Psychiatric Disorders in Primary Health Care Clinics One Year After a Major Latin American Disaster

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SUMMARY

One year after a major natural disaster in Colombia, 100 consecutive adult patients attending two primary health care clinics in neighboring towns were screened for emotional distress with the Self-Reporting Questionnaire, and a sub-sample of 50 subjects were administered a semi-structured psychiatric interview to produce DSM-III diagnoses. Of those, 20 (40%) had a psychiatric diagnosis: post-traumatic stress disorder (n=12), generalized anxiety disorder (n=6), psychological factors complicating physical illness (n=1), and drug abuse (n=1). The screening instrument proved adequate for the identification of patients at risk of having a psychiatric disorder: its sensitivity was 90%, and its specificity was 50%.

Key Words: Disaster, Primary Care, Psychiatric Disorders

INTRODUCTION

The emotional problems of victims have become an increasingly important issue in disaster preparedness, response and rehabilitation[1]. There has been a growing number of reports emphasizing the extent of psychiatric disorders and mental problems among victims[2], rescue workers[3] and affected communities[4]. The specialty mental health sector is traditionally seen as the appropriate level for response[5], and various strategies have been proposed to strengthen its role in a catastrophe[6].

The geographic distribution of disasters is not uniform in the world, however. In fact, excluding disasters in the United States, developing nations had 86.4% of all disasters in this century, 78% of all deaths, and 97.5% of all affected individuals. For these poor countries the number of individuals affected by disasters is very high, the ratio of dead to affected being 32.9, a tenfold difference from developed countries[7]. Within countries, individuals in the lower socio-economic strata are usually those most severely affected[8]. Therefore, disaster victims who are likely to face the greatest psychosocial difficulties in the aftermath of a catastrophe are those that usually have the least access to health services in general[9] and to mental health services in particular[10], both because they live in poor

countries and because in these countries they are the poorest. These observations underscore the need to provide adequate health services to meet the varied and significant biopsychosocial needs of the large number of affected individuals who face difficulties in accessing the mental health specialist. Alternative strategies that do not involve only the mental health sector need to be designed and implemented.

Primary health care has been proposed as the only strategy capable of extending health services in developing countries for those who need these services the most[11]. Mental health is an integrant component of primary care[12], but the role of the primary care sector in providing mental health services to disaster victims over a long period of time has not been adequately emphasized[13]. This difficulty may be partially due to the perception that victims of disasters with emotional problems do not come to primary health care clinics.

Following two natural disasters in Colombia and Ecuador, we reported a high level of emotional disturbance among victims living in tent camps[14] and attending primary care clinics[15,16]. However, these conclusions could be questioned on the following grounds: (i) The emotional problems of victims were identified by using a screening

questionnaire and could correspond to undifferentiated forms of anxiety or depression[17] or minor psychiatric morbidity[18] which are routinely seen in primary care setting and which may fail to meet the criteria for a psychiatric diagnosis; (ii) given the special circumstances of experiencing a major disaster, the identified psychopathology could be either quantitatively and/or qualitatively different from the conditions seen in primary care clinics. The screening questionnaire which was validated on primary care clinic population in circumstances not associated with disasters, may not be adequate to identify the probable psychiatric cases in the aftermath of a major disaster. Therefore a psychiatric assessment of those individuals identified by the screening instrument as "probable case" was necessary.

This paper reports the extent of psychiatric disorders seen among adult patients receiving primary health care in two clinics nearby the site of a major disaster in a developing country one year after the catastrophic event. It also discusses the adequacy of the instrument we used to screen for these disorders. Based on this data we also attempt here to provide mental health care at a primary health center level and what type of training the primary health care worker may need to accomplish this.

MATERIAL AND METHODS

On November 13, 1985, the volcano Nevado del Ruiz erupted in Central Colombia, producing a mudslide that buried the town of Armero, killing 80% of its 30,000 inhabitants[19].

One year following this disaster, we sampled 100 consecutive adult patients attending two health clinics in neighboring towns. These patients had come to the clinics for some physical health problems and were seen by the primary care workers. Some of these patients lived in Armero and were direct victims of the disaster; others lived in the nearby areas and were indirectly affected by the catastrophe, either through the loss of family members, relatives, friends, property or business, or through the social disorganization that followed the disaster as these communities had to absorb the influx of survivors.

