

# A Clinical Study to See the Psychological Effects of Dengue Fever

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## ABSTRACT

**Objectives:** To find out the psychological effects of Dengue Fever on its sufferers.

**Study Design:** This was an Interventional Prospective study.

**Period:** From August 2010 to January 2011 (five months.)

**Setting:** This study was carried out at Aadil Hospital, DHA, Lahore and Avicenna Hospital/Avicenna Medical College, Lahore.

**Methods:** (patients and processes). A total of 157 patients of dengue fever were seen by the physician at Aadil Hospital. A group of 119 patients (69 males and 50 females) were included in this study. An inclusion and exclusion criteria was developed. Their age range was between 20y to 65y with no gender discrimination. The patients who had history of psychiatric illness were excluded. A further 7(5.55%) patients were dropped out because they did not turn up for stage 3 assessment. All of them were initially seen by one physician. Diagnosis of Dengue fever was established on the basis of clinical symptoms as well as blood investigations. Because of intense and sever psychological symptoms they were referred to Psychiatrist. The psychiatric assessments were done in four stages by the same psychiatrist. A final assessment was aimed at to see if dengue fever sufferers developed any psychiatric illness as result of serious distress they had during the attack of dengue fever.

**Results:** During the acute phase of dengue fever a very high %age(Above 90%) of patients developed intense fear of death. Because of this phobia about 60% developed sever anxiety and panic attacks. Most of them settled with reassurance but some needed treatment with anxiolytics. A very high %age also suffered from insect phobia. Most of the psychological symptoms receded as the patients recovered from dengue fever. About 5% of the whole group developed a clear cut episode of depressive illness which was most likely induced by the stress caused by other psychological symptoms like death phobia.

**Conclusion:** Unfortunately there is a strong possibility that dengue fever might erupt in the form of an epidemic every year so the treating physicians should keep an eye on the mental health as well along with the physical health of their patients. The psychiatrists must keep in mind that though most of the psychological symptoms are likely to resolve within a week but some of them might end up in clear cut psychiatric illness very soon after recovery from dengue fever. The media should also try to avoid a hype.

**Key words:** Psychological symptoms, Dengue fever, Panic attacks, Epidemic.

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## INTRODUCTION

Dengue Fever(D.F.) is also known as break bone fever, is an acute febrile infectious disease<sup>1</sup> caused by dengue virus<sup>2</sup>, which is transmitted through mosquito, *Aedes Aegypti*<sup>3,4</sup>. Typical symptoms are head ach, muscle and joint pains, vomiting, restlessness and petechial rash. Shock and hemorrhage<sup>5,6</sup> occurs in less than 5% cases. In a further about 1% of cases symptoms of cerebral edema such as an altered level of consciousness and seizures also occur. In cities like Lahore dengue

fever erupts in an epidemic fashion usually during the monsoon season which falls from July to September every year. During the last epidemic a large number of patients went for treatment at Aadil Hospital. The treating physician noticed that almost all of the patients had variety of psychological symptoms, most commonly sever anxiety and a fear of death, so they were referred to the psychiatric service of the Avicenna Hospital as the both hospital are part of the same system. When they were assessed by the psychiatrist, very interesting findings emerged so this clinical study was initiated with an aim to scientifically study the mental health issues related to dengue fever.

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## MATERIAL AND METHODS

This study was carried out at Aadil Hospital, DHA, Lahore and in the Psychiatric Department of Avicenna Medical College, Lahore, Phase 9, DHA, Lahore. During a recent epidemic of dengue fever in Lahore, during a period of only two months a total of 157 patients were seen in Aadil hospital which is a private hospital situated in one of the most posh areas of Lahore and is attached with Avicenna Medical College for teaching purposes. The age range of patients was between 2.5yrs to 75yrs with mixed gender distribution. All the referred patients were subsequently assessed by one psychiatrist only and a few of them were further referred to the neurosurgeon for second opinion. Particularly those patients who developed persistent head ach. In order to select a sample of patients, a strict inclusion and exclusion criteria was designed. Age range was decided to be between 18years to 65 years i.e. general adult population with no gender discrimination. Those patients who had a clear evidence of previous psychiatric history were also excluded from the study in order to avoid a bias. So out of 157 patients 15 patients (9.55%) had a previous psychiatric history and 16 patients (10.19%) fell in that age group which was out of the decided range of study so both these groups were excluded. Initially there were 126 patients who were included in the study but then 7(5.55%) were further dropped from the study because they failed to turn up for follow up at a stage three assessment. So a total of 119 patients were actually included in this study. Characteristics of patients included in the study are presented in table 1.

