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Associations between the Social Organization of Communities and Psychiatric Disorders in Rural Asia

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Abstract

Purpose—We provide rare evidence of factors producing psychiatric variation in a general population sample from rural South Asia. The setting is particularly useful for demonstrating that variations in the social organization of communities, often difficult to observe in rich countries, are associated with important variations in mental health.

Methods—Clinically validated survey measures are used to document variation in psychiatric disorders among 401 adults. This sample is chosen from a systematic sample of the general population of rural Nepal, in a community-level controlled comparison design. Multilevel logistic regression is used to estimate multivariate models of the association between community-level nonfamily social organization and individual-level psychiatric disorders.

Results—Schools, markets, health services and social support groups each substantially reduce the odds of depression, post-traumatic stress disorder (PTSD), intermittent explosive disorder (IED) and anxiety disorders. Associations between schools, health services and social support groups and depression are statistically significant and independent of each other. The association between access to markets and PTSD is statistically significant and independent of other social organization and support groups.

Conclusions—Community integration of some nonfamily social organizations promotes mental health in ways that may go unobserved in settings with many such organizations. More research on the mechanisms producing these associations is likely to reveal potential avenues for public policy and programs to improve mental health in the general population.

Keywords

Anxiety disorders; Depression; Post-traumatic stress disorder (PTSD); Intermittent explosive disorder (IED); Mental health; Rural Asia; Social organization

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Research in many countries documents the substantial prevalence of psychiatric disorders across many contexts [1-3]. Unfortunately, though this research spans many countries, the vast majority of the empirical evidence comes from populations of the European Diaspora. With a small number of exceptions [4-10], evidence regarding the prevalence of psychiatric disorders is particularly rare from culturally distinct populations such as those in rural Africa and rural Asia [1, 2]. Because rural Asians account for an enormous fraction of the world's population, evidence from this population is an especially high scientific priority. In this study, we use psychiatric health measures linked to an ongoing panel study of social organization and family in rural Nepal to document psychiatric disorders in a rural Asian population. Moreover, we exploit recent changes in this rural agrarian setting to advance scientific understanding of how community context may shape psychiatric health.

In 1897 Durkheim proposed that the transition away from family organization of social life toward market/corporate-organized social life promoted anomie, depression, and suicide [11, 12]. This theoretical framework remains a powerful force in explaining change and variation in mental health in rich, industrialized countries such as the United States today [13]. However, this perspective fails to recognize the potential for nonfamily social organizations in the local community to provide social support, a key component of social capital that may actually enhance mental health [11]. Conceptually a key issue is the presence of these nonfamily social organizations in close proximity, where they can become part of the fabric of everyday life [11, 14]. In fact, only in extremely rural, highly subsistence oriented settings is it possible to directly compare communities with their first local nonfamily organizations to communities without such organizations. Rural Nepal offers this setting [14], providing an important opportunity to document the potential of these nonfamily organizations to shape mental health in the general population.

Although it is possible that many different dimensions of social capital are relevant to mental health [15], prior research clearly identifies social support as a positive influence on mental health [2, 16-18]. The nonfamily organizations we examine each include dimensions of social support along with instrumental support, creating the possibility that each could be related to psychiatric disorder in somewhat different ways. Schools build human capital as well as social relationships, markets increase access to goods, but also alter social networks, health services provide care even as they create new relationships, and informal social support groups channel financial assistance while enhancing support networks [14]. This multidimensional nature of new organizations may be precisely why previous investigations yield a myriad of different results sometimes in opposing directions [19, 20]. This study advances our understanding of these potential multidimensional associations by investigating integration of four distinct nonfamily organizations into the local community and assessing the association of each with four different psychiatric disorders. This design affords the opportunity to detect different associations across disorders and to identify the independence of these associations. Overall, we expect those nonfamily organizations with the broadest, most long-lasting consequences to have the broadest consequences, but those which emphasize short-term services to have more narrow consequences. Education in schools is particularly notorious for producing long-term change in skills, beliefs, and relationships that shape health, so we expect this dimension of local communities to

particularly powerful [11, 15, 21]. We expect health services and markets to provide social support with more narrow benefits.

