A TRANS-CURRICULAR MENTAL HEALTH STUDY THROUGH TWO SELF-REPORT PSYCHOMETRIC TESTS

By Z. N. Kadri

SYNOPSIS

Psychological screening by means of self-administered questionnaires of all new entrants and the subsequent checkups of potential breakdowns may not be a full-proof method in the early detection and prevention of psychiatric disorders in a university setting. Nevertheless, it is the only practical or feasible solution under the existing local conditions.

In this preliminary survey an attempt has been made by means of M-R scores of the Cornell Medical Index and the Eysenck Personality Inventory (Form A) to obtain psychic norms of our freshmen. There was evidence suggesting that neuroticism differed between two sexes and between various faculties. The M-R score of above 10 on the CMI scale is predictive or indicative of minor psychiatric disturbances. In this respect, our cohort's female group resembled identical British female group. On the other hand, our males' mean score was significantly raised above their British counterparts. Tentative explanations have been advanced in support of our results.

INTRODUCTION

Many psychological tests have been devised in an attempt to predict psychological vulnerability in university students. Caldbeck-Meenan (1966) advanced the view that certain medical and non-medical factors correlated with mental ill-health can be elicited by questionnaires and may serve to identify those students who are at greater risk during their academic careers. Cattell (1957) made a distinction between culture-free and culture-bound personal characteristics relevant to the study of personality. Among the culture-free characteristics he included level of anxiety, among culture-bound sentiment for sports and science.

The purpose of our investigation was threefold: firstly, to determine normal distribution of psychic profiles by means of responses on the M-R scales of the Cornell Medical Index and the N and E scales of the Eysenck Personality Inventory (Form A) in the freshmen population of the University of Singapore; secondly, to ascertain whether the subjects attending different courses of study differed in symptoms of neurosis, neurotic traits, introversion and extroversion; and thirdly, to compare these national characteristics with those of students in Great Britain.

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The Cornell Medical Index

The Cornell Medical Index (CMI) consists of 195 questions corresponding closely to those usually asked in a detailed and comprehensive medical interview including many of the psychological aspects of the patient's disorder. Questions are in informal language and worded in such a way that they can be understood by persons with a reading knowledge of simple English (Brodman *et al*, 1949). Of the total 195 questions included in the inventory, 51 queries in the M-R section relate to such pyschic aspects of health as feelings of inadequacy, anxiety, undue sensitivity, anger and tension. According to Culpan *et al* (1960) the score of above 10 has been found to yield the minimum amount of misclassification of normal and psychiatric patients of both sexes.

The Eysenck Personality Inventory

The Eysenck Personality Inventory (EPI) with its two dimensional classification of personality in terms of stable versus neurotic, and introverted versus extroverted, may not be considered adequate in studying individuals; nevertheless, it is of value in comparing groups and populations. Its forerunner the Maudsley Personality Inventory (MPI) based on similar principles to measure neuroticism and extroversion versus introversion has turned out to be fairly valid for cross-cultural studies in Chile (Bolardos, 1964), India (Jalota, 1964), and in Lebanon (Rafi, 1965). Even the means of the scales in the samples were not significantly different from the means of the standardisation in Britain. Kline (1967) found the EPI to be a

valid instrument among the English educated Ghanaian students. In the manual to the EPI the mean N_a (neuroticism) score for the standardisation sample was 9·1 for the British general population, but the average for their students' score was 10·0 with standard deviation (S. D.) of 5·0. The mean E_a (extroversion versus introversion) for students was 11·1 with S. D. of 4·5. On L_a or lie scale which implies the tendency to answer in the socially desirable fashion, scores of 5 or above would be considered to constitute the cutting point where the inventory answers ceased to be acceptable. Our sample's mean L_a was 3·8 with a S. D. of 1·8 which findings were very close to those obtained by Eysenck *et al* (1964). Prior to this study, no validity of the test in our cultures was carried out. However, a repeat reliability of the EPI in the form of tests and retests done on a random sample of 78 sophomores at interval of two months showed coefficients of correlations for N_a, E_a and L_a running from 0·89, 0·87 to 0·75 in that order.

