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RESEARCH ARTICLE

BIOTECHNOLOGY

**CORRELATION WITH DURATION AND DEPRESSION IN TB PATIENTS IN
RURAL JAIPUR DISTRICT (NIMS HOSPITAL)**

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ABSTRACT

600 patients of pulmonary TB were studied using Beck depressive inventory. Depression was observed in 82% in females. It was observed more among elderly age group (45-55) person and females, business class patients, Middle (Education), Married and those who have low income. No difference was observed with martial and religion. The severity of depression was related to the duration of illness, severity of disease and response to chemotherapy. Depression was present in 82% in females and 52.6% in male of freshly diagnosed patients. It decreased to 69.8% in those who responded favorably to, chemotherapy but those with persistently positive sputum had a significantly high percentage 64%.

KEY WORDS

TB, Depression, Patients

INTRODUCTION

TB is Prevalent in India and continues to be a leading cause of death (Dye et al). Both psychiatric illness and TB are social stigmas, at least in our country. Even now, TB is thought to be a serious incurable disease, especially by illiterate and rural population. As of 2001 India census Jaipur had a population of 2,324,319. Males constitute 53% of the population and females' 47%. In Jaipur 15% of the population is under 6 year of age. Jaipur have a 13 sub-division and Tehsils of district. But rural Jaipur where research conducted which include ,Archol,shahpura,Bherode,Kukas,Chandwazi and all camp patients from villages near by NIMS Hospital. These are the poorest regions of Jaipur with important indigenous settlements and where cultural aspects make it difficult for researchers to communicate sufficiently with patients to achieve effects follow-up of TB. It is a psychological trauma for some persons to be diagnosed as patients of TB. So it is quite probable that this trauma may precipitate or predispose them to a psychiatric order.

This study has been designed to determine the occurrence of depression in patients of TB and to find out the relationship, if any, between depression and the socio-demographic characteristics of TB patients. An attempt has also been made to elucidate the relationship between depression and duration

MATERIAL AND METHODS

The study included 1200 patients of pulmonary tuberculosis admitted in Hospital for Chest Diseases and Tuberculosis, NIMS Hospital Jaipur. The patients belonged to the following three categories.

Group I : 200 freshly diagnosed sputum Positive cases.

Group II : 200 patients who had received Treatment for more than 3 Months with sputum conversion.

Group III : 200 patients who had received Treatment for more than 6 Months but were still sputum positive. Socio-demographic variables were studied in detail and depression scores were rated on Beck Depressive Inventory (1967). Patients having scores of 0-9 were labeled as normal. Those with scores of 10-15, 16-23 and 24 or above were labeled as having mild, moderate And severe depression respectively as per criteria suggested by Sharma (1983).

RESULTS

Depression was observed in 82% per cent of the patients more among elderly persons, buisness class patients, middle school education, separated and those with low per capita income. But small difference was observed with marital status and religion (Table 1). The depression was directly related to the duration of illness, severity of disease (Table 2) and response to chemotherapy; 86 per cent of the patients with illness of more than one year were depressed as compared to only 82% per cent who were ill for less than 3 months (Table 2). Depression was present in 82 per cent of freshly diagnosed cases (Group I). The percentage decreased to 72.5 in those who responded favorably to chemotherapy (Group II) but in failures of treatment i.e. those with persistently positive sputum (Group III) depression was present in 86 %. Moreover, depression was mild to moderate in most of the Group I and II patients while majority of patients in Group III had severe depression table-3