We use the analytic leverage provided by a general population with dramatic variation in close proximity to the most basic levels of nonfamily school, markets, health services and informal social support groups to assess the association of these with several psychiatric disorders. We test the hypothesis that these types of organizations may be associated with fewer psychiatric disorders, at least with respect to depression (MDD), post-traumatic stress disorder (PTSD), intermittent explosive disorder (IED) and anxiety disorders. This empirical investigation of remote, rural Asia has the potential to illuminate the connections between widespread change in social organization and psychiatric disorders. Such research may be as relevant for improving psychiatric health in rich, industrialized settings as it is in poor, agrarian settings.

Methods

Research Setting

The study examines the Western Chitwan Valley in south central Nepal. This setting was entirely devoted to subsistence agriculture until the mid-1970s, when road construction began to connect the valley to other parts of Nepal and India. Between 1977 and 1987 this change transformed parts of the setting from an isolated valley to a busy commercial hub, creating tremendous variation in the social organizations of communities and daily social life [14, 22-26]. Despite these changes, the valley remained predominantly agrarian with over 82% of households in the study area still involved in farming or animal husbandry [27]. This setting was also characterized by significant armed conflict from 1997-2006, creating a large number of traumatic events [28, 29]. Recent evidence demonstrates exposure to these traumatic events is strongly associated with psychiatric disorders, but little is known about the potential associations with variations in the social organization of communities [29].

Data

To document psychiatric disorders in the general population, we used cutting-edge survey tools in mental health research, including state-of-the-art research instruments (World Mental Health (WMH) Composite International Diagnostic Interview (CIDI) 3.0), protocols, data entry and data coding, and validation procedures (Structured Clinical Interview Diagnosis (SCID) [2]. We adopted and translated these well-tested research instruments, protocols, and validation procedures to the Nepali language and the cultural context of Nepali society [31]. As documented in Ghimire et al. [31], this process produced high levels of clinical validation in our measures of depression, PTSD, IED, anxiety, and panic disorder—levels of validation comparable to the most successful WMH country studies. The Nepali CIDI 3.0 questionnaire was administered to a general population systematically selected sample of 401 individuals living in the Western Chitwan Valley. Using the Chitwan Valley Family Study (CVFS) sampling frame—a longitudinal panel study of 151 communities, 2300 families, and 15000 individuals [27]—respondents were chosen using a two-stage sampling procedure. First, based on the distance to the urban center, the study area was divided into three distance strata. Second, a sample of 4 to 6 neighborhoods each consisting

of between 10 and 15 households were randomly selected from each stratum. We purposefully chose two additional neighborhoods from slum areas that were expected to have high prevalence of psychiatric disorders. This process yielded 17 neighborhoods (communities) with 198 households. Third, once a neighborhood was selected, all the individuals age 18 and above residing in those households (eating and sleeping most of the time in the last month) within the neighborhoods were interviewed. This sampling procedure produced the 401 individuals; survey response rate was 91%.

Measures

Psychiatric disorders—The analysis we present investigates psychiatric disorders measured using this Nepali translation of WMH CIDI 3.0: Depression, PTSD, IED and anxiety (combining panic disorder and generalized anxiety disorder). The CIDI is a fully structured diagnostic instrument that assesses the lifetime and recent prevalence of disorders according to both ICD-10 and the DSM-IV psychiatric classification systems. DSM-IV criteria were used to generate the results reported here. We use the lifetime prevalence of depression, PTSD, and IED. If the respondent was diagnosed by the CIDI as ever positive for that specific disorder it is coded ‘1’ and ‘0’ otherwise. By combining lifetime prevalence of generalized anxiety disorder (GAD) and panic disorder (PD), we also create a measure of anxiety disorder coded ‘1’ if either disorder is present and ‘0’ if neither is present.

