

MENTAL ILLNESS IN JIRI, NEPAL

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Introduction

The World Health Organization defines health as a "state of complete physical, mental and social well-being," yet little effort has been devoted to mental health issues including assessments of the incidence and prevalence of disorders. There is, however, a growing recognition of the importance of mental health problems as part of the societal health burden (WHO, 1991). Estimates based on available data suggest that mental illness is present in developing societies in significant amounts and that mental illnesses impose substantial costs on those societies (World Bank, 1993). The mental well-being of individuals who live in developing societies is thus a matter of increasing interest and concern (Desjarlais et al., 1995).

Obtaining estimates of the incidence of psychiatric disorders in developing societies is not an easy task. Investigators note that Western definitions of disorder can be inconsistent with non-Western social and cultural meanings (Kleinman, 1986). Explanations for the origin of psychiatric disorder and their characteristics are culturally bound. Hence, even when disorders are measured across societies, a direct comparison of rates may not be meaningful. Also, there are very few community surveys in developing societies using acceptable measures of mental status and, hence, very little reliable knowledge about the extent of mental illness and disability in the community as a whole (Weissman et al., 1996).

The purpose of this paper is to report results from an assessment of psychiatric disorders among adults in Jiri, Nepal. We used a newly developed, survey-based technique to measure psychiatric disorders that can be applied to community-based surveys elsewhere. Thus, the Jiri survey represents the cutting-edge of research concerning issues related to mental health in developing societies. To address the problem of psychiatric illness in developing societies, it is most important to measure mental disorders in consistent and meaningful ways. Our research builds on previous assessment methodology while extending it to deal with their limitations.

Assessment of psychiatric illness across cultures has been facilitated by the development of such instruments as the Composite International Diagnostic Interview (CIDI). Indeed, this instrument reflects current American (DSM, Diagnostic and Statistical Manual) and international classification (ICD, International Classification of Diseases) schemata. The CIDI has been validated across a number of societies (Wittchen et al., 1991). This validation has been conducted mostly among psychiatric and other types of patients in hospital and outpatient settings and consists of rates of agreement with other independent diagnostic assessments. The CIDI, however, is somewhat difficult to administer in community surveys.

Weissman et al. (1996) have carried out highly sophisticated assessments using the Diagnostic Interview Schedule (DIS) of large, well-sampled populations in a number of countries, but they do not include any developing societies in their surveys.

In this paper we report the results of an analysis of psychiatric symptom data collected in the form of a simple checklist for selected disorders (to be discussed in detail in the methods section). Checklists are much easier to administer and score and they minimize the length of time needed for the interview.

Data and Methods

Study Setting and Background

The Jirel are an ethnic group of about 4,200 individuals indigenous to the Jiri Valley of Eastern Nepal (Williams-Blangero et al., 1998). They speak a Tibeto-Burman language and are in general subsistence farmers whose domestic economy is based on agro-pastoral production. They are geographically concentrated in nine villages in the Jiri region of the Dolakha District, 190 kilometers east of the capital city of Kathmandu. The Jirel region consists of approximately 230 square kilometers bordered by two rivers, the Tamakoshi and Likhu Khola. The villages have access to electricity and tap water. A few houses have radios and television sets as well. As a group, the Jirels are somewhat aware of western ideas and modernization due to the influence of mass media and foreign tourists, mountaineers, and trekkers who often travel through the Jiri Valley on their way to the Mount Everest region.

Sampling

The main goal of the survey was to study adults who came from resident households of Jiri. Non-housed and non-Jirel individuals were excluded from this survey. Because the population of Jiri is highly stable, it was relatively easy to obtain an up-to-date list of residents. From a random list of 221 households with 1200 residents, the study selected all individuals 18

years of age and above (N=768). Interviews were conducted with 85 percent of these adults giving us a sample of 653 persons.

Three interviewers (one female and two males) were hired based on their academic qualifications (graduate degrees in social science), past research experience, and familiarity with the social, cultural, and behavioral conditions of the population for study. These interviewers were also trained in western research methods and interview techniques. Interviewers were required to do practice interviews to assure quality and accuracy. A female interviewer was assigned to a female respondent and a male interviewer to a male respondent.