Table 1: Characteristics of patients included in this study.

Age range:	N=119	Male 69(58%)	Female 50 (42%)
18 y to >25y	47(39.49)	29(24.36)	18 (15.13)
25y to >35y	20(16.80)	11 (9.24)	09(7.56)
35y to >45y	15(12.60)	04(3.36)	11(9.24)
45y to >55y	22(18.48)	13(10.92)	09(7.56)
55y to >65y	15(12.60)	10(8.40)	05(4.20)

**Assessment Procedures:** The first step was to make a formal procedure for the diagnosis of dengue fever as such and then to use the same procedure for all the patients who were included in the study. All the patients were assessed clinically by one clinician. The diagnosis was mainly made on the basis of clinical symptoms. The laboratory investigations were carried out from the same laboratory. They were CBC(Complete Blood Count), which included Platelet count. Serology for dengue IgM. Since the main focus was on the psychological symptoms so psychiatric assessments were done in 3-stages

**Stage 1: During the Acute Illness:** The first assessment was done during the acute illness of dengue fever. The record of all the psychological symptoms were kept. The most prominent and distressing symptoms were fear of death( in 90% of patients) and severe anxiety. For results see Table 2

**Stage 2: At the Time of Recovery (within a week):** The second assessment was done at the time of recovery which was within a week of the onset of dengue fever. Very interestingly the percentage and severity of nearly all the symptoms fell down at this stage but approximately 50% of patients were still carrying fear of death and mosquito phobia. See Table 3.

**Stage 3: After 6-Weeks:** The third assessment was done after 6-weeks.results are in Table 4.At this stage 7 patients failed to turn up so they were dropped out of the study. One patient complained of persistent head ach and vertigo. Since he belonged to Failsalabad so he was referred to Faisalabad International Hospital for neurosurgical opinion. After all the relevant investigations including brain CT scan he was not found suffering from any serious illness and his symptoms resolved subsequently without any major intervention.

**Stage 4: After 3-Months:** The last and final assessment was made after 3 months. At this stage some interesting findings emerged which are described under the heading of results.

## RESULTS

During the acute stage of illness nearly every one i.e., about 90% of patients were suffering from very sever fear of death, Death Phobia<sup>7</sup>. This phobia was diagnosed strictly on the guideline of ICD 10<sup>8</sup>. This fear was causing secondary symptoms of anxiety and low mood. About 23% of patients mostly females had panic attacks. About 20% of patients actually needed short courses of Anxiolytics mainly Benzodiazepines for 3-5 days in the dose of 5-30 mg per day. Associated symptoms were insomnia, tremors, dryness of mouth, palpitation and subjective feeling of remarkable anxiety was definitely there. For other psychological symptoms see Table 2.

At the time of recovery the percentage as well as their severity fell. Another interesting finding was that most of the patients developed fear from mosquito Insect Phobia<sup>8</sup> Though the other phobia i.e., Death Phobia declined but 50% still expressed the same (Table 3)

The third assessment was done after 6-weeks. Nearly all the patients who suffered from death phobia except a few were recovered from this distressing feeling but remarkable number still had

insect phobia. The other symptoms also declined remarkably (Table 4).

Table.2. Psychological symptoms during acute phase of Dengue fever.

Psychological symptoms	n=	Male	Female
Fear of Death (death phobia)	107 (89.91%)	47 (39.49%)	60 (50.42%)
Anxiety and associated symptoms.	95 (79.83%)	32 (33.68%)	63 (46.15%)
Depressed mood and associated symptoms.	72 (60.5%)	18 (15.12%)	54 (45.38%)
Panic attacks	23 (19.32%)	7 (5.89%)	16 (13.43%)

Table.3. Psychological symptoms at the time of recovery from Dengue fever.