Note that the population of Chitwan is predominantly the second generation from families that migrated there from Nepal's hill and mountain regions [14]. Although this migrant history may produce a more healthy population on average, our investigation focuses on variations within this population. Please see Ghimire et al. 2013 for a more detailed comparison of prevalence of psychiatric disorders in this population to other populations [25]. Also note that prior to the recent introduction of nonfamily health services in rural Nepal, care for the mentally ill was provided mainly by family members [25, 27].

Social organization of communities—Our measures of the social organization focus on community-level integration of nonfamily organizations by recording the walking distance, in minutes, from the respondents’ neighborhoods to the nearest nonfamily school, market, and health service. The theoretical and methodological basis for this approach are explained in detail in the sociological literature on the topic [14, 22, 27, 32]. The specific measures come from the Neighborhood History Calendar approach which is explained in detail elsewhere [24, 33]. We use dichotomous measures that are coded ‘1’ for neighborhoods that were within ten minutes of a school or market and twenty minutes of a health service. Tests of other threshold values demonstrate results similar to those presented here. We use a dichotomous measure coded ‘1’ if an informal social support group is present in the neighborhood. These groups include religious groups, youth clubs, agriculture interest groups, rotating credit clubs, occupational unions, community development committees, and other common interest clubs. The neighborhood-level distributions of these organizations are summarized in Table 1. Note that as explained elsewhere, these organizations were distributed through the setting orthogonally to each other, so few neighborhoods have all four and there is little pattern to the mix for those with more than one—these factors greatly simplify the estimation of independent associations with each organization [14, 27].

With these simple measures of community-level social organization, we investigate and report the bivariate associations between nonfamily social organization and psychiatric disorders. However, because a variety of other factors may shape variation in psychiatric disorders in this setting, we test these associations in a multivariate model. We explain below.

Family characteristics—Compared to unmarried individuals, data from many settings demonstrate that married individuals have lower rates of depression and anxiety [34-38]. Those from larger families also appear to enjoy fewer psychiatric disorders [39, 40]. Substantial demographic research, including research in Nepal, documents the potential of nonfamily social organization to change family processes such as marriage and childbearing. The spread of schools, markets, health services, and informal social support groups is associated with delays in marriage, increasing fertility limitation, and smaller family sizes, with the spread of mass education having particularly strong consequences [14, 22, 24-26, 41-43]. These nonfamily organizations, therefore, may work to increase the likelihood of disorders through delayed marriage and reduced family size. To control for this potential source of positive association between nonfamily social organization and psychiatric disorder we test multivariate models with measures of marital status and large family size. In our analyses marital status is a dichotomous measure, where never married, divorced, separated, and widowed are all coded as not married. Those from larger families are coded ‘1’ if at least four people live in the respondent's household, otherwise coded ‘0.’ Distributions for these and other individual-level factors are provided in Table 1.

Trauma—As stated, the setting is characterized by a recent, long-term armed conflict. This conflict produced widespread exposure to trauma. Because of the special relationship between exposure to trauma and experience of psychiatric disorders, especially PTSD, we also measured the number of traumas each respondent ever experienced. Respondents were asked about 32 different types of trauma. Previous research with these measures demonstrates that exposure to trauma is strongly associated with psychiatric disorders in this population [29]. Both dichotomous measures of ever experiencing trauma and counts of total number of traumas experienced are associated with elevated rates of psychiatric disorders [29]. Here we estimate multivariate models both with and without a count measure of the total number of traumas experienced to investigate the sensitivity of observed associations with nonfamily social organizations.

