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FIELD DEPENDENCE: A CROSS-CULTURAL STUDY

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ABSTRACT

In order to have an objective measure of dependency the well-known Rod-and-Frame Test (RFT) was administered to members of widely differing cultures. A total of 128 subjects from Iran, Palestine, Pakistan, Somalia and Thailand were employed in the present study. An overall significant difference (Kruskal-Wallis H=14.1, P<.01) was found among various groups. Further analysis revealed significant differences between Iranians and Pakistanis, Pakistanis and Somalians, and between Pakistanis and Palestinians only but for no other groups. Iranians, Palestinians and Somalians were found to be more field-dependent than Pakistanis. So far as the question of correlation between RFT scores and Standard Progressive Matrices scores is concerned the data indicated that field-dependency was not related to general intellectual ability in the same manner among the various cultural groups.

INTRODUCTION

The belief that the individual's perceptions are influenced by his personality characteristics is certainly not new. Those familiar with the best known projective devices know very well that responses to vague or unstructured stimuli reveal a great deal about the person's personal world -- his peculiar way of looking at reality, conceptualizing things and people, and organizing experience. However, the traditional clinical-psychometric approach has recently been supplemented by experimental investigations which try to apply laboratory methods to the study of individual differences in perception. Witkin and his collaborators (1954, 1962) have carried out a series of studies of cognitive style and related them to many aspects of their subjects' lives. They have chiefly concentrated on a dimension of cognitive style known

first as field dependence and then psychological differentiation. Witkin found that his experimental measures of field dependence were correlated with several general personality dispositions. Field dependence depicts an individual's ability to overcome the embedding effects of a perceptual context upon an item within that context. In one of the tests of field dependence (Rod-and-Frame Test) observers are shown a luminous tilted square framework in a completely darkened room, and were asked to set a moveable luminous rod in what they thought was the true vertical position. The greater the accuracy of his placement of the rod at the true upright, the more field independent is the subject's performance. On the other hand, the greater the tendency to bring the rod in line with the tilted frame, the more field dependent is his performance.

Performance on the tests of field dependence has been extensively studied in relation to a variety of psychological variables. On the basis of evidence obtained from some of their early studies of field dependence one group has suggested significant relationships between perceptual field dependency and susceptibility to the influence of others (Linton and Graham, 1959). Greater susceptibility was found to be associated with more field dependent test scores.

Field dependent subjects tended also to display poor analytic abilities in other intellectual situations (Witkin, et al., 1962). They further showed passivity, readiness to submit to authority, little self-esteem, and a tendency to anxiety. Field independent subjects, on the other hand, were much more active, independent, self-reliant, and self-confident.

Witkin (1949) found consistent sex differences in extent of field dependence, women being more field dependent than men. Other studies have substantially confirmed this finding for a variety of groups. Witkin and his associates (1959) have noticed sex differences down to the 8-year level. But there is evidence suggesting an absence of sex differences in geriatric groups (Schwartz and Karp, 1967). Sex differences have also been observed for various groups belonging to diverse educational and socio-economic backgrounds. Newbigging (1952, 1954) and Bennet (1956) have reported significant sex

differences, in the expected direction, for a group of English subjects tested respectively with the Embedded Figures Test (EFT) and Rod-and-Frame Test (RFT). Wit (1955) used a modified version of the EFT and the RFT and confirmed sex differences for a group of Dutch subjects. Andrieux (1955) observed similar sex differences among French adults, and Chateau (1959) among French children and young adults. Korchin and Goodnow (see Witkin, et al., 1962) found significant sex differences in EFT performance in a group of Italian psychiatric patients as well as for Hong Kong subjects.

Witkin (1966) also reported clear-cut and consistent sex differences in field dependence in quite different groups in the United States, England, Holland, France, Italy, Israel, Hong Kong and Sierra Leone, women being more field dependent than men. Berry (1966) observed sex differences in the same direction in his Temne and Scottish samples but he failed to get significant differences between the two sexes for his samples of Eastern Eskimos from Baffin Island.

This was in line with the fact that Eskimo women and children are allowed extreme freedom and very loose controls are exercised over them. Mac Arthur (1967) administered Vernon's Embedded Figures Test to two samples of Western Eskimo subjects and found males to be more field independent than the females. His results suggest that social or other environmental forces contribute a lot to the observed sex differences in the field-dependent and independent modes of approach.