Psychological symptoms	n=	Male	Female
Fear of Death (death phobia)	60 (50.42%)	25 (21.00%)	35 (29.41%)
Anxiety and Associated symptoms.	38 (31.93%)	13 (10.92%)	25 (21.08%)
Depressed mood and associated symptoms.	22 (18.48%)	7 (5.88%)	15 (12.60%)
Panic attacks	03 (2.52%)	1 (0.84%)	2 (1.68%)
Insect Phobia (Mosquito)	67 (56.30%)	23 (19.32%)	44 (36.97%)

Table.4. Psychological symptoms after 6-weeks.

Psychological symptoms	n=	Male	Female
Fear of Death (death phobia)	07 (5.8%)	02 (1.68%)	05 (04.20%)
Anxiety and Associated symptoms.	02 (1.68%)	0	02 (1.68%)
Depressed mood and associated symptoms.	0	0	0
Panic attacks	0	0	0
Insect Phobia (Mosquito)	37 (31.09%)	12 (10.08%)	25 (21.00%)

The last and final assessment was done after three months. Interestingly nearly all the patients who developed the above described psychological symptoms recovered successfully. A very striking finding was noticed that 2 males and 4 females i.e., about 5% of the whole group ended up with a clear cut episode of Depressive Illness of Mild to Moderate

Severity. Again a detailed and meticulous assessment was done by the same psychiatrist to establish the diagnosis in the light of ICD10 guidelines. All these 6 patients needed treatment with Antidepressants and were treated in the out-patient department as there was no indication of hospitalization as such.

## DISCUSSION

The causal relationship between a physical illness and the psychological symptoms is a well known phenomenon<sup>9</sup>. The WHO collaborative study showed a strong association between physical illness and psychological symptoms in all the centers despite their different cultural approaches to illness and its care. Numerous studies have found associations between physical and psychiatric disorders among general hospital in-patient and emergency department attenders<sup>10,11</sup>. Sometimes psychiatric disorders cause major medical problems e.g., Anorexia Nervosa<sup>12</sup> patients might end up in numerous physical illnesses like arrhythmias etc etc, and also it may happen other way around that medical illness is accompanied by psychological symptoms and in a further third category the both may go hand in hand. Since almost everyone suffering from dengue fever that was seen by the coauthor had remarkable psychological distress and as mentioned above the most prominent symptoms were severe anxiety and fear of death so this study was launched. However the results of our study were not much different from the previous studies of this type i.e., most of the symptoms with which patients of our study presented were understandable and fizzled away as the underlying physical illness, dengue fever, settled (tables 3 and 4). Most of the patients needed just reassurance and support except a few who needed short courses of Anxiolytics. About 5% of the whole group developed episode of Depressive Illness. They clearly fulfilled the ICD10 criteria to establish the diagnosis and subsequently needed treatment with Antidepressants. This finding is also consistent with the actual etiology of Depression. As in almost all psychiatric disorders there are predisposing, precipitating and perpetuating factors involved. Though we discarded those patients from the study who had a previous history of psychiatric illness but most likely the 5% who developed depression as an aftermath of dengue fever were predisposed to develop depression either they might have positive family history of psychiatric illness or because of underlying prone personality. One finding is worth mentioning that media both print as well as electronic played a major role in the creation of psychological distress particularly fear of death.

When patients who were very panicky because of this fear were asked the reason behind their answer was that even before developing dengue fever they were frightened because there were "breaking news" on the TV channels almost every day about the deaths caused by dengue fever. When they found themselves suffering from dengue fever their anxiety and fear went sky high.

## CONCLUSION

The results of this study show that dengue fever is a cause of deep stress and leads to serious psychological distress. Unfortunately there is a strong possibility that dengue fever might erupt in the form of an epidemic every year so the treating physicians should keep an eye on the mental health as well along with the physical health of their patients. The psychiatrists who are involved to look after the mental health of dengue fever sufferers in the acute phase must keep in mind that though most of the psychological symptoms are likely to resolve within a week but some of them might end up in clear cut psychiatric illness very soon after recovery from dengue fever. The media on one hand causes a hype and intends to get the attention of health authorities to help the dengue fever sufferers but on the other hand this leads to cause deep stress and serious psychological symptoms.

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