PROCEDURE

The M-R sections of the CMI and the EPI (Form A) were simultaneously administered to 59 per cent of the student intakes at the beginning of 1970-71 and 1971-72 academic sessions. Of the 41 per cent freshmen excluded from the inquiry, 18 per cent were drawn from the Chinese and Malay streams of pre-university education and 23 per cent were for studies leading to degrees in engineering. The reasons for not calling the former group was that they might not be able to comprehend fully the implications of the questionnaires; whereas the latter group fell outside the scope of the University Health Scheme; because the faculty of engineering is located on a different and distant campus.

The students were called in groups of 15 to 20 daily on weekdays, when the purpose and procedures involved in completing both questionnaires were fully explained. During the survey periods 1,187 subjects were called; but 1,152 of whom 10 per cent were Malaysians satisfactorily completed the inventories; 29 individuals refused to do so for various reasons, and 6 were rejected for not completing all the answers. In our cohort women outnumbered the men by 582 to 570. The relatively high proportion of female entrants to the University for the past few years has been attributed to compulsory National Service for all physically fit males on reaching the age of 18 years. The ages of this sample ranged from 19 to 21.

RESULTS

The distributions of M-R scores on the CMI, and N_a and E_a scores on the EPI are reproduced in the form of histograms in figures 1, 2 and 3

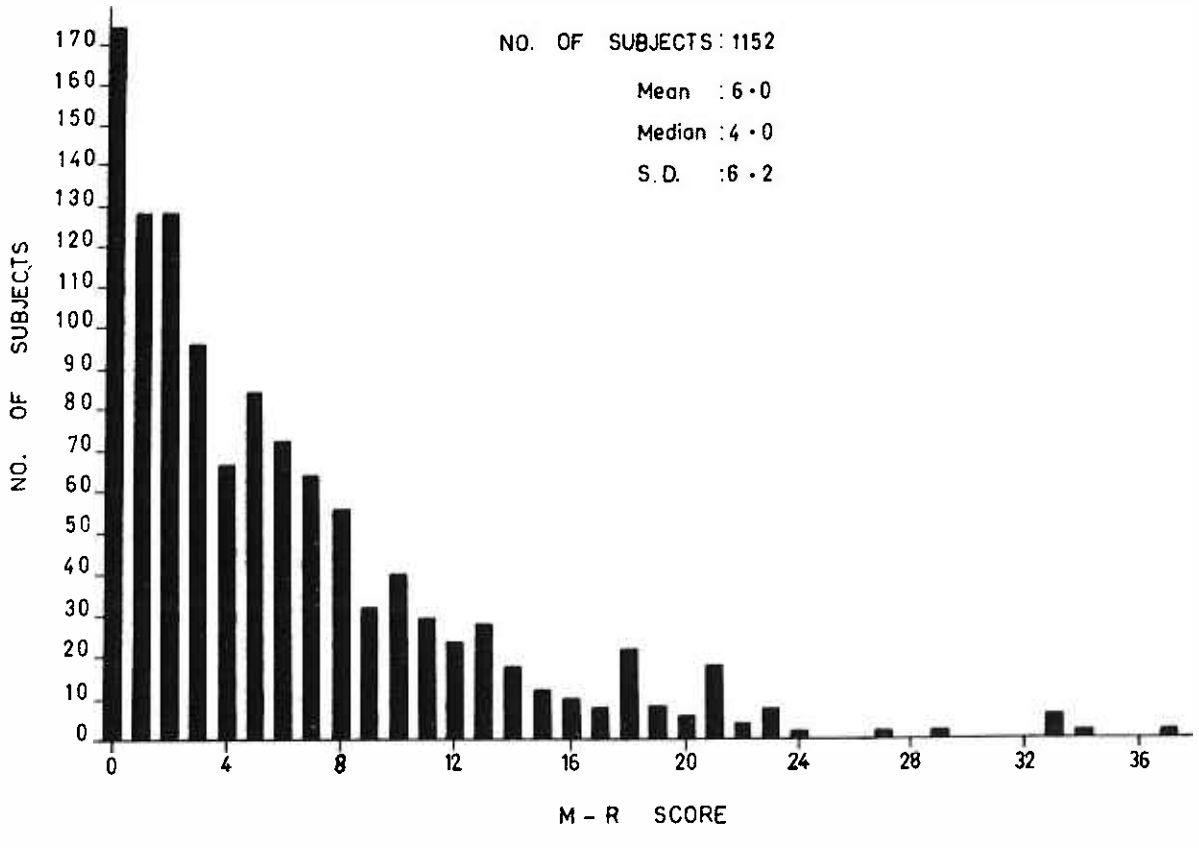

FIG. 1 - Frequency distribution of M - R Scores of the C.M.I.