Demographic characteristics—Finally, previous research also demonstrates a small number of demographic factors are often associated with variations in psychiatric disorders [29, 44-48]. Therefore, we also use measures of age, gender, and education to test for the independence of associations with community-level factors from other demographic associations between covariates and psychiatric disorders. Age is coded in years of age and gender is coded ‘1’ for female or ‘0’ for male. Education records the number of years of formal schooling the respondent completed.

Statistical methods

To investigate the association between community nonfamily organizations and psychiatric disorders we used logistic regression models. We examined how nonfamily organizations in the community were associated with the likelihood of ever having had depression, PTSD, IED, and an anxiety disorder. Each psychiatric disorder was examined in a separate series of models. Each nonfamily organization was tested singly in a model to examine the total effect of each, and then all four types of organizations were tested in a model together to examine the independent effects of each organization. We begin by estimating these associations without any other covariates in our models—then we retest adding demographic background measures, family characteristics, and traumatic experience to learn how robust these estimates are by controlling for other factors.

Because our analyses focus on the effects of nonfamily organizations on the individual, the ideal strategy is to use multilevel modeling techniques to adjust for clustering of individuals in communities [49, 50]. This strategy appropriately adjusts the standard errors of community-level variables. We used this strategy in the multilevel, multivariate models. Because IED and anxiety disorders are rare in this setting (see discussion of Table 2 below) there was insufficient variance to estimate these complex multivariate models. Consequently, we report only the bivariate associations for IED and anxiety disorders.

Results

Frequencies of Psychiatric Disorders

As shown in Table 2, and explained in greater detail in Ghimire et al. [31], almost nine percent of respondents had ever experienced any of the psychiatric disorders investigated in this study. This was slightly higher for women, at 9.32%, than for men, at 7.88%, although the difference is not statistically significant. For women, 5.93% had ever experienced depression, compared to 4.85% of men. And 5.51% of women had experienced PTSD, compared to a much lower 1.21% for men. This is the only disorder for which the gender difference is statistically significant ($p<0.01$). Finally, 0.85% of women and 2.42% of men had experienced IED; and 1.27% of women and 0.61% of men experienced an anxiety disorder (GAD or PD).

Social Organization of Communities and Psychiatric Disorders

We find that nonfamily organizations in the community are generally associated with a lower likelihood of experiencing psychiatric disorders. In all the bivariate associations we test (not shown in tables), nearby nonfamily schools, health services, markets, and social support groups are each associated with lower odds of depression, PTSD, IED and anxiety. The magnitude and statistical significance of the associations differ by disorder. However, the magnitude and significance do not change greatly when the associations are estimated in multivariate models with measures of other relevant individual-level experiences. For parsimony, we present the results from our multivariate models.

Our results for depression are presented in Table 3. All four dimensions of nonfamily organization reduce the odds of depression, though the association with markets is not

statistically significant (Model 3, Table 3). These negative associations are independent of individual experiences with trauma, marriage and family size as well as sex, age and education. For example, the odds ratio of 0.17 for the association between living in a neighborhood with a school nearby and experiencing depression (Model 2, Table 3) means those in communities with schools are nearly six times less likely to experience depression. These are strong, statistically significant and independent associations.

Interestingly, however, these community-level associations are not entirely independent of each other. In Model 6 of Table 3, all four associations are somewhat attenuated when they are simultaneously included in the same model. Here the pattern of statistical significance also changes. The association between depression and schools and support groups remains significant, the association with health services does not, but the association with markets is now significant. But even in this somewhat different level of statistical significance and attenuated associations, the associations remain large. The odds ratio of 0.40 for the association between living in a neighborhood with a school and experiencing depression (Model 6, Table 3) means those in communities with schools are two and half times less likely to experience depression. All four of these associations are similar—the combined additive associations imply that living in a neighborhood with two or three of these services is associated with much, much lower odds of experiencing depression.