The interviews were conducted through door-to-door visits by the interviewers. Each interview was scheduled for about an hour. The interviewers obtained demographic, economic and health behavior information, as well as physical and mental symptom data. Each item in the survey questionnaire was translated into Nepali and then re-translated into English to assure accuracy. Qualified translators who were well-versed in both languages did the translation. All the data for this study were collected between August, 1996 and May, 1998.

The mean age of the sample was 39.7 years (reflecting the sample of adults, only). The distribution is highly skewed toward younger adults, however. This reflects both shorter life expectancies and higher birthrates. Rates of marriage are high (76%) in comparison to Western societies, which suggests both the traditional value of marriage in agrarian societies and, indirectly, limitations on the role of women outside of the household. Western educational experience is very low. Only 31 percent of Jirel adults reported any years of Western education. Finally, incomes are very low. The average income is approximately \$51 per year (\$1 US = 68.5 Nepali Rupees). Demographically, these data are characteristic of an agrarian, limited money-based economy.

The Symptom Checklists

The *DSM-III-R Criteria Checklist* is a semi-structured diagnostic instrument that was designed for clinicians' assessment of the major DSM-III-R adult psychiatric disorders (Helzer and Janca, 1988). As a checklist, it is ideal for use in surveys, particularly compared to the DIS or CIDI described earlier. The checklist has been specifically compared to the CIDI and it has been found to produce good concordance of diagnoses (Janca, Robins, Bucholz, Early and Shayka, 1992). The checklist consists of a list of symptoms that are diagnostically indicative of each psychiatric/mental disorder. Scoring is done by counting symptoms and using a specified cut-off value to make a diagnosis.

The entire DSM-III-R checklist permits the diagnosis of 21 major disorders. Part of the complexity of administering the entire DIS or CIDI

comes from its comprehensive diagnostic scope. Hence, we focused on a subset of disorders that we expected to observe more frequently and/or which were theoretically relevant for our longer-term research objectives. The specific disorders we selected were: somatization disorder (screening criteria-7 items), generalized anxiety disorder (17 items), depression (7 items), mania (6 items), schizophrenia (8 items), and antisocial personality disorder (14 items). Some modifications of checklist items were necessary to make the checklist format more useable in the survey situation. Care was taken to insure that changes did not bias diagnostic standards and remained consistent with symptom content.

We also measured depressed mood as assessed by a twelve-item version of the Center for Epidemiological Studies-Depression (CES-D) scale (Ross and Mirowsky, 1984).

Results: The Epidemiology of Mental Disorder

Table 1
Rates of Psychiatric Disorders in Jiri (Nepal) and the United States

Disorder	Jiri, (Nepal) ^a (N= 653)		United States			
		1 mo.	ECA		NCS	
			1 yr.	lifetime	1 yr.	lifetime
1. Somatization (ever) ^b Disorder (screen)	11.8%	—	—	11.5%	—	—
2. Generalized Anxiety Disorder (ever)	3.5%	—	3.76%	(4.14- 6.59%)	—	5.1%
3. Depression (recent)	3.1%	2.2%	3.7%	—	—	10.3%
4. Mania (recent)	0.6%	0.4%	0.6%	—	1.3%	—
5. Schizophrenia (recent)	1.4%	0.7%	1.0%	—	0.5% ^c	—
6. Antisocial Personality Disorder	0.2%	—	—	2.6%	—	3.5%

ECA = Epidemiological Catchment Area Study [DSM III] (Robins and Regier 1991; Reiger et al. 1988)

- NCS = National Comorbidity Survey [DSM-III-R] (Kessler et al. 1994)
- a = DSM-III-R Criteria Checklist (modified)
- b = time frame used in Jiri Survey
- c = includes diagnoses of schizophreniform disorder, schizoaffective disorder, delusional disorder, and atypical disorder

Table-1 shows the rates of psychiatric disorder as computed for the Jiri sample using the DSM-III-R Criteria Checklist and those found in previous studies of U.S. populations- the Epidemiological Catchment Area surveys (ECA) and the National Comorbidity Study (NCS). The ECA surveys employed the Diagnostic Interview Survey (DIS) which is intended to be a survey analog to clinical assessment of DSM-III disorders. The NCS used the Composite International Diagnostic Interview (CIDI) to assess DSM-III-R disorders.

The rates obtained from the checklist in Jiri are remarkably similar to those found in the US. It is not important for establishing validity that the rates be similar or identical but the similarities seem to suggest that the sets of symptoms may have common meaning in Jiri and the US.