The major function of cross-cultural research is the study of psychological variables across cultures to determine the generality of their interrelationships. If we are really interested in evolving truly general psychological principles it can only be done when more than one culture is studied. Scientific research carried out in one place with one method will generate principles relative to that place and that method rather than general ones.

As an example of cross-cultural research on dependency, a set of studies may be cited. Barry, Child, and Bacon (1959) were interested in ascertaining the relationship between the type of subsistence economy of a society and the

personality of its members. Specifically they distinguished between hunting or fishing societies and pastoral or agricultural groups. They hypothesized that members of the hunting and fishing societies would tend to be individualistic, assertive and adventurous. The members of the agricultural society, on the other hand, would be conscientious, compliant and conservative. As a test of this hypothesis Berry (1967) conducted experiments to objectively measure dependency in two widely differing cultures - the Eskimo of Baffin Island and the Temne of Sierra Leone. The Eskimos live in an area where there is no edible vegetation. They serve as an example of a low food-accumulation or a hunting and fishing culture. The Temne, on the other hand, can conveniently be classified as a high food-accumulation culture. They are basically rice farmers who ration their single annual crop in daily units. As a behavioral measure of dependency, Berry (1967) employed the well-known Asch technique, the line-judging task. As expected, the results showed that the agriculturally-oriented people of the Temne society were significantly more dependent than the Eskimos in making their judgements. As a sign of cooperation the Temne people go along with the decision of the Temnes whereas the Eskimo's livelihood does not require such dependence on others. He lives almost solely by hunting and fishing, skills which require independence on his part. The comparison sample from Scotland showed an intermediate degree of dependency which was not too different from the test scores of the Eskimos. It has been argued that even though the Temne and the Eskimo societies differed significantly in the line-judging task, yet, the confounding effect of other variables cannot be ruled out. It is not certain that these variables are casually related. It is quite possible that the differences in dependency were due not to their respective economies at all but to one or more of the other differences between the two societies.

Witkin and his associates (1962) have identified harsh parental discipline, strict control, conformity, authority and group reliance as the main variables which lead to the development of a field-dependent mode of approach. Because of the existence of polygamous family groups in Sierra Leone, mothers of field dependent sons tend to be dominating, emotional and anxious, while the father is generally passive and an inadequate role model. The father loses the necessary

contact with his children owing to his responsibilities to his other wives and children. In Sierra Leone tribal culture lays stress on conformity, authority, harsh discipline and group reliance. Individual initiative is discouraged by harsh social sanctions and the individual is compelled to conform with the norms of the group. These social processes described by Dawson (1963) are considered to be the potent factors in the development of a field-dependent mode of approach.

In order to ascertain the possible relationship between parental disciplinary pattern and field-dependence a homogenous Sierra Leone tribally representative male sample of skilled workers was used. The results came up to the expectation. There was a highly significant relationship between degrees of maternal discipline and measures of field-dependence. Further, a detailed study of the Temne and the Mende were made. Temne tribal values were found to be more aggressive than the Western-type values of the Mende. The Temne mother is highly dominating and demands maintenance of strict discipline. The Mende mother, on the other hand, is not so dominating. Individual initiative is comparatively encouraged. Consequently, Temne males were found to be significantly more field-dependent than the matched Mende males on the EFT.

Wober (1967) compared Nigerian workers with American subjects on R.F.T. In both cases of Amercan subjects (Witkin and Asch, 1948; Comalli et al., 1959) the level of error was greater than that found for Nigerians.

In sum, the present experiment was undertaken to explore differences in field-dependence across cultures. If we are really interested in evolving a truly general psychological principle relating to field dependence - independence it can only be feasible when more than one culture is studied.

METHOD

Subjects: A total of 128 subjects - 27 Iranians, 43 Palestinians, 28 Pakistanis, 14 Somalians and 16 Thais constituted the sample. All were volunteers and none had taken any courses in psychology.