The patients were screened for emotional distress using the Self-Reporting Questionnaire (SRQ) immediately following their visit to the primary care worker. The SRQ is a simple and reliable instrument which has been used extensively in primary care clinics for the detection of emotional distress[20]. It consists of 20 questions that

evaluate neurotic symptoms, and 4 questions that screen for psychotic symptoms. We also included questions on alcohol abuse or dependence. While it can be self-administered, given the extent of illiteracy in this population, it was given to patients by mental health professionals who received special training in its use. A subject was considered a "probable case" if he scored 8 or more points in the neurotic sub-scale, or 1 or more points in the psychotic sub-scale, or 1 or more points in the alcohol questions.

A sub-sample of 50 patients were subsequently referred to psychiatrist who administered a semi-structured psychiatric interview which took place on the same day. "Caseness" was defined by this psychiatric interview which produced a DSM-III diagnosis. No patient refused to participate in the study (Figure 1). The interviewers were senior psychiatric residents, who had been working in the clinics since the disaster, were familiar with issues of disaster mental health, and had been given additional training in the use of the research instruments. They were blind to the results of the SRQ screening.

The psychiatric interview was based on the format used routinely in the Colombian psychiatric service, to which

a standardized symptom checklist was appended which could produce DSM-III diagnoses[21]. The research psychiatrists were requested to complete the interview schedule and to enter their clinical diagnosis; subsequently, they completed the symptom checklist by marking the symptoms they had identified. A DSM-III diagnosis was then formulated by the first author based on the marked symptoms on this list. A patient was defined as a psychiatric case if there was a psychiatric diagnosis made by the clinician based on his semi-structured interview and which also met the DSM-III criteria needed for the diagnosis as indicated by the symptom checklist. In nine cases, there was a disagreement between the clinical diagnosis and the checklist-generated DSM-III diagnosis. A consensus exercise was carried out among six of the authors (BRL, SP, LC, JMH, AML, VT). Firstly, we deleted the clinician's diagnosis from the interview schedule, and subsequently reviewed both the content of the interview schedules and the symptoms noted in the checklist. Each of us formulated a DSM-III diagnosis independently and discussed our impression. A consensus was reached for all cases, and a final diagnosis was then entered for subsequent analyses.

RESULTS

One hundred patients had been initially screened with the SRQ: 45 of these had a positive score ("probable case"), of which 33 were given a psychiatric interview; and 55 had a negative score ("probable non-case"), of which 17 were interviewed. Thirty-two of these 50 interviewed patients were "victims" who lived in Armero at the time of the disaster; 18 patients had their residence elsewhere and were only indirectly affected by the disaster.

We initially compared the subjects who were interviewed (N=50) with those that were not (N=50) on selected socio-demographic, disaster experience and mental health variables. There were no significant differences between the two groups in relation to age, sex, race, education, marital status, occupation, self-rated physical and emotional state, and disaster experience.

To ascertain whether within SRQ positive and negative groups we had a sampling differential for interviewing, we compared the subjects who were interviewed and not interviewed controlling for SRQ status. For the subjects with a positive SRQ score and for those with a negative SRQ score there were again no significant differences in

the selected socio-demographic variables, disaster experience and self-rated physical or emotional state.

We subsequently analyzed the outcome of the psychiatric interview of the 50 subjects who were interviewed: 20 subjects had a psychiatric diagnosis and 30 did not. There were no significant differences between these two groups in their socio-demographic characteristics. However, patients who had a psychiatric diagnosis were significantly more likely to self-rate their physical and emotional state as regular or bad. They also had significantly higher mean scores in the neurotic and psychotic subscales. Of the 20 individuals with a psychiatric diagnosis, 18 (90%) had had a positive SRQ score, whereas of the 30 subjects without a psychiatric diagnosis, only 15 (50%) had a positive SRQ score, a difference that was also significant. (Table 1)

The distribution of psychiatric diagnoses shows that there were twelve cases with post-traumatic stress disorder, six with generalized anxiety disorder, one with psychological factors complicating physical illness, and one with drug abuse (Table 2). There were no significant differences in the socio-demographic characteristics between patients with no psychiatric diagnosis and those with the diagnosis of post-traumatic stress disorders or

generalized anxiety disorder. The small numbers preclude any detailed analyses, but it is interesting to note that all patients with generalized anxiety disorder were women, 84% of them being under age 44. When the psychiatric diagnoses of victims and non-victims were compared, we observed a slightly higher proportion of victims with a psychiatric disorder (odds ratio = 1.6). The numbers are again too small for additional analysis, but the victims had the diagnosis of post-traumatic stress disorder three times more often than non-victims.

The scores on the SRQ showed that subjects with either post-traumatic stress disorder or generalized anxiety disorder had mean neurotic subscale scores significantly higher than subjects without a psychiatric diagnosis (10.4 ± 3.0 vs 6.5 ± 3.6, $p<.005$, and 11.5 ± 4.2 vs 6.5 ± 3.6, $p<.005$, respectively), but their scores did not differ significantly from each other.