SOCIO DEMOGRAPHIC CHARACTERISTIC									
	Sex		Age Group				Marital status		
	<i>Male</i>	<i>Female</i>	<i>15-25</i>	<i>26-35</i>	<i>36-45</i>	<i>46-55</i>	<i>Married</i>	<i>Single</i>	
No. of Patients	300	300	186	128	117	225	425	175	
No. of Depressed	158	246	93	47	54	186	389	89	
Percentage	52.6	82	50.3	36.7	46.3	82.7	91.5	50.8	
	Religion			Education			Income		
	<i>Hindu</i>	<i>Muslim</i>	<i>Illiterate</i>	<i>Primary</i>	<i>Middle</i>	<i>Secondary</i>	<i><5000</i>	<i>5,000-10,000</i>	<i>>10,000</i>
No of patients	482	118	252	113	203	42	110	213	225
No. of Depressed	347	96	187	47	162	7	87	113	207
Percentage	71.9	81.3	74.2	41.5	79.8	16.6	79.09	53.3	77.029
	Occupation			Family type					
	<i>Farming</i>	<i>services</i>	<i>business</i>	<i>Labour</i>	<i>Joint</i>	<i>nuclear</i>			
No. of Patients	223	92	167	118	348	252			
No. of Depressed	98	16	82	34	118	208			
Percentage	43.9	17.3	49.1	28.8	33.9	82.5			

Table 2

Correlation of depression with duration of illness and extent of X rays lesions							
	Duration of illness				Extent of X-rays lesions		
	<i><3 month</i>	<i>3-6</i>	<i>6-12</i>	<i>>12</i>	<i>Minimal advanced</i>	<i>Moderately</i>	<i>Far advanced</i>
No. of patients	352	112	86	50	148	332	220
No of depressed	246	82	72	48	28	54	123
Percentage	69.8	73.2	83.7	96	58.3	16.62	55.9

Table 3
Extent of Group wise depression

Group of cases	Total no patients	No of depressed	Percentage
Group I	200	164	82
Group II	200	145	72.5
Group III	200	172	86

DISCUSSION

The study shows depression in 82 per cent of hospitalized tuberculosis patients, which is definitely higher than that reported in other non-tuberculosis pulmonary disease like chronic Bronchitis, emphysema and lung cancer (Purohit *et al.* 1978; Tandon, 1980). This may be due to the fact that illiteracy and low socio-economic status which are some of the important factors Responsible for depression (Sethi and Gupta, 1970; Davies, 1973; Bagadia *et al* 1973) also make a person more susceptible to tuberculosis. But this alone cannot explain the entire differences the attitude of society, relatives and family members and of the patient himself as well as other psychological variables are also important factors in the causation of depression (Moudgil and Prashad, 1972; Dubey 1975). A greater occurrence of depression was also observed in patients with prolonged illness. This may be due to longer period of suffering and consequent strain on psychological coping mechanism. Hospitalization itself, loss of earning, sense of worthlessness and hopelessness may lead to self devaluation, conscious and unconscious fear of disease and death. A positive correlation between duration of illness and occurrence of depression has also been observed by Purohit *et al* ~1978, Tandon 1981. *et al.* 1980 and Mathai *et al.* Still another factor responsible for higher incidence of depression in our study was severity of illness. Thus, there is a complex interplay of duration, nature and severity of illnesses one hand and psychological factor on other. This is corroborated by Dubey 1975, Mathur 1977 and Purohit *et al* 1978. An important

observation in our study is that with institution of chemotherapy and amelioration of symptoms, the depression decreases while in those with persistently positive Sputum (Group III) it further increases. Since some of the anti-tubercular drugs like isoniazid, ethionamide and cycloserine are known to cause depression (Storey and McLean 1957, Duncan and Kerr 1962, Devadutta 1966, Landsdown *et al* 1967, B.T.A. 1968, Olsen and Torning 1968, Curci 1970, Mitchess and Lester 1970, Narang 1972) and most of group III patients were on these drugs for long periods which might have contributed to some extent to depression observed in this group of patients. But it seems unlikely that these drugs alone could explain the difference between the two categories of patients. Though the exact role of these drugs (especially isoniazid) is difficult to assess but it may be pointed out that it caused Psychosis in only eight out of 4960 patients in one of the studies (Gupta *et al* 1981). It seems more likely that with regular intake of drugs the patients' condition improves, the fear of prolonged suffering and death disappears and the confidence thus gained leads to easing of psychological stress and strain. Return to work consequent on relief of symptoms reduces financial strain which again makes the patient less vulnerable to depression. However, persistence of symptoms in Group III patients further aggravates the depression.

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