Apparatus: Rod-and-Frame Test (T.K.K. model). This is a test

of field dependence. It consists of a luminous rod and frame housed in a dark box. Both the rod and frame can be rotated independently and the angle of their rotation can be read immediately on a scale provided on the outside of the box. At the beginning of each trial both rod and frame are presented in tilted position. The subject is required to bring the tilted rod to a position that he percieves as vertical. He is given eight trials. On all trials a large deviation of the rod from its true vertical indicates adherence to the visual field whereas a small tilt indicates independence of the field. (Test score is the mean of eight trial scores.)

Procedure: All the subjects were tested individually. The subject was led into a cubical containing the Rod-and-Frame apparatus and after a short while he was read the following instructions:

"In this test we want to ascertain how well you can determine the upright, i.e. the vertical. When I shall remove the shutter you will see a rod surrounded by a square frame. It is possible for me to tilt the frame to left or right. I can tilt the frame alone or the rod alone, or I can tilt them both at the same time, either to the same side or to opposite sides. When I shall remove the shutter at the beginning of each trial, I want you to tell me whether the rod is straight up and down, i.e. vertical, or whether it is tilted".

When the shutter was removed, the subject saw the luminous rod and frame tilted at a certain angle. He was asked whether he could see the rod and the frame. He was further asked about the position of the rod. When he said that the rod was not vertical he was asked to bring the tilted rod to a vertical position.

In this way, each subject gave his judgement about the verticality of the rod eight times. The final score was the mean error in degrees from the two upright for the eight trials.

Following the RFT an intelligence test (Standard Progressive Matrices, sets A through E) designed by Raven (1958) was administered individually.

RESULTS

Table 1 provides RFT and intelligence scores of Iranian subjects. Table 2,3,4 and 5 show the RFT and intelligence scores of Palestinians, Pakistanis, Somalians and Thais respectively. Overall significant differences were found among various groups (Kruskal - Wallis H= 14.1, P<.01). A series of t-tests and Mann-Whitney U and Z tests were run to exactly locate the differences among the various groups (See Table 6).

TABLE 1

FIELD DEPENDENCY AND INTELLIGENCE SCORES OF 27 IRANIAN SUBJECTS

SUBJECT NO.	INTELLIGENCE SCORES	RFT SCORES
1.	48	1.18
2.	29	2.55
3.	37	2.87
4.	35	3.50
5.	41	2.18
6.	50	0.43
7.	49	0.68
8.	19	26.62
9.	38	2.00
10.	51	2.12
11.	49	2.37
12.	21	15.37
13.	28	0.68
14.	43	3.68
15.	38	1.68
16.	52	1.31
17.	14	4.18
18.	11	17.00
19.	37	9.37
20.	22	14.12
21.	07	3.87
22.	08	3.75
23.	27	1.50
24.	42	1.68
25.	30	2.93
26.	47	37.87
27.	45	1.50

TABLE 2

FIELD DEPENDENCY AND INTELLIGENCE SCORES OF 43 PALESTINIAN SUBJECTS

SUBJECT NO.	INTELLIGENCE	RFT SCORES
1.	41	2.12
2.	17	1.65
3.	17	1.43
4.	13	2.75
5.	25	2.12
6.	30	26.00
7.	36	1.68
8.	34	0.62
9.	29.	44.50
10.	12	1.81
11.	23	1.31
12.	32	2.00
13.	35	2.62
14.	34	3.31
15.	12	4.12
16.	13	7.37
17.	21	23.87
18.	09	19.31
19.	19	2.25
20.	12	3.18
21.	31	5.00
22.	12	15.62
23.	48	0.43
24.	34	1.12
25.	40	2.12
26.	50	1.87
27.	32	1.81
28.	24	1.50
29.	29	2.75
30.	17	2.68
31.	45	1.12
32.	28	8.62
33.	35	33.25
34.	31	1.75
35.	28	2.12
36.	31	4.12
37.	21	2.31
38.	22	2.75
39.	19	1.87

Table 2 (Conted)

40.	18	0.37
41.	42	34.12
42.	17	1.37
43.	44	1.87

TABLE 3

FIELD DEPENDENCY AND INTELLIGENCE SCORES OF 28 PAKISTANI SUBJECTS.