For PSTD, again all four dimensions of nonfamily social organization are associated with lower odds of PTSD (Table 4). The associations with schools, markets, and health services are each statistically significant (Models 8-10, Table 4). Just as we found for depression, however, when all four types of nonfamily social organization are included in the same model, the associations are somewhat attenuated and only markets nearby remains significant. This association is large. The estimated odds ratio of 0.17 (Model 12, Table 4), means that people with nonfamily markets nearby were nearly six times less likely to have ever experienced PTSD.

All four types of nonfamily social organizations are also associated with lower odds of IED, but because IED is rare in this population we do not present multivariate models. Only the association with schools was statistically significant, but again the association was quite large (multivariate estimate including all controls used in other models). The estimated odds ratio for this association was 0.17 (not shown in tables), meaning those living with schools nearby are nearly six times less likely to experience IED. Finally, in examining anxiety disorders, all four types of nonfamily organizations were associated with lower odds of anxiety, but none of these associations were statistically significant. The magnitude of these associations varied from 0.56 to 0.24 (not shown in tables), with the largest associations for schools and markets.

Other Key Associations

The associations among trauma, family, and demographic background and these disorders are discussed in substantial detail elsewhere [29]. Trauma had strong associations with all disorders, except for anxiety [29]. Age had a statistically significant effect increasing anxiety disorders (not shown in tables). Gender had a significant and strong association with PTSD and anxiety, with women about 10 times more likely to experience PTSD (Model 7,

Table 4) and at least five times more likely to experience anxiety. Household size had a significant association reducing the experience of both depression and PTSD (Tables 3 and 4).

Discussion

As Ghimire et al. [31] demonstrate, with sufficient time and attention it is possible to create a clinically valid and reliable general population survey instrument to assess the variations in psychiatric disorders in rural parts of South Asia. A crucial payoff is the opportunity to assess associations between mental health and factors that may be so widespread in rich, industrialized settings that lack of variation makes it difficult to see the consequences. Community integration of nonfamily social organizations fits that description. In most rich settings schools, markets, health care, and informal social support groups are everywhere – so widespread that we cannot easily evaluate their influence on health. Rural Nepal provides the opportunity to compare those living with such organizations to those living without, all from the same population. In the results we learn that these nonfamily social organizations are associated with better mental health and that some of these associations are large and significant.

Our results document important variation across disorders. We find both anxiety disorders and IED are relatively rare in this population. The anxiety disorders we are able to investigate are generally less common in communities with nonfamily social organizations, though these associations are not significant. IED is especially rare in this setting, but schools are associated with significantly reduced odds of IED.

Both depression and PTSD are more common in this setting. All four community factors are associated with reduced odds of PTSD, but only markets have a substantial, statistically significant, and independent association with PTSD. Depression is the most strongly associated with community-level social organization. Nearby schools, markets, health services, and informal support groups are each associated with substantially lower odds of depression. When all four associations are estimated simultaneously, the associations with schools, markets, and social support groups each remain statistically significant, independent and substantial. Thus each type of disorder we investigate shows a unique pattern of associations with social circumstances, indicating different disorder-specific mechanisms may be at work. Advances in our understanding of these mechanisms will demand disorder-specific investigation.

Likewise, each of the different dimensions of community organization appears to be associated with a different set of disorders. Schools are associated with significantly lower odds of depression, PTSD, and IED, but not anxiety disorders. Schools have many long-term individual consequences, including building new skills and abilities, improving access to information via literacy, increasing the ability to obtain and change jobs for pay, radically delaying family formation and changing relationships within the family [22, 51]. Any of these mechanisms, or combinations, may give individuals tools to navigate the other adversities they face in life and lower the odds of depression, PTSD, and IED—more research on these mechanisms is urgently needed. Perhaps the same was not true for anxiety

because living near schools, pressure to attend school, and pressure to succeed at schooling may lead to somewhat elevated anxiety, contradicting the positive consequences of social support and instrumental advantage.