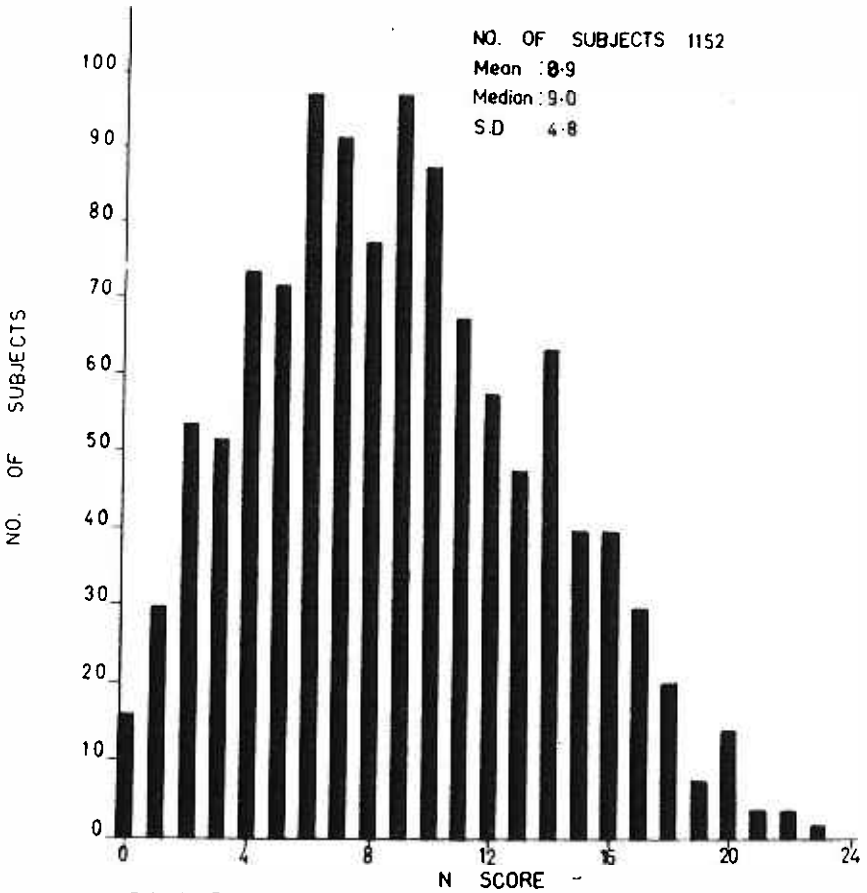

FIG 2 – Frequency distribution of N Scores of the EPI

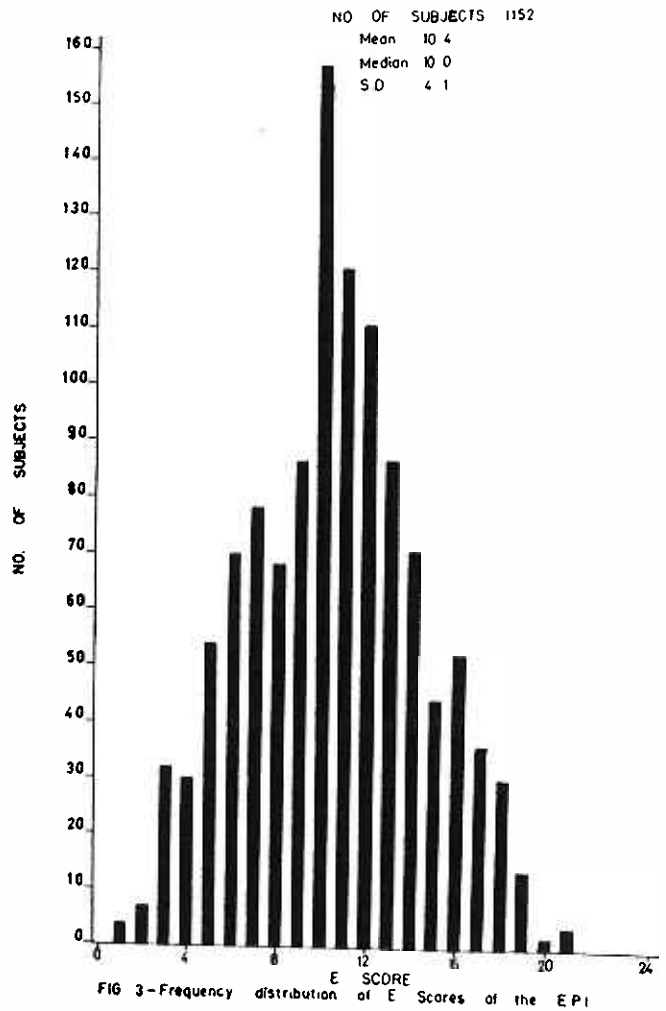

FIG 3 – Frequency distribution of E Scores of the EPI

respectively. The mean M-R score was 6·0 and the means of N_a and E_a scales of the EPI were 8·9 and 10·4 respectively. It is obvious from the diagrams that the N_a and E_a scores were almost uniformly distributed, but the M-R scores were skewed to the left. The findings are in keeping with the views held by Eysenck that the N_a score measures phenotypic neuroticism, a personality trait which predisposes an individual to get neurotic symptoms and that it is normally distributed in the general population. On the other hand, Culpan *et al* (1960) have shown that the M-R score which actually measures neurotic symptoms and not the predisposition to get them, was not normally or uniformly distributed in the general population.

Profiles Based on Courses of Study

Considering the M-R scale first (Table I), both male and female entrants to the faculty of arts and social sciences registered the highest means of 7·8 and 8·9 respectively. At the other end of the spectrum, male and female students joining the medical faculty recorded the lowest mean figures of 3·1 and 4·5. Those undertaking all other courses were distributed at varying levels between these two poles.

