anxiety, almost half (48%) reported experiencing verbal abuse and 20% reported physical/sexual abuse.

Overall, 148 (11%) of the 1,369 women enrolled had considered suicide. Table 2 shows the characteristics significantly associated with having suicidal thoughts, first by percent and p-

value and then by odds ratio (OR), after adjusting for the characteristics listed in the table footnote. Unadjusted odds ratios are also included. Among women who had any education, 12% reported having suicidal thoughts compared to 7% with no education ( $p=0.054$ ). Depression/anxiety was also positively associated with having suicidal thoughts with 35% of those with depression/anxiety reporting suicidal thoughts compared to only 5% without depression/anxiety ( $p<0.001$ ). Because one of the questions in the AKUADS-SF had a question about having suicidal thoughts, we were concerned about overlap between the scale used to determine depression/anxiety and one of our outcomes, suicidal thoughts. We therefore repeated the entire analysis, eliminating the suicidal thought question from the AKUADS-SF (data not shown). There were no differences in any of the relations between depression/anxiety and suicidal thoughts between the two analyses. Of the women who reported verbal abuse, 20% reported having suicidal thoughts compared to only 3% who did not ( $p<0.001$ ) and of the women who reported physical/sexual abuse, 29% reported having suicidal thoughts ( $p<0.001$ ). Additionally, we tested maternal age, educational status, husband's employment and socioeconomic status. None of these were statistically different at  $\alpha = 0.05$  for those with suicidal thoughts compared to no suicidal thoughts (data not shown).

Sixty-seven (45%) of the 148 women expressing suicidal thoughts reported attempting suicide, representing 5% of the entire sample of 1,369. Four characteristics were significantly associated with a suicide attempt (Table 2). Of the women having any formal or informal education, 6% reported a suicide attempt vs. 2% with no education. ( $p=0.023$ ). Of the women with depression/anxiety, 16% reported a suicide attempt compared to only 2% for those without depression ( $p<0.001$ ). Of the women who reported verbal abuse, 9% reported a suicide attempt compared to 1% with no verbal abuse ( $p=0.002$ ). Finally, of the women who reported physical/sexual abuse, 14% reported a suicide attempt compared to only 3% among those who did not ( $p<0.001$ ).

Our results also demonstrate a strong association between having suicidal thoughts and the frequency of both verbal and physical/sexual abuse (Table 3). Thirty-four percent of women who experienced verbal abuse more than once a week reported suicidal thoughts compared to only 6% of those who experienced verbal abuse less than once a month ( $p<0.001$ ). Similarly, 43% of those experiencing physical/sexual abuse more than once a week reported having suicidal thoughts compared to 13% of those experiencing this abuse less than once a month ( $p<0.001$ ).

We also examined reported responses to verbal and physical/sexual abuse. Of the 655 women experiencing verbal abuse, at the time of the abuse, both keeping quiet and verbally fighting back were the most common responses with 64% and 55% of women reporting these behaviors, respectively. Few women returned to their parents (4%) or talked to others (3%) and 1% attempted suicide. Of the 270 women reporting physical/sexual abuse, keeping quiet and verbally fighting back were again the most common responses (65% and 43%, respectively). Other responses included: talking to others (8%), returning to parents (6%), physically fighting back (4%), and attempting suicide (3%).

## Discussion

In our study we found that having suicidal thoughts was relatively common among pregnant women (11%). In addition, 45% of women having suicidal thoughts attempted suicide for an overall suicide attempt rate of 5%. Since our study was based on patient questionnaire data, we had no data on successful suicide attempts. Nevertheless, the percent of women with suicidal thoughts found in our study is consistent with available data from other low-resource countries (19–21). For example, Yusuf et al, studying women in Bangladesh, found



that 5% of maternal mortality was secondary to suicide (19). Ganatra et al, in India, found that 15% of deaths during pregnancy were due to domestic violence with nearly half due to suicide (20). Studies from Great Britain and Australia suggest that, while the rates of suicide are lower, suicide is among the leading causes of maternal death in those locations (22–24). A study from Denmark estimated that 10% of maternal mortality was due to suicide (25). However, there are few studies in either low or high-resource settings that have systematically evaluated the prevalence of suicidal thoughts or attempts among pregnant women.

Not surprisingly, women who tested positive for depression/anxiety were nearly six times more likely to have suicidal thoughts and four times more likely to report a suicide attempt compared to women without depression. Our study also found a strong relation between both verbal and physical/sexual abuse and both suicidal thoughts and actual attempts. The fact that many women chose to remain quiet and few talked to others when subjected to abuse suggests that there may be challenges in seeking help among those who are already marginalized. In the Pakistani culture, a woman may resist sharing social adversity in order to protect her husband and his family. Another barrier to sharing may be the lack of structured social support services available for abused or suicidal women.