The results of the SRQ were compared with specific psychiatric diagnoses. Of the seventeen individuals identified by the SRQ as probable normals, fifteen were found to have no psychiatric diagnosis. However, the SRQ also identified as probable cases fifteen subjects who received no psychiatric diagnosis. All individuals with generalized anxiety disorder (n=6) and eleven of the

twelve subjects with post-traumatic stress disorder were identified by the screening instrument as probable cases.

An analysis of the sensitivity and specificity of the SRQ was carried out as well. The best cut-off points for each subscale were the ones we had used: 7/8 for the 20-item neurotic subscale (which yielded a sensitivity of 75% and a specificity of 73.3%); and 0/1 for the 4-item psychotic subscale (which yielded a sensitivity of 65% and a specificity of 56.7%). The sensitivity and specificity of the instrument with these cut-off points and the neurotic and/or psychotic subscales combined were 90% and 50% respectively, with an overall misclassification rate of 34%.

The neurotic and psychotic subscales showed a significant difference in their ability to identify correctly cases and non-cases (Table 3). Of the seven subjects that were positive because of a positive score on both the neurotic and the psychotic subscales, 71.4% received a psychiatric diagnosis; of the sixteen subjects who had a positive SRQ score because of a positive score in the neurotic subscale only, 62.5% received a diagnosis; of the 10 subjects that were positive because of a positive score on the psychotic subscale only, 30% received a psychiatric diagnosis.

Finally, we looked at the distribution of symptoms in the psychotic subscale of those 10 subjects who obtained a positive SRQ score only because of this subscale (Table 4). Five individuals acknowledged feeling that "somebody had been trying to harm them in some way"; of these, two had the diagnosis of generalized anxiety disorder and one of post-traumatic stress disorder. Two subjects acknowledged that they felt like "a much more important person than most people think", but neither received a psychiatric diagnosis. One subject stated that he had "noticed interference or anything else unusual with his/her thinking", but again received no psychiatric diagnosis. Of the four subjects who acknowledged "hearing noises without knowing where they came from or which other people could not hear," three received no psychiatric diagnosis, and one was given the diagnosis of generalized anxiety disorder, but he had also acknowledged the presence of paranoid ideation.

DISCUSSION

The findings of this study reveal a significant amount of psychiatric morbidity among adult patients attending

primary care clinics, even one year after a major disaster had occurred.

Our previous study had indicated a high prevalence of emotional distress among these patients (45%) utilizing the SRQ as the screening instrument[15]. For those individuals with a positive score who were interviewed (n=33), 55% had a level of psychopathology that met criteria for a psychiatric diagnosis. This indicates that in more than half of the patients with a high level of emotional distress detected by the screening instrument, the psychopathology was severe, and fell into two basic diagnostic categories: post-traumatic stress disorder and generalized anxiety disorder.

These results emphasize the following important points: (i) subsequent to a major natural disaster in a developing country, victims and non-victims from nearby towns present significant psychiatric morbidity even after a year of the catastrophic event; (ii) these emotional problems go beyond simple distress and reach criteria for a DSM-III diagnosis; and (iii) the most frequent diagnosis are in the category of anxiety disorders.

The implications of these findings for the delivery of mental health services to disaster victims in

developing countries are important. The primary level of health services is likely to be involved in the care of a large proportion of adults with significant levels of emotional distress who must be diagnosed correctly and managed in an appropriate manner. Therefore the conventional role of the mental health specialty sector of providing direct services to patients should be altered to include educating, training, and supervising the primary care worker in those areas specifically related to disaster mental health on an ongoing basis. The content of teaching can concentrate basically on the detection and management by the primary care worker of a few psychiatric disorders with clear guidelines for referring the most difficult cases to the mental health specialist.

The identification of individuals with emotional problems can be reliably accomplished by the utilization of the SRQ. While the instrument included too many false positives (15 out of 33), it included very few false negatives (2 out of 17). For a screening instrument, this is a good performance. Although the clinician may have to rule out an emotional problem in a larger number of patients incorrectly identified by the screening instrument as probable cases (false positives), only a small proportion of those patients that do have a

psychiatric disorder will be missed by the screening instrument (false negatives).

In a post-disaster situation, the usefulness of the psychotic subscale of the SRQ is questionable. Only the question on paranoid ideation predicted a psychiatric diagnosis; all the others did not. Also, no subject received the diagnosis of a psychotic disorder. It seems that some individuals with anxiety disorders (post-traumatic stress disorder or generalized anxiety disorder) were likely to translate these anxiety states into paranoid ideation. This is intuitive in a disaster situation when the patients' lives, property, welfare and social support have been so profoundly altered.