Community integration of markets is associated with significantly lower odds of depression and PTSD, but it does not lower the odds of IED or anxiety. In this setting, market places create a new source of materials, transportation, and social relationships, each of which may increase the means of individuals and families to reduce stressful and traumatic events—potentially reducing the odds of depression and PTSD. Likewise, it is possible that the concentration of Nepal's recent armed conflict in more remote locations created an association between living near more densely populated market areas and lower likelihood of PTSD [25]. Again, more research on the specific mechanisms tied to community-level variations is a high scientific priority.

Integration of nonfamily health services is also significantly associated with reduced odds of depression and PTSD, but has no association with IED or anxiety. Health services in this area provide medicines, treatments and medical expertise improving the population's ability to address threats to health and related wellbeing. They also provide community outreach programs that can encourage social support. Community integration of social support groups is significantly associated with reduced depression, but is not associated with PTSD, IED or anxiety. In this setting these groups are a crucial source of social support from outside the immediate and extended family, providing yet another resource that may improve resilience.

Of course, the study we present here is also characterized by some important limitations. First, this study only includes 401 respondents, limiting the statistical power to detect these important associations, particularly for more rare disorders. Studies of a larger sample of the general population could provide a crucial tool for scientific advance—here we are limited to documenting some of the largest associations. Second, this small-scale study was also limited to a small number of covariates. More detailed and comprehensive measures of communities, families and individual life histories would provide the means for a more thorough investigation of the potential for other factors to attenuate the associations documented here. Third, this study does not investigate the potential mechanisms producing these interesting associations. New studies investigating those mechanisms are a particularly high scientific priority to advance our understanding of the possibility of changing communities to improve mental health.

Changes in social organization can be a particularly powerful force in shaping individual wellbeing because these organizational changes alter both access to material resources and social relationships with others [11, 12, 14, 52, 53]. As psychology and neuroscience unlock new understandings of the human response to social circumstances, it becomes increasingly clear that individuals' relationship to social organization is a potent element of psychological wellbeing [13]. Durkheim's classic work on the topic [12] argues the spread of nonfamily social organizations increases suicidal behavior. More than 100 years later, we now have the scientific tools to examine both the variance across psychiatric disorders and the mechanisms of social change in much greater detail. Detailed investigation of changing community-level social organization and other outcomes demonstrate that each specific

dimension can have independent, different and sometimes opposing consequences for individuals and families [14, 22]. That research is consistent with the psychiatric findings presented here. Understanding the mechanisms connecting local social organization to mental health will require detailed investigation of specific dimensions of nonfamily social organization and specific psychiatric disorders. Understanding these mechanisms is a high priority because research across the century from Durkheim's work [12] to now consistently finds they are potent [13].

Research in remote rural settings like Nepal should be among the highest scientific priorities. Such settings provide unique opportunities to measure and investigate the specific mechanisms linking nonfamily social organization to mental health, granting new insight into how changes in social organization shape the wellbeing of individuals. By advancing research in settings where nonfamily social organizations are rare and new, we have the means to detect both positive and negative consequences of specific dimensions of change. This information can provide fundamental tools for adjusting community organizations and services in a wide range of settings to accomplish more positive mental health outcomes.

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Ethical Approval

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Table 1

Descriptive statistics for neighborhood and individual characteristics in the study.

Neighborhood context	% communities with service	Std deviation
School in 10 minutes walk	87.50	0.34
Market in 10 minutes walk	75.00	0.45
Health service in 20 minutes walk	62.50	0.50
Social support group in neighborhood	68.75	0.48

Trauma and demographic characteristics	Range	Mean	Std deviation
Number of traumas	0-13	1.70	1.90
Age	17-90	37.41	15.08
Female	0,1	0.59	0.49
Married	0,1	0.83	0.38
Household size (4+ people)	0,1	0.88	0.32
Education	0-16	4.89	4.46

Table 2

Frequency of ever having had a psychiatric disorder, by gender.