Another important finding was that suicidal behavior was higher among women who had formal education, which is consistent with our earlier finding that antenatal depression was higher among educated women (13,14). This association may appear as surprising, but the results are not unusual. One U.S. study reported that the women who died as a result of suicide had higher levels of education than women who died from other causes (26). The underlying reasons for the association between education and suicidal vulnerability have been explored without a specific conclusion to date. We, however, hypothesize that education, while making the women more independent, also leads to more challenging modes of thinking. Lack of tolerance for the existing social structures may lead educated women to be in a more conflicted relation with a restrictive society.

One of the study limitations is that because our sample came from an urbanized, relatively prosperous community in Hyderabad, and most women were ethnically Urdu speaking, the results may not be generalizable to women throughout Pakistan. In addition, our study examined women during pregnancy and thus we did not have a baseline (pre-pregnancy) comparison. However, given these limitations, we have enrolled a large number of pregnant women, using standardized methodologies to evaluate a variety of psychosocial issues, issues which have not been well-studied in this population.

In summary, we found that among a relatively affluent group of urban pregnant women, a significant number indicated having suicidal thoughts and a report of attempted suicide. These characteristics were correlated with depression/anxiety and both verbal and physical/sexual abuse. In Pakistan, assessment for mental health problems among pregnant women does not occur. Antenatal care provides an opportunity for screening for depression/anxiety since many women seek health services during this time. Our study suggests that mental health issues such as depression/anxiety and suicidal thoughts may present during the perinatal period among a substantial proportion of the population. Routine screening for mental health conditions should be considered for routine antenatal and postnatal care. As a correlate, ensuring availability of mental health services to treat women with these conditions would be important for Pakistan.

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## Abbreviations

<b>AKU</b>	Aga Khan University
<b>AKUADS</b>	Aga Khan University Anxiety and Depression Scale
<b>AKUADS-SF</b>	Aga Khan University Anxiety and Depression Scale – short form
<b>UAB</b>	University of Alabama, Birmingham
<b>RTI</b>	Research Triangle Institute
<b>NICHD</b>	Eunice Kennedy Shriver National Institute of Child Health and Human Development
<b>LHW</b>	Lady Health Worker
<b>WHO</b>	World Health Organization
<b>DSM-IV</b>	Diagnostic and Statistical Manual of Mental Disorders-fourth edition
<b>OR</b>	odds ratio
<b>US</b>	United States
<b>REF</b>	Referent group

## References

1. Krug, EG.; Dahlberg, L.; Mercy, JA.; Zwi, AB.; Lozano, R. World Report on Violence and Health. Geneva: World Health Organization; 2002.
2. Kjoller M, Helveg-Larsen M. Suicidal ideation and suicide attempts among adult Danes. *Scand J Pub Health*. 2000; 28:54–61. [PubMed: 10817315]
3. Mann JJ, Apter A, Bertolote J, Beautrais A, Currier D, Haas A. Suicide prevention strategies: a systematic review. *JAMA*. 2005; 294:2064–74. [PubMed: 16249421]
4. Ashraf M. The problem of suicide in Karachi. *J Pak Med*. 1964; 14:156.
5. Ahmad SH, Zubairi H. Changing pattern of suicide and para-suicide in Karachi. *J Pak Med*. 1981; 31:76–8.
6. Jamil H. Acute poisoning: a review of 1900 cases. *J Pak Med*. 1990; 40:131–3.
7. Khan MM, Reza H. Gender differences in nonfatal suicidal behavior in Pakistan: Significance of sociocultural factors. *Suicide Life Threat Behav*. 1998; 28:62–8. [PubMed: 9560167]
8. Fikree FF, Bhatti LI. Domestic violence and health of Pakistani women. *Int J Gynec Obstet*. 1999; 65:195–201.
9. Khan MM, Reza H. Suicide and parasuicide in Pakistan: Time for a change? *J Pak Med*. 1998; 48:292–3.
10. Naved RT, Akhtar N. Spousal violence against women and suicidal ideation in Bangladesh. *Womens Health Issues*. 2008; 18:442–52. [PubMed: 19041596]
11. Qiao YX, Wang J, Li J, Ablat A. The prevalence and related risk factors of anxiety and depression symptoms among Chinese pregnant women in Shanghai. *Aust N Z J Obstet Gynaecol*. 2009; 49:185–90. [PubMed: 19432608]
12. Hussain N, Creed F, Tomenson B. Depression and social stress in Pakistan. *Psych Med*. 2000; 30:395–402.