CONCLUSION

This study provides additional support to our initial finding that the psychiatric morbidity after a disaster in developing countries is high. The study also shows that after one year, adults with emotional problems constitute a large proportion of patients in primary care clinics, and that their level of distress meets criteria for a DSM-III diagnosis. These observations indicate that appropriate mental health services for disaster victims

must be delivered through the primary care sector, that the role of the specialty mental health sector should be to support the primary care worker in carrying out mental health tasks, that the training of the primary care worker can be focussed on priority and prevalent conditions, and that a simple screening instrument is effective in identifying significant psychiatric morbidity.

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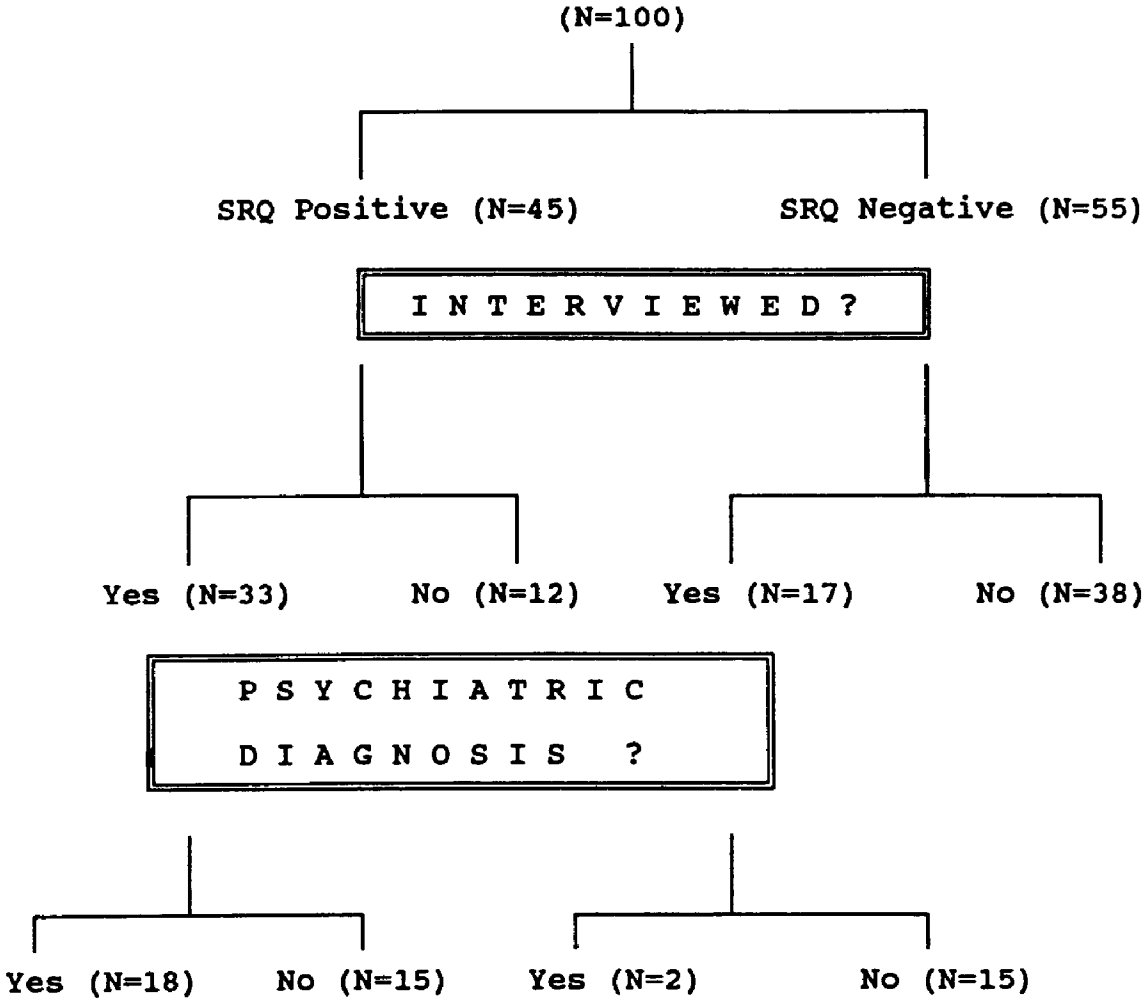
Figure 1

OUTLINE OF THE STUDY

Subjects Recruited into the Study



TOTAL INTERVIEWED: 50

WITH PSYCHIATRIC DIAGNOSIS: 20

Table 1

SELECTED SOCIODEMOGRAPHIC CHARACTERISTICS AND MENTAL HEALTH VARIABLES OF INTERVIEWED SUBJECTS BY PSYCHIATRIC DIAGNOSIS (n=50).