It is possible that our estimate for somatization disorder is low. Kleinman (1986) and others have argued that somatization is more frequent in Asian cultures because these cultures do not "psychologize" symptoms. Hence, more physical symptoms of somatization will be reported. At the same time, in Nepal, the general health status of the population is much worse than in developed Western societies so that it might be difficult to separate the report of physical symptoms related to physical illness from those related to somatization. We chose a conservative approach to diagnosis in which respondents who indicated any likely physical illness on our modified Cornell Medical Index were not given a somatization diagnosis.

The rates for antisocial personality disorder and mania may not be reliable estimates. Our findings indicate that these disorders occur infrequently in the sample (0.2% for antisocial personality disorder and 0.6% for mania). A single individual qualified for the diagnosis of antisocial personality disorder and four persons met the criteria for a diagnosis of mania.

Table 2
Correlation Matrix of Psychological Disorders with Sociodemographics

	Gender (Female=0; Male=1)	Age	Marital Status (Not Married=0)	Education (Western)	Income (Rupees)
1. Anxiety	-.058	.077*	-.109**	-.059	-.098*
2. Depression	-.029	.073	-.024	-.010	-.085*
3. Depressed Mood(CES-D)	.036	.217***	-.089*	-.056	-.059
4. Mania	.090*	-.065	-.056	.138***	.055
5. Antisocial	.409***	-.108	.086*	.279***	.029
6. Schizophrenia	.117***	.298***	-.071	-.057	-.049
7. Somatization	-.052	.135***	.064	.001	.024

*** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

Table-2 shows correlations between the indexed scores for mental symptoms and the sociodemographics of the sample. In the US surveys, being female is associated with higher rates of anxiety, depression, somatization and depressive symptoms (CES-D), while being male is associated with higher rates of mania and anti-social personality. Data are unclear regarding gender differences in schizophrenia. In Nepal, being female is not related to higher rates of depression, anxiety, somatization or depression symptoms. Being male is, however, associated with mania and anti-social personality. Males are also more likely to report a higher number of schizophrenia symptoms.

In the US, anxiety symptoms, symptoms of mania, anti-social personality and schizophrenia decline with age, while age and depression show a curvilinear relationship such that depression is highest in the young and old. In Nepal, anxiety, schizophrenia and CES-D depression symptoms increase with age, while symptoms of anti-social personality and somatization decline with age. In the US, being unmarried is uniformly related to high symptom scores. In Nepal, being unmarried is related to higher rates of symptoms of anxiety and CES-D depression only. In the US low education and low income are consistently related to higher levels of mental symptoms. In Nepal, more western education is associated with

higher levels of mania and anti-social personality symptoms but education is unrelated to other psychiatric symptoms. Also, low income is related to higher levels of anxiety and depression, but not related to other sets of symptoms.

The results shown in Table-2 suggest that the social causes and distribution of psychiatric symptoms are somewhat different in the US and Nepal. The pattern of correlations is generally in agreement with findings from the US, but it is also clear that understanding the social origins of mental disorders in Nepal will require more specific investigation.

The Cultural Meaning of Mental Symptoms

The issue of whether symptom sets articulated in Western, developed societies represent salient symptom sets in non-western, developing societies can be partially addressed by asking members of developing societies about the meaning of those symptoms. One systematic method to identify the cognitive organization of a cultural domain (in this instance symptom sets in an illness domain), is to use a pile sort technique (Bernard, 1994).

Typically, pile sorts are done with cards or slips of paper. Each card has the name of a thing or concept on it, in this case the description of one diagnostic symptom identified earlier. Respondents are asked to "sort these cards into piles, putting things that are similar in the same pile" (Weller and Romney, 1988). A non-western culture might not contain the notion of "anxiety" but might view the symptoms that characterize anxiety as signs of having eaten the wrong foods or of being possessed by demons. Hence, the explanation for the etiology of a set of behaviors might differ across cultures, but the set of symptoms might be identical or very similar.

In the summer of 1998, two of our researchers recruited an independent, non-representative sample of 57 Nepali citizens from Kathmandu and Jiri to examine and sort the individual symptoms in the checklist into meaningful piles. Each symptom in the illness domain was written on a separate card and respondents were handed randomly ordered stacks of cards. They were requested to read through the stack of cards and then sort them into piles, so that items in each pile were more often associated with or might occur together in identifying an individual as being ill. An item-by-item similarity matrix was created from each individual's sort by tabulating the number of times each symptom was placed in the same pile with every other symptom in the set. The responses were subsequently analyzed using multi-dimensional scaling techniques to determine the way in which Nepali people understand the symptoms in the checklist.