13. Karmaliani R, Asad N, Bann CM, Moss N, McClure EM, Pasha O, Wright LL, Goldenberg RL. Prevalence of anxiety, depression and associated factors among pregnant women of Hyderabad, Pakistan. *Int J Social Psych.* 2009; 55:414–24.
14. Karmaliani R, Irfan F, Bann CM, McClure EM, Moss N, Pasha O, Goldenberg RL. Domestic violence prior to and during pregnancy among Pakistani women. *Acta Obstet Gynec Scand.* 2008; 24:1–8.
15. Karmaliani R, Bann CM, Pirani F, Akhtar S, Bender RH, Goldenberg RL, Moss N. Diagnostic validity of two instruments for assessing anxiety and depression among pregnant women in Hyderabad, Pakistan. *Health Care Women Int.* 2007; 28:556–72. [PubMed: 17578715]
16. Jehan I, Harris H, Salat S, Zeb A, Mobeen N, Pasha O, McClure EM, Moore J, Wright LL, Goldenberg RL. Neonatal mortality, risk factors and causes: a prospective population-based cohort study in urban Pakistan. *Bull World Health Organ.* 2009; 87:130–8. [PubMed: 19274365]
17. Jehan I, McClure EM, Salat S, Rizvi S, Pasha O, Harris H, Moss N, Goldenberg RL. Stillbirths in an urban community in Pakistan. *Am J Obstet Gynecol.* 2007; 197:257, e1–8. [PubMed: 17826410]
18. Putting women first: ethical and safety recommendations for research on domestic violence against women. Geneva, Switzerland: World Health Organization; 2001. (WHO/FCH/GWH/01.1)
19. Yusuf HR, Akhter HH, Chowdhury ME, Rochat RW. Causes of death among women aged 10–50 years in Bangladesh, 1996–1997. *J Health Popul Nutr.* 2007; 25:302–11. [PubMed: 18330063]
20. Ganatra BR, Coyaji KJ, Rao VN. Too far, too little, too late: a community-based case-control study of maternal mortality in rural west Maharashtra, India. *Bull World Health Organ.* 1998; 76:591–8. [PubMed: 10191555]
21. Gausia K, Fisher C, Ali M, Oosthuizen J. Antenatal depression and suicidal ideation among rural Bangladeshi women: a community-based study. *Arch Womens Ment Health.* 2009; 12:351–8. [PubMed: 19468825]
22. Lindahl V, Pearson JL, Colpe L. Prevalence of suicidality during pregnancy and the postpartum. *Arch Womens Ment Health.* 2005; 8:77–87. [PubMed: 15883651]
23. Oates M. Perinatal psychiatric disorders: a leading cause of maternal morbidity and mortality. *Br Med Bull.* 2003; 67:219–29. [PubMed: 14711766]
24. Austin MP, Kildea S, Sullivan E. Maternal mortality and psychiatric morbidity in the perinatal period: challenges and opportunities for prevention in the Australian setting. *Med J Aust.* 2007; 186:364–7. [PubMed: 17407434]
25. Bødker B, Hvidman L, Weber T, Møller M, Aarre A, Nielsen KM, Sørensen JL. Maternal deaths in Denmark 2002–2006. *Acta Obstet Gynecol Scand.* 2009; 88:556–62. [PubMed: 19353337]
26. Kung HC, Pearson JL, LiU X. Risk factors for male and female suicide decedents ages 15–64 in the United States. Results from the 1993 National mortality follow-back survey. *Soc Psych Epid.* 2003; 38:419–26.



**Table 1**

## Population Characteristics

Characteristic	N	%
Age		
< 25	483	35
25–29	489	36
30	397	29
Any formal or informal education		
Yes	1146	84
No	223	16
Work for income		
Yes	167	12
No	1200	88
Husband is employed		
Yes	1311	96
No	54	4
Property index (number of items owned)...mean (SD)	3 (± 1)	
Crowding index (number of people/room)...mean (SD)	4 (± 2)	
Depression/anxiety		
Yes	248	18
No	1119	82
Verbal abuse		
Yes	655	48
No	714	52
Physical/sexual abuse		
Yes	270	20
No	1099	80
Suicidal thoughts		
Yes	148	11
No	1221	89
Suicidal attempts		
Yes	67	5
No	1302	95