ARMERO, COLOMBIA, 1986

		PSYCHIATRIC DIAGNOSIS		P
		NONE	ANY	
SELECTED CHARACTERISTICS		(n=30)	(n=20)	
SEX	Male	46.7%	35.0%	.41
	Female	53.3%	65.0%	
AGE	17 - 44	80.0%	85.0%	.78
	45 - 65	16.7%	10.0%	
	65 +	3.3%	5.0%	
	Mean (Years)	32.4±14.3	33.4±13.8	.81
MARITAL	Single	23.3%	20.0%	
STATUS	Married	26.7%	30.0%	.67
	Common Law	43.3%	50.0%	
	Separated	6.7%	--	
USUAL	None	--	5.3%	
OCCUPATION	Housewife	33.3%	42.1%	
(Before the disaster)	Unskilled	36.7%	21.1%	.43
	Skilled	30.0%	31.6%	

Table 1 (Continued)

SELECTED CHARACTERISTICS		PSYCHIATRIC DIAGNOSIS NONE (n=30)	ANY (n=20)	P
CURRENT OCCUPATION	None	13.3%	15.0%	.67
	Housewife	43.3%	50.0%	
	Unskilled	26.7%	30.0%	
	Skilled	16.7%	5.0%	
SELF-RATED PHYSICAL STATE	Excellent-Good	43.3%	15.0%	.04
	Regular-Bad	56.7%	85.0%	
SELF-RATED EMOTIONAL STATE	Excellent-Good	51.7%	25.0%	.06
	Regular-Bad	48.3%	75.0%	
SELF-REPORTING QUESTIONNAIRE	Positive (n)	15	18	.009
	Negative (n)	15	2	
MEAN SUBSCALE SCORES	Neurotic	6.5±3.6	10.5±3.4	<.000
	Psychotic	.5±6.3	.9± .8	.08

Table 2

PSYCHIATRIC DIAGNOSES OF INTERVIEWED SUBJECTS

VICTIMS AND NON-VICTIMS, (n=50)

	TOTAL		VICTIM		NON-VICTIM	
	N	%	N	%	N	%
NO DIAGNOSIS	30	60	18	56	12	67
ANY DIAGNOSIS	20	40	14	44	6	33
Post-Traumatic Stress Disorder	12	24	10	32	2	11
Psychological Factors Complicating Physical Illness	1	2	1	3	--	--
Generalized Anxiety Disorder	6	12	2	6	4	22
Drug Abuse	1	2	1	3	--	--

Table 3

PSYCHIATRIC DIAGNOSES OF SUBJECTS WITH A POSITIVE SELF-REPORTING QUESTIONNAIRE SCORE (n=33) BY SUBSCALE SCORES

	SUBSCALES					
	NEUROTIC ONLY		PSYCHOTIC ONLY		BOTH	
PSYCHIATRIC DIAGNOSIS	N	%	N	%	N	%
TOTAL	7	100.0	10	100.0	16	100.0
NONE	2	28.6	7	70.0	6	37.5
POST-TRAUMATIC STRESS DISORDER	4	57.1	1	10.0	6	37.5
GENERALIZED ANXIETY DISORDER	1	14.3	2	20.0	3	18.8
PSYCHOLOGICAL FACTORS COMPLICATING PHYSICAL ILLNESS	-	--	-	--	1	6.3

Table 4

SYMPTOM-DISTRIBUTION OF SUBJECTS
WITH A POSITIVE SELF-REPORTING QUESTIONNAIRE SCORE
BECAUSE OF A POSITIVE SCORE ON THE
PSYCHOTIC SUBSCALE ONLY (n=10)

		INDIVIDUAL SYMPTOMS			
SUBJECT	PSYCHIATRIC DIAGNOSTIC	PARANOID IDEATION	GRANDIO-SITY	THOUGHT DISORDER	AUDITORY HALLUCI-TIONS
1	None	Yes	--	--	--
2	None	--	--	--	Yes
3	None	Yes	--	--	--
4	None	--	Yes	--	--
5	None	--	--	Yes	--
6	None	--	Yes	--	Yes
7	None	--	--	--	Yes
8	Post-Traumatic Stress Disorder	Yes	--	--	--
9	Generalized Anxiety Disorder	Yes	--	--	--
10	Generalized Anxiety Disorder	Yes	--	--	Yes

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