	Full sample	Men	Women
Any disorder	8.72%	7.88%	9.32%
Depression	5.49%	4.85%	5.93%
PTSD	3.74%	1.21%	5.51%**
IED	1.50%	2.42%	0.85%
Anxiety	1.00%	0.61%	1.27%

Note:

** indicates gender difference is statistically significant to $p<0.01$

Table 3

Results from multi-level logistic regression models predicting depression.

	Model 1 Depression	Model 2 Depression	Model 3 Depression	Model 4 Depression	Model 5 Depression	Model 6 Depression
Neighborhood Context						
School nearby (10 mins)		0.17* (2.08)				0.40^ (1.49)
Market nearby (10 mins)			0.37 (1.23)			0.38* (1.67)
Health service nearby (20 mins)				0.17** (2.83)		0.44 (1.12)
Social support group in neighborhood					0.26* (2.07)	0.36* (1.67)
Traumatic Experience						
Number of traumas	1.84*** (3.78)	1.86*** (3.82)	1.89*** (3.83)	1.89*** (3.92)	1.82*** (3.79)	1.94*** (3.96)
Demographic Characteristics						
Age	1.02 (0.89)	1.02 (1.05)	1.02 (0.79)	1.02 (1.13)	1.02 (0.94)	1.02 (0.84)
Female	1.88 (1.13)	1.95 (1.19)	1.85 (1.09)	2.03 (1.26)	1.85 (1.11)	1.85 (1.08)
Married	1.40 (0.41)	1.20 (0.22)	1.44 (0.44)	1.34 (0.35)	1.36 (0.38)	1.20 (0.22)
Household Size (4+)	0.36^ (1.59)	0.32* (1.75)	0.33* (1.68)	0.33* (1.73)	0.37^ (1.55)	0.27* (1.95)
Education	0.98 (0.33)	0.99 (0.13)	0.97 (0.37)	1.00 (0.06)	0.97 (0.41)	0.98 (0.22)
No. of obs	401	401	401	401	401	401

Notes: Estimates are presented as odds ratios. Z-statistics are given in parentheses.

^ p<.10

* p<.05

** p<.01

*** p<.001

Table 4

Results from multi-level logistic regression models predicting PTSD.

	Model 7 PTSD	Model 8 PTSD	Model 9 PTSD	Model 10 PTSD	Model 11 PTSD	Model 12 PTSD
Neighborhood Context						
School nearby (10 mins)		0.29$^{\wedge}$ (1.55)				0.41 (1.07)
Market nearby (10 mins)			0.17* (2.25)			0.17** (2.49)
Health service nearby (20 mins)				0.29* (1.80)		0.51 (0.77)
Social support group in neighborhood					0.54 (0.93)	0.66 (0.51)
Traumatic Experience						
Number of traumas	2.20*** (3.95)	2.19*** (3.94)	2.43*** (4.06)	2.29*** (4.02)	2.22*** (3.96)	2.60*** (4.20)
Demographic Characteristics						
Age	1.02 (0.76)	1.02 (0.78)	1.01 (0.47)	1.02 (0.81)	1.02 (0.74)	1.01 (0.48)
Female	10.58** (2.66)	10.16** (2.63)	10.30** (2.55)	10.25** (2.63)	10.37** (2.64)	10.21** (2.55)
Married	1.81 (0.54)	1.53 (0.38)	2.29 (0.72)	2.01 (0.62)	1.79 (0.52)	2.26 (0.67)
Household Size (4+)	0.20* (2.26)	0.17** (2.44)	0.15** (2.49)	0.17** (2.42)	0.19* (2.29)	0.11** (2.68)
Education	1.00 (0.03)	1.00 (0.06)	1.00 (0.01)	1.01 (0.10)	0.99 (0.09)	0.99 (0.05)
No. of obs	401	401	401	401	401	401

Notes: Estimates are presented as odds ratios. Z-statistics are given in parentheses.

$^{\wedge}$p<.10

*p<.05

**p<.01

***p<.001