SUBJECT NO.	INTELLIGENCE SCORES	RFT SCORES
1.	35	2.31
2.	20	15.12
3.	37	2.00
4.	31	2.18
5.	22	1.25
6.	50	0.87
7.	48	2.75
8.	39	0.28
9.	45	0.62
10.	41	1.75
11.	32	0.37
12.	26	1.50
13.	24	2.50
14.	19	1.31
15.	36	0.18
16.	42	1.68
17.	33	5.18
18.	32	0.75
19.	33	2.21
20.	18	10.25
21.	23	1.62
22.	32	0.62
23.	32	1.87
24.	37	2.12
25.	45	0.25
26.	44	2.00
27	25	1.62
28.	45	1.40

TABLE 4

FIELD DEPENDENCY AND INTELLIGENCE SCORES OF 14 SOMALIAN SUBJECTS

SUBJECT NO.	INTELLIGENCE SCORES	RFT SCORES
1	18	1.37
2.	29	3.43
3.	25	2.25
4.	39	2.87
5.	15	2.75
6.	14	1.25
7.	36	2.09
8.	08	35.62
9.	27	1.75
10.	22	35.81
11.	29	3.37
12.	09	32.56
13.	35	2.37
14.	18	10.12

TABLE 5

FIELD DEPENDENCY AND INTELLIGENCE SCORES OF 16 THAI SUBJECTS

SUBJECT NO.	INTELLIGENCE SCORES	RFT SCORES
1.	34	1.12
2.	38	1.50
3.	35	0.93
4.	48	1.87
5.	12	16.25
6.	31	11.31
7.	36	61.62
8.	24	3.12
9.	39	0.87
10.	44	1.62
11.	48	0.62
12.	17	5.62
13.	42	1.06
14.	20	2.75
15.	49	2.25
16.	37	2.68

TABLE 6

t RATIO BETWEEN GROUPS ON FIELD DEPENDENCE

GROUPS COMPARED	t	df	LEVEL OF SIGNIFICANCE
Iranians vs. Pakistanis	2.09	53	$P < .05$
Iranians vs. Palestinians	0.15	68	Not significant
Iranians vs. Somalians	1.46	39	Not significant
Iranians vs. Thais	0.22	41	Not significant
Pakistanis vs. Palestinians	2.51	69	$P < .01$
Pakistanis vs. Somalians	2.02	40	$P < .05$
Pakistanis vs. Thais	1.14	42	Not significant
Palestinians vs. Somalians	0.81	55	Not significant
Palestinians vs. Thais	0.14	57	Not significant
Somalians vs. Thais	0.50	28	Not significant

TABLE 7

MANN-WHITNEY TEST

GROUPS COMPARED	z	LEVEL OF SIGNIFICANCE
Iranians vs. Pakistanis	-2.76	P= 0.0029
Iranians vs. Palestinians	-0.29	P= 0.3859
Iranians vs. Somalians	-0.65	P= 0.2578
Iranians vs. thais	0.70	P= 0.2420
Pakistanis vs. Palestinians	2.70	P= 0.0035
Pakistanis vs. Somalians	-2.97	P= 0.0015
Pakistanis vs. Thais	-1.41	P= 0.0793
Palestinians vs. Somalians	-1.42	P= 0.0778
Palestinians vs. Thais	0.70	P= 0.2420
Somalians vs. Thais	78(U)	P>.05

TABLE 8

CORRELATION: INTELLIGENCE SCORES AND DEPENDENCY SCORES

GROUPS	N	rs	LEVEL OF SIGNIFICANCE
Palestinians	43	0.03	Not significant
Pakistanis	28	-0.44	$P < .02$
Iranians	27	-0.14	Not significant
Somalians	14	-0.56	$P < .05$
Thais	16	-0.15	Not significant

The difference between Pakistani and Palestinian groups is significant, Palestinians being more field-dependent than the Pakistanis (t=2.51, df 69, P<.01; Mann-Whitney Z = 2.70, P=.0035). The difference between Iranian and Palestinian is not significant (t=0.15, df 68; Mann-Whitney Z= -.29, P=0.3859). Again, no difference in statistical terminology was found between Palestinians and Thais (t=0.14, df 57; Mann-Whitney Z =0.70, P=0.2420). Also, no significant difference was noted between Palestinians and Somalians (t=0.81, df 55; Mann-Whitney Z= -1.42, P=0.0778). Albeit, a clear difference was evident between Iranians and Pakistanis (t=2.09, df 53; P<.05; Mann-Whitney Z= -2.76, P= 0.0029). Pakistani and Thai groups yielded no significant result (t=1.14, df 42; Mann-Whitney Z= -1.41, P= 0.0793). On the other hand, Pakistanis and Somalians showed a significant difference (t=2.02, df 40, P<.05; Mann-Whitney Z= -2.97, P=0.0015).