The pile sort reveals that many of the symptoms contained in the checklist can be clustered in meaningful ways to describe conditions which are recognized in traditional Nepali culture. There is no complete overlap of symptoms related to Western diagnostic categories and symptoms related to Nepali terminology- except for antisocial personality disorder which is indicative of "bad karma" or of being a "bad" child in Nepal. In Nepal, both physical and mental illnesses are often explained in terms of possession by demons, witches, ghosts and gods (Stone, 1988). The specific type of spirit and their motives for possessing an individual affect the observable manifestations of the possession. For example, the set of symptoms that include indicators such as mind often goes blank, feel worthless or guilty, have trouble concentrating on things, think about death or suicide, and are easily distracted, reflect symptoms from the anxiety, depression and mania portions of the checklist, but, in Nepal they indicate possession by a demon (see Sidky et al., "*Phombos: A Look at Traditional Healers Among the Jirels of Eastern Nepal*," in this volume).

The symptom categories show both consistency with Western clusters and differences. There appear to be general analogs in Nepali culture for the types of Western disorders measured by our checklist. Individuals responding to the checklist items find most items in the checklist meaningful in terms of indigenous references. The factor analysis shows that the organization of these symptoms in Western terms is sufficiently similar (but not identical) to the way such symptoms are organized in Nepal such that the psychiatric categories would also have meaning in Nepal. The further implication is that the checklist provides meaningful profiles of mental disorder, which, although not exact reproductions of indigenous disorder, can be used to characterize the mental illness burden in this developing society.

Conclusions and Discussion

The purpose of this paper was to provide an epidemiological description of the rates of mental disorder in Jiri, Nepal, using a new survey-based measurement instrument. The checklist that we developed was used to estimate the prevalence of six specific disorders that were of theoretical interest to us. Respondents appeared able to understand the questions and the similarity of rates in Jiri and the US. This suggests that we may be measuring similar phenomenon in these two cultures. The factor analysis is generally supportive of our interpretation that the checklist measures distinctive disorders.

The differences between the patterns of correlation among socio-demographic characteristics and disorders in the US and Nepal are intriguing

and highlight the importance of using comparable instruments. The different correlation patterns suggest that the broad differences in social context between a highly developed urban society and a developing agricultural society can be used to examine the validity of general theories of the social causation of psychiatric/mental disorders. Indicators of status such as income, education and gender which are implicated as fundamental causes of disease in the US (Link and Phelan, 1995) do not appear to have similar roles in Nepal. On the other hand, gender inequality is much greater in Nepal than in the US and, while income inequality for the society as a whole is not as great, the contrast between a small wealthy class and the remainder of the society needs to be understood as it affects mental well-being.

The other reason why sociodemographic correlations might differ across societies is that the thing being measured (mental illness) differs across societies. To evaluate this possibility, we conducted a separate validation study using the pile sort technique in which Nepali informants self-classified symptoms according to their own cultural context and meanings. This exercise showed that many symptoms associated with mental illness are meaningful in Nepal as well as in the West. This is particularly true for symptoms of depression and anxiety. Although there is not complete overlap between diagnostic symptom categories or symptoms, we can argue that in Jiri, we measured meaningful symptoms of mental disorder.

In conclusion, there are substantial mental disorders that can be detected in developing countries. Although we only measure symptoms for some disorders, the data indicate that psychiatric disorders are frequent (about 12 % of respondents) even in this rural, traditional community. Our estimates of prevalence are conservative due to the limited number of disorders assessed.

The assertion that mental illness represents a significant portion of the disease burden in developing countries makes it important for researchers to determine the extent of illness and, ultimately, causal pathways. Such information is essential for policy making and to convince societies to expend resources to deal with these often-ignored health problems. The first step in obtaining such information is to establish some reliable and valid indicators of disorder that are culturally meaningful. We appear to have developed such a set of indicators. Our results in Jiri are meant to provide the sort of information that health planners need to have in order to provide effective health services related to the WHO definition of health. Our techniques ought to be effective in other villages, towns and cities in Nepal and in other developing societies, as well.

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