Results of investigations on N_a and E_a scales of the EPI are included in Table I. The mean N_a scores of 10·8 of arts and social sciences freshmen

TABLE I

MEAN M-R, N AND E SCORES ACCORDING TO FACULTY/SCHOOL

FACULTY/ SCHOOL	NUMBER			CMI (M-R)				EPI (N_A)		EPI (E_A)	
				Male		Female					
	Male	Female	Total	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Arts and Social Sciences	32	152	184	7·8	6·5	8·9	7·4	10·8	4·7	10·7	4·1
Law	70	62	132	3·2	4·6	6·8	7·4	8·3	4·8	11·6	4·2
Science	90	122	212	4·3	5·0	6·2	5·5	8·0	4·7	9·5	3·3
Medicine	46	28	74	3·1	3·0	4·5	4·3	7·9	4·3	11·4	4·3
Business Administration	72	46	118	4·9	6·2	4·7	4·4	9·0	4·7	11·3	3·4
Accountancy	78	138	216	3·6	3·6	7·1	6·8	8·9	4·9	9·8	4·0
*Others	182	34	216	6·7	6·8	5·6	3·8	8·9	4·8	10·4	3·7

*Dentistry, Pharmacy (including some students studying Architecture and Fisheries.)

TABLE II

COMPARISONS BETWEEN SINGAPORE AND BRITISH STUDENTS ON THE EYSENCK PERSONALITY INVENTORY SCALE

NORMAL GROUPS	N_A		E_A		Number	Male	Female
	Mean	S.D.	Mean	S.D.			
Singaporean	10·4	4·1	8·9	4·8	1152	570	582
British (Eysenck *et al*, 1964)	10·0	5·0	11·1	4·5	347	158	189

and 7·9 of medical freshmen stood at the two ends of the personality profiles. Students proceeding to study law with their highest mean E_a values of 11·6 were in contrast to science and accountancy freshmen with mean scores of 9·5 and 9·8. Thus, law freshmen were definitely more extroverted than science and accountancy subjects.

Profiles Based on Nationalities

Table II shows that the indigenous sample's mean N_a score was 10·4 and that of the British students was 10·0; the mean E_a scores of Singapore and British students were 8·9 and 11·1 respectively. Table III is reproduced to ascertain whether any significant difference existed on the M-R scale with responses of above 10 between the cross-section of our group and those from Great Britain. While 14·4 per cent of Singapore males and 22·3 per cent of females fell into this category respective figures for the British were 11·0 per cent and 22·0 per cent.

TABLE III

COMPARISONS BETWEEN SINGAPORE AND BRITISH STUDENTS ON THE CMI'S M-R SCALE WITH SCORE OF MORE THAN TEN

NATIONALITY	MEN	WOMEN
Singaporean	14·4%	22·3%
British (Culpan *et al*, 1960)	11·0%	22·0%

It is obvious that regardless of hereditary and ecological factors there was resemblance between the personality profiles of the Singapore and British youths on the EPI's N_a and E_a scales. However, on the CMI's M-R scale which is reflective of actual neurosis there was a great deal of similarity between our women and the British women, but our men scored significantly higher than their British counterparts.

COMMENTS

Our findings revealed that women were relatively more neurotic than men. Similar differences between the M-R test results in two sexes were noted by Culpan *et al* (1960), and Herbolsheimer *et al* (1958). The former argued that a good deal higher M-R scores of normal females than those of males was suggestive of test items being biased towards female symptoms or because their cultural background permitted them to admit a greater number of symptoms than men. As items giving large sex differences were eliminated during the construction of the EPI, correlations with sex are not large. Nevertheless, according to Eysenck (1964) women tend to score higher than men on N_a and lower on E_a.

The highest incidence of neurotic traits and anxiety levels found among entrants to the faculty of arts and social sciences could be ascribed to the following factors:—

(a) majority of students were females;
(b) incidence of congenital or chronic acquired physical disorders was highest in this discipline;
(c) students opting for this faculty perceived marked disparity between the actual contents of curricula to be studied as undergraduates, and their ultimate intellectual goals and roles in life; and
(d) inherited or acquired personality variables in some way were related to choices of subjects, because they had not yet experienced university environment.

That students wishing to major in this faculty are most vulnerable and succumb to pre-examination tensions and panics has been the author's experience for several years. Similar divergences between arts and science students were reported by Ryle (1966) at the Sussex University. He postulated that this was largely due to the very different academic environments of the two groups prior to coming to the university, with the arts students to be free with their largely uncommitted time devoted to more private study compared with the science stream students with a highly structured programme of classes and practicals. He was also of the opinion, that male arts freshmen had a tendency to identify more strongly with mothers, and science students to identify more strongly with fathers than arts freshmen. He further speculated that stronger identification with the opposite sex parents gave rise to neurotic tendencies as measured by the EPI and explained higher mean neuroticism score of male arts students.

The medical students were the least neurotic. This might be due to the fact that professional degrees in medicine, engineering and law are the most sought after, because of better financial rewards and higher social standings offered by them. Majority of dentistry and pharmacy freshmen are known to prefer medicine as their careers; but since they have to settle for courses of second choice, they feel disappointed and are prone to develop feelings of insufficiency and anxiety states as shown here. Like the law students who were most extroverted those planning to study business administration with a view to become managers and executives also tended to be extroverted. On the other hand, accountancy and science students were temperamentally most introverted.

The Republic of Singapore has made major strides in trade and industrialisation, and thereby opened up greater opportunities for employment. As a matter of fact the Republic is currently experiencing full-employment. Nevertheless, unlike large industrialised nations of the west, the smallness and compactness of the island imposes a great deal of restriction on the mobility of our young men and women. In contrast with his counterpart in other large developed countries, a Singapore undergraduate who drops out from the university or fails to achieve a good qualification has no other place to move to and pursue careers suited to his temperament or choice. Feelings of loss of face, shame and guilt arising from failure to be an academic success inspite of hard work are much more distressing to a Singapore student than to a student in similar circumstance in other countries. Therefore, the attitudes of our students towards studies and passing examinations differ so much from those in western countries. These feelings are even more marked in the case of males whose aspirations are naturally higher than those of girls. Besides, in a materially achievement orientated society like ours, pressures for academic achievement from parents and guardians especially on male offsprings are very heavy right from the primary to the tertiary education levels.

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