Iranian and Thai groups gave no significant result (t=0.22, df 41; Mann-Whitney Z= 0.70, P= 0.2420). Similarly, significant difference was found neither between Iranian and Somalian groups (t=1.46, df 39; Mann-Whitney Z= -0.65, P= 0.2578) nor between Somalian and Thai groups (t= 0.50, df 28; Mann-Whitney U=78).

The correlation (Pearson Product-Moment Correlation Coefficient) between RFT Scores and Standard Progressive Matrices scores were computed. As is evident from Table 8 the significant correlations obtained are in relation to the Pakistanis and Somalian groups only, but for no other groups. The correlation between RFT scores and intelligence scores, combining all cultural groups is significantly negative (r= -0.22, df 126, P<.05. There is virtually no relationship between the two in the case of Palestinians (r= .03, df 41).

DISCUSSION

To find that culture is a factor in field dependence is not a surprising result; indeed it is an expected one. Previous studies, though few in number, have shown differences in field dependence across cultures. Barry, Child and Bacon

(1959) studied the relationship between the type of subsistence economy of a society and the personality of its members. Berry (1967) conducted experiments to objectively measure dependency in two evidently differing cultures -- the Eskimo of Baffin Island and the Temne of Sierra Leone. The study showed that the agriculturally-oriented people of the Temne society were significantly more dependent than the Eskimos who live almost solely by hunting and fishing. Wober (1967) compared Nigerian workers with American subjects on Rod-and-Frame test. In both cases of American subjects (Witkin and Asch, 1948; Comalli et al.; 1959) the level of error was greater than that found for Nigerians.

The idea behind the present study was to invesigate whether there are differences on measures of field dependency in widely differing cultres. To this end various cultural groups - Iranians, Palestinians, Pakistanis, Somalians and Thais - were utilized. As expected, an overall significant difference was found among various groups. Further analysis revealed significant differences between Iranians and Pakistanis, Pakistanis and Somalians, and between Pakistanis and Palestinians only but for no other groups. Palestinians were found to be more field-dependent than Pakistanis. The probable reasons might be the fact that the Palestinians have grown up in refugee camps. The children never have known the concept of home let alone homeland. With no support, no homeland and no base they might have been at the mercy of others and consequently might possibly have developed the trait of dependency. Also, a clear difference emerged between Iranians and Pakistanis, Iranians being more field dependent than Pakistanis.Again, Somalians were more field dependent than Pakistanis.

Correlations were also computed between the scores on the RFT and scores on the Standard Progressive Matrices. This was done because Witkin and his associates (1954) gave a hint that the individual differences found in the area of perception might be related to intellectual functioning. "It is likely-and this is of course subject to experimental test-that if a person has this basic ability to 'break up' a configuration it will be manifested not only in straightforward perceptual situations, but in problem-solving situations as well" (Witkin, et al. 1954, p.477).

This consideration was based on some early evidence. Woerner and Levine (1950) found, in a small group of twelve-

year-old children, a significant relation between scores on 'a perceptual battery' and scores on the Wechsler Intelligence Scale for Children (WISC). This raised the possibility that field-independence might be associated with superior general intelligence. Witkin and his associates (1962) also explored the relation between perceptual field-dependence and general intelligence. Working with a group of ten year-olds of both sexes, they confirmed the results of Woerner and Levine (1950). These studies on young children paved the way to explore further the relation between perceptual field-dependence and general intelligence in adult groups. Imam (1973) found correlation between RFT scores and Standard Progressive Matrices in the expected direction but it fell short of statistical significance.