**Table 2**  
Prevalence of Suicidal Thoughts and Attempts by Education, Depression/Anxiety, and Abuse

Variable	N with characteristic		Had Suicidal Thoughts/Attempts			
	N	%	Unadjusted OR (95% CI)	P	Adjusted OR (95% CI)	P
<b>Suicidal Thoughts</b>						
Any formal or informal education						
Yes	1146	132	12	1.67 (0.97, 2.86)	0.065	1.83 (0.99, 3.38)
No	223	16	7	Ref		0.054
Depression/anxiety						
Yes	248	88	35	9.65 (6.68, 13.94)	<0.001	5.49 (3.69, 8.16)
No	1119	60	5	Ref		<0.001
Verbal abuse						
Yes	655	128	20	8.41 (5.18, 13.66)	<0.001	4.20 (2.47, 7.15)
No	714	20	3	Ref		<0.001
Physical/sexual abuse						
Yes	270	77	29	5.78 (4.04, 8.26)	<0.001	2.35 (1.55, 3.57)
No	1099	71	6	Ref		<0.001
<b>Suicidal Attempts</b>						
Any formal or informal education						
Yes	1146	63	6	3.15 (1.14, 8.75)	0.028	3.48 (1.19, 10.21)
No	223	4	2	Ref		0.023
Depression/anxiety						
Yes	248	40	16	7.74 (4.64, 12.89)	<0.001	4.23 (2.44, 7.35)
No	1119	27	2	Ref		<0.001
Verbal abuse						
Yes	655	58	9	7.59 (3.73, 15.45)	<0.001	3.54 (1.63, 7.72)
No	714	9	1	Ref		0.002
Physical/sexual abuse						
Yes	270	38	14	6.04 (3.65, 10.00)	<0.001	2.67 (1.50, 4.74)
No	1099	29	3	Ref		<0.001

Note: Ref=reference category. Adjusted odds ratios control for age, any education (formal or informal), employment, husband's employment, property index, crowding index, depression/anxiety and verbal and physical/sexual abuse. Percentage represents the proportion of women with the characteristic who reported suicidal thoughts (or attempts) (such as 132 (12%) of the 1,146 women with any education reported having suicidal thoughts).

**Table 3**

Prevalence of Suicidal Thoughts and Attempts by Frequency of Abuse

Variable	N	abused	Had Suicidal Thoughts/Attempts				
			N	%	Unadjusted OR (95% CI)	P	Adjusted OR (95% CI)
<b>Suicidal Thoughts</b>							
Verbal Abuse (N=655)	210	71	34	7.66 (2.97, 19.80)	< 0.001	5.66 (2.10, 15.26)	< 0.001
More than once a week							
Once a week to once a month	365	52	14	2.49 (0.96, 6.45)	0.060	2.06 (0.76, 5.54)	0.153
Less than once a month	80	5	6	Ref		Ref	
<b>Physical/Sexual Abuse (N=269)</b>							
More than once a week	60	26	43	5.27 (2.22, 12.52)	< 0.001	4.90 (1.94, 12.39)	< 0.001
Once a week to once a month	138	42	30	3.01 (1.37, 6.62)	0.006	2.61 (1.13, 6.04)	0.025
Less than once a month	71	9	13	Ref		Ref	
<b>Suicidal Attempts</b>							
Verbal Abuse (N=655)	210	34	16	7.53 (1.77, 32.14)	0.006	5.25 (1.19, 23.23)	0.029
More than once a week							
Once a week to once a month	365	22	6	2.50 (0.58, 10.86)	0.221	2.06 (0.46, 9.18)	0.344
Less than once a month	80	2	3	Ref		Ref	
<b>Physical/Sexual Abuse (N=269)</b>							
More than once a week	60	15	25	5.58 (1.74, 17.92)	0.004	5.10 (1.54, 16.93)	0.008
Once a week to once a month	138	19	14	2.67 (0.87, 8.19)	0.085	2.34 (0.74, 7.38)	0.146
Less than once a month	71	4	6	Ref		Ref	

Note: Ref=reference category. Analyses include only women reporting verbal, physical, and/or sexual abuse during pregnancy or in the six months prior to pregnancy who provided information on frequency of abuse. Adjusted odds ratios control for age, any education (formal or informal), employment, husband's employment, property index, crowding index, and depression/anxiety. Percentage represents the proportion of women with each frequency of abuse who reported suicidal attempts or thoughts (such as 71 (34%) of the 210 women who were verbally abused more than once a week reported suicidal thoughts).