LIFE EVENTS AND COURSE OF A PHYSICAL ILLNESS

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SUMMARY

Sixty patients of pulmonary tuberculosis selected through a specified selection procedure were followed up after one year of treatment. The psychiatric assessment was done by Present State Examination (P.S.E.) brief version and an open ended life event questionnaire. Results indicate that the non-life event group patients improved significantly (p<0.001) more as compared to life event group patients. The findings are discussed in the light of available literature.

The tuberculosis has declined drastically in the western countries due to improved hygienic conditions but it still remains a major public health problem in India. Environmental factors have been implicated to affect the course and outcome of physical illness. Stallones (1972) writes in an editorial in ‘Science’ that “Advances in medical knowledge and decline in disease are simultaneous result of general improvement in the quality of life”. He concludes that “Different environmental experiences are responsible for differences in frequency of illness between different population and that substantial improvements are possible if we are able to understand and control the general environmental factors contributing to disease”.

In terms of stress and strain model, symptoms are seen as reactions to noxious environmental forces. Thus symptoms could be most common in the groups which are under most stress (Schwab, 1975). Psychiatric symptoms such as depression, hopelessness and anxiety as a consequence of stressful living conditions had been shown to adversely affect the course and outcome of various illnesses.

The present study was, therefore, undertaken to study the effect of stressful life events on the course of pulmonary tuberculosis. We hypothesize that patients facing continued stressful situations would respond poorly to treatments compared to those who are free from such situations. There would be various grades of treatment responses comparable to various grades of stress.

MATERIAL AND METHODS

The study was conducted at Tuberculosis and Chest Disease Hospital attached to S. P. Medical College, Bikaner (India). Sixty patients of pulmonary tuberculosis were selected through a specified selection procedure. Patients above the age of 50 years, more than 2 years duration of illness, taking anti-tubercular therapy in preceding one month, with past history of psychiatric illness or suffering from concomitant other physical illness were excluded from the study. The following instruments were used for the assessment: (i) Present state examination (P.S.E) schedule (brief version translated in Hindi at Post-Graduate Institute of Medical Education and Research, Chandigarh; Wing et al., 1967 and 1974), (ii) An open ended Life Event Schedule to record the life events which the patients had experienced during the past one year.

Both Inter-rater and Re-Test relia-
bility on these schedules was tested and found satisfactory.

These patients were followed up after completion of one year of treatment. Forty-three patients were followed up at the clinic itself when they attended the hospital for regular check up and getting their drugs. Remaining 12 patients were followed up at their residence. The P.S.E. and life event schedules were repeated for follow up assessment on the lines of initial assessment.

On the basis of number of life events experienced in the preceding year and P.S.E score of the initial assessment (Gupta et al., 1981) the patients were divided into 2 groups:

1. **Negative Life Event Group**: Those patients who had experienced no life event or experienced only one during preceding one year were almost similar on P.S.E. score (Mean 9.5±7.7 and 7.8±7.7 respectively; difference not significant);

2. **Positive Life Event Group**: Those patients who experienced two, three, four events were also similar on P.S.E. score (Mean 22.9±6.8, 24.8±9.9, 24.4±9.9, respectively; differences not significant).

Each of these two groups were further subdivided into two groups i.e. Positive life event group and Negative life event group, at the time of follow up. Thus we had following four groups at the time of one year follow up, for comparisons:

A. **Negative-Negative Life event group**—Subjects who neither reported more than one life event in the year preceding initial assessment (Negative life event group) nor in the year preceding follow up (Negative life event group).

B. **Negative-Positive life event group**—Subjects who did not report more than one life event in the year preceding initial assessment (negative life event group) but had more than one life in the year preceding follow up (Positive life event group).

C. **Positive-Negative life event group**—Subjects who had more than one life event in the year preceding initial assessment (Positive life event group) but did not experience more than one life event in the year preceding follow up (Negative life event group).

D. **Positive-Positive Life event group**—Subjects who had more than one life event in the year preceding initial assessment (positive life event group) and also experienced more than one life event in the year preceding follow up (positive life event group).

Analysis of variance (ANOVA) was carried out to determine the real differences among these four life event groups (Table II). Differences between individual groups were tested by student 't' test.

**RESULTS**

Only fifty five, out of 60 patients could be followed up one year after the initial assessment. Rate of follow up was 91.7%.

Twenty three (41.8%) of the patients reported more than one life event during the year preceding follow up and 32 reported either no life event or only one (58.2%).

Out of 55 patients assessed after one year, 37 were improved (67.27%) and 18 did not improve or worsened (32.73%). None of the patients in improved group was a drug defaulter. Seven patients, out of 18 not-improved group were either not regularly taking drugs or stopped taking anti-tubercular drugs. They were continuing with homeopathic (2), or Ayurvedic treatment (1), or were on no treatment at all (4).
DISCUSSION

Age, sex, education and rural-urban background of the patients were not significantly related to the improvement in disease after one year (Table I). However, it was observable that illiterate patients in higher age group and poor economic background suffered excessively. Lower social class groups are known to express psychological distress in physiological terms (Grandell and Dohrenwend, 1967). The increase in psychosomatic symptoms as found by authors of Mid Town Manhattan Study (Srole et al., 1962) also support this observation. Moreover, it is possible that illiterate poor patients of higher age group may be irregular in taking treatment due to their negative attitude towards regular drug treatment for a prolonged period (Gupta and Murthy, 1979). Financial Constraints (18), family conflicts and subsequent break in relationships (13), and illness of close family member (9) were the commonly reported life events. Table II shows that patients in positive-Positive life event group were the worst sufferers. Their P. S. E. symptom score was significantly greater than Negative-Negative life event group (p<0.001), Negative-positive life event group (p<0.02) and the Positive-Negative life event group (<0.001). In this group the improvement rate was lowest (30%) as compared to remaining three groups (69.2-78.9%). This observation strongly supports the view that the course of a physical illness in negatively affected by life events and adverse environmental situations, similar reports, of harmful effects of adverse life situations on cardiac patients (Kimball et al., 1973), cancer patients (Brown, 1966; Stavraky et al., 1968; Ach te, 1970; Viitamaki, 1970; Schoufield, 1972; and Davis, 1973) and congestive heart failure (Perlman et al., 1975) are available in literature. The study of Hinkley and his colleagues (1958) of relatively large populations also demonstrates that reaction of a man has influence on all forms of illness. It is also evident that the best improvement in clinical course of illness is in the groups of patients who were unexposed to adverse life events (Negative-Negative life event group). The life events in recent past (Negative-positive life event group) had more adverse effect in the outcome of illness than the life events of remote past (Positive-

### Table I: Sociodemographic Variables and Course of Illness

| Variables          | No. of Patients | Patients improved | Percentage |
|--------------------|-----------------|-------------------|------------|
| Age (Years)        |                 |                   |            |
| 15-24              | 9               | 7                 | 77.8       |
| 25-34              | 18              | 13                | 72.2       |
| 35-44              | 18              | 12                | 66.6       |
| 45 and above       | 10              | 5                 | 50.0       |
| Sex                |                 |                   |            |
| Male               | 37              | 25                | 67.6       |
| Female             | 18              | 12                | 66.7       |
| Education          |                 |                   |            |
| Illiterate         | 40              | 26                | 63.0       |
| Primary            | 14              | 8                 | 72.7       |
| Matric             | 4               | 3                 | 75.0       |
| Income (in Rupees) |                 |                   |            |
| Less than 500      | 30              | 19                | 60.0       |
| 501-999            | 20              | 15                | 75.0       |
| More than 1000     | 5               | 4                 | 80.0       |
| Rural-Urban        |                 |                   |            |
| Rural              | 47              | 31                | 65.9       |
| Urban              | 8               | 6                 | 75.0       |

Chi square in all above variables—Not significant.
Negative life event group; Table II and III).

**TABLE II** Life event groups and PSE symptom scores at one year follow up.

| Life event groups                  | Patients (N=55) | P. S. E. Symptom score | Number | Percentage | Mean | SD |
|-----------------------------------|-----------------|------------------------|--------|------------|------|----|
| A. Negative-Negative              | 19              | 34.5                   | 8.0    | 7.4        |
| B. Negative-Positive              | 13              | 23.6                   | 20.7   | 9.3        |
| C. Positive-Negative              | 13              | 23.6                   | 11.0   | 7.8        |
| D. Positive-Positive              | 10              | 18.2                   | 27.9   | 3.3        |

\[F=24.24; \ P<0.001\]

Group A v/s B, \( t=4.18, \ P<0.001 \)

\(A\) v/s D, \( t=1.13, \ NS\)

\(B\) v/s D, \( t=2.91, \ P<0.01\)

\(B\) v/s D, \( t=2.68, \ P<0.02\)

\(C\) v/s D, \( t=7.58, \ P<0.001\)

**TABLE III** Life events and improvement in pulmonary tuberculosis.

| Life event groups                  | Improvement at one year follow up |
|-----------------------------------|-----------------------------------|
|                                   | No. of patient | Percentage |
|-----------------------------------|----------------|------------|
| A. Negative-Negative              | 15              | 78.9       |
| B. Negative-Positive              | 9               | 69.2       |
| C. Positive-Negative              | 10              | 76.9       |
| D. Positive-Positive              | 3               | 30.0       |

\[X^2=8.02, \ d.f.=3, \ C=0.36, \ P<0.05.\]

It was noted that 5 out of 7 patients who were not taking regular antitubercular treatment belonged to positive-Positive life event group. It may be possible that the continued stressful life situations led to discontinuation of drugs or irregular treatment.

Thus a view emerges that life events negatively influence the course of illness and psychological intervention and reassuring attitude of the treating physician could be of help to these patients.

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LIFE EVENTS AND COURSE OF A PHYSICAL ILLNESS

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