In the present study the correlations observed between dependency scores and intelligence scores are rather difficult to interpret. In the case of Pakistanis and Somalians the correlations were significantly negative whereas in the case of Palestinians there was virtually no relationship between the two scores. Similarly, the correlations in the case of Iranians and Thais, though negative, were small and insignificant. Albeit, the correlation between RFT scores and Standard Progressive Matrices scores as a whole are significantly negative. The data thus indicate that field-dependency is not related to general intellectual ability in the same manner among various cultural groups. The reason is not clear.

In conclusion, therefore, this experiment shows that there are cultural differences in field-dependence. Whether the differences were due to one or more of the other differences among various cultures are difficult to say. Of course, the same kind of difficulty arises in any cross-cultural experiment. One cannot control or balance out the effects of confounding or contaminating variables when comparing complex societies.

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EFFECT OF IMMEDIATE VS. DELAYED KNOWLEDGE OF RESULTS ON SUBSEQUENT PERFORMANCE IN VERBAL LEARNING

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ABSTRACT

The aim of the present research was to study the effect of immediate vs. delayed knowledge of results on subsequent performance in verbal learning. A homogenous sample of 26 male and 26 female students was selected on the basis of their performance on Otis Quick Scoring Mental Ability Test, with their IQs ranging between 90-100. The test material consisted of a series of simple four digit mathematical (addition) problems used under two treatment conditions, i.e., "Immediate" and "Delayed" knowledge of results. T test was applied to test the significance of difference between the means of two groups. Hypothesis was duly supported, i.e., immediate knowledge of results tended to favour the subsequent performance of all subjects, with no significant difference between the performance of males and females taken separately.

INTRODUCTION

Much useful research over the past seventy years has helped psychologists to determine the conditions that are most conducive to efficient learning. Important among the factors affecting the efficiency of learning is knowledge of results (feedback).

Considerable experimental evidence indicates that a person with knowledge of his progress learns more rapidly and efficiently than an otherwise equally motivated subject of comparable ability who is working "in the dark". In recent years psychologists have tended to replace the term "knowledge of results" with a more broad spectrum expression, "psychological feedback".

Psychological feedback is a process whereby the individual gains information concerning the correctness of his previous responses in order that he can adjust his behaviour to compensate for errors. From amongst the principles of learning summarized by Skinner (1954) and Gilbert (1958), there is one that occupies a unique position:

> "Learning takes place more rapidly if immediate knowledge of results is provided following each response."

If the subject is kept informed of his progress, his learning is faster and better than if he is kept in ignorance of the results throughout the practice period. Knowledge of results seems to serve a double purpose:

i) It serves as "reward" and "punishment" especially in relation to the goals which the subject sets for himself.
ii) It serves to guide the learner's efforts enabling him to evaluate the efficiency of his attack on the problem by the results which he achieves.

Studies in experimental literature conclude that absence of reinforcement affects performance, not learning. It suggests that reinforcement is necessary for performance but not for learning itself. Delay of reinforcement affects both learning and performance.

A study by Hobbs (1947) revealed that:

i) Learning does not occur in the absence of knowledge of results.
ii) Learning is highly correlated with the frequency of responses for which the subject receives knowledge of results.
iii) Learning is correlated with the length of time between the response and awareness of the effects or accuracy of the response.

Angell (1949) discovered that students receiving immediate knowledge of results did significantly better than those who had to wait for results until the following class period.

Bilodeau and Bilodeau (1958) observed that almost all improvement occured only on the trial immediately following that on which there was knowledge of results.

In a study by Greenspoon (1956), lengthening the delay reduced the rate of learning, but even the longest delay showed better results than were obtained when no knowledge of results was given.

Brown (1966) showed the effect of knowledge of results to be significant only when the condition of knowledge of results followed the condition of no knowledge.

In a study by Gibbs and Brown (1956), more work was accomplished when knowledge of results was given than when it was not. This and the results of the above-quoted studies clearly imply that knowledge of results determine both quality as well as quantity of performance in learning.

Performance curves for subjects with and without knowledge of results generally show marked differences, even though the curves may be similar in shape. The improved performance associated with knowledge of results may be attributed to at least three circumstances:

1. Repetition of responses known to be successful.
2. Attempts to correct responses known to be inadequate.
3. Enhanced motivation, in the sense that subjects working with knowledge of results find the task more interesting and try harder to improve their performance.

In the light of the foregoing evidence it was hypothesized that:

i) Immediate knowledge of results facilitates subsequent performance.
ii) Immediate knowledge of results facilities subsequent performance of females more than males.

METHOD

Subjects: The preliminary sample included 150

students, including both males and females, to whom the standard IQ test (Otis Quick Scoring Mental Ability Test, Urdu version) was administered. On the basis of their performance, a homogenous sample with respect to the subjects' intelligence level, was selected with their IQ's ranging between 90 and 100. Thus the final experimental sample included 26 male and 26 female post-graduate students enrolled with six different departments (i.e., sociology, philosophy, history, economics, political science and applied psychology) of the Punjab University.

Apparatus: The test material used in the study consisted of a series of simple four digit mathematical addition problems to be attempted by the subjects in independent, separately timed trials. The difficulty level of the task across trials and for each subject was adequately controlled and no variations whatsoever were to be allowed.

Procedure: All subjects selected to be included in the test sample on the basis of their prior performance on the IQ test were divided into two groups by alloting them a random number. Two treatment conditions were decided to be used in this study:

i) Immediate knowledge of results (I).
ii) Delayed knowledge of results (D).

Male and female subjects were allocated to each treatment condition separately, thus providing four groups:

1. Male immediate (MI).
2. Male delayed (MD).
3. Female immediate (FI).
4. Female delayed (FD).

Each testing session required the subject to work for six isolated but successive trials. Necessary instructions were given to the subject before starting every testing session. The subject was assigned the task of solving a set of 10 addition problems in a given duration, i.e., 2.5 minutes (on average working time), before going on to the next such trial. In this way the subject had to complete all the six trials.

In the "I" condition the subject was clearly informed

of his performance at the end of each trial before he/she was allowed to move over to the next. Whereas in the "D" condition no such information was provided to the subject; the subject simply had to switch over to the next trial after completing the one at hand. However, the inter trial time for both conditions was kept constant by allowing the "D" subject, the same amount of time which was allowed the "I" subject for informing him of his performance. Completion of all trials consumed 20 minutes:

"I" Condition T_1^* T_2 T_3 T_4 T_5 T_6

"D" Condition T_1^{**} T_2 T_3 T_4 T_5 T_6

*Time consumed for each trial 2.5 minutes.

**Inter-trial time 1 minute, both for conditions "I" and "D".

RESULTS

T test was applied to test the significance of difference between means.

Table I(a). Mean and variance of 52 subjects on first trial under "I" and "D" conditions:

	N	Mean	Variance
"I"	26	4.05	1.18
"D"	26	4.3	2.36

$t = .72$ $df = 50$

$p > .05$ and $p > .01$

Table I(b). Mean and variance of 52 subjects on last trial under "I" and "D" conditions:

	N	Mean	Variance
"I"	26	5.8	3.54
"D"	26	3.55	1.39

$t = 5.48$ $df = 50$

$P < .05$ and $p < .01$

The difference in performance on the very first trial as exhibited by "I" and "D" groups is not significant (Table

I(a), Fig.I). This is supported by the t test, which adequately supports the assumption that the two groups entered the task with more or less same or similar preparation. A small improvement in performance is however visible on the third trial of "D" condition, a likely effect of general practice. Following the fourth trial the decline in performance under "D" condition and improvement in "I" condition is in the expected direction to the extent that the learning curves cross each other at about the fourth trial, finally showing a marked difference on the sixth or the last trial where the relative average values reach 3.55 for "D" and 5.8 for "I" conditions respectively (Table I(b), Fig.I).

Figure 1

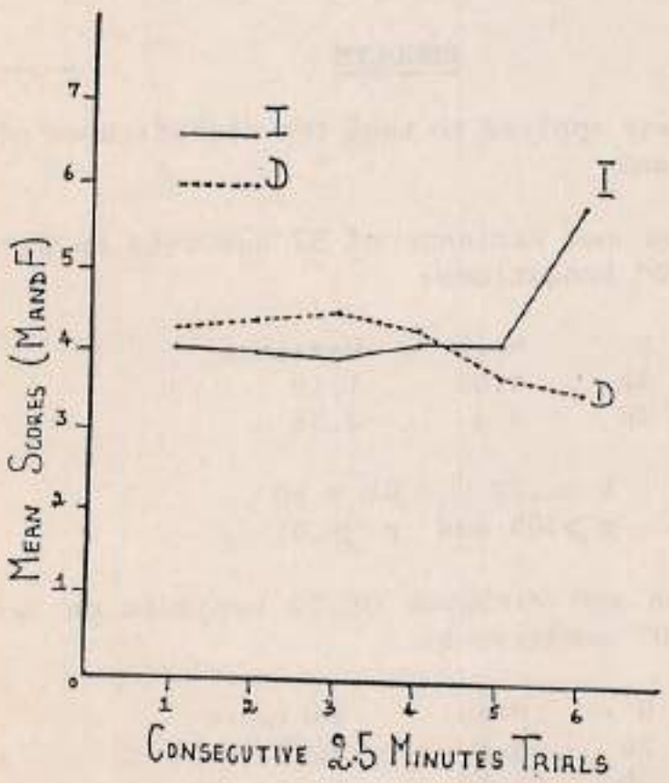

FIG.I. Overall average performance of (Male and Female) subject across trials under conditions "I" and "D"

In order to compare the performance of male and female subjects under either of the two treatment conditions, "I" and "D" the observations have been re-processed as in Table II (a and b).

Table II(a). Mean and variance of male and female subjects on first trial under "I" condition:

	N	Mean	Variance
Male	13	4.3	3.86
Female	13	3.8	1.97

$T = .73$ $df = 24$
$P > .05$ $p > .01$

Table II(b). Mean and variance of male and female subjects on last trial under "I" condition.

	N	Mean	Variance
Male	13	5.4	4.26
Female	13	6.2	2.81

$t = 1.06$ $df = 24$
$p > .05$ $p > .01$

Figure II

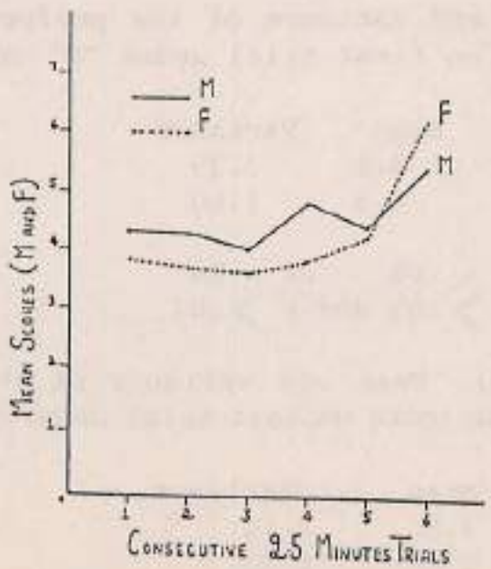

FIG.II. Overall performance of male and female subjects under condition "I" only.

As evident from the figure II, the performance of female subjects appears consistently depressed upto the fourth trial and then suddenly shoots up on the fifth trial and reaches its peak on the sixth. The apparent difference on the very first trial is not significant (Table II(a): $p > .05$); it seems that some female subjects were not as adequately motivated as their counterparts, neverthless the consistency in their (female subjects) performance suggests that this was by no means a random fluctuation. A similar comparison was made between the male and female subjects on their performance on the last trial (Table II(b)). The apparent difference as reflected in figure II is not supported by the t value, i.e., 1.06 ($p > .05$), although the difference appears quite pronounced. A casual comparison between the performance of female subjects on the first trial (3.8) and last trial (6.2) suggests that female subjects tended to benefit relatively more than male subjects (4.3 and 5.4, Table II(a) and (b)) from the immediate knowledge of results.

Similarly the performance of male and female subjects was observed under condition "D".

Table III(a). Mean and variance of the performance of male and female subjects on first trial under "D" condition

	N	Mean	Variance
Male	13	4.1	3.25
Female	13	4.5	1.60

$t = .65$ $df = 24$
$p > .05$ and $p > .01$

Table III(b). Mean and variance of the performance of male and female subjects on last trial under "D" condition:

	N	Mean	Variance
Male	13	3.5	1.10
Female	13	2.6	1.43

$t = 1.96$ $df = 24$
$p > .05$ and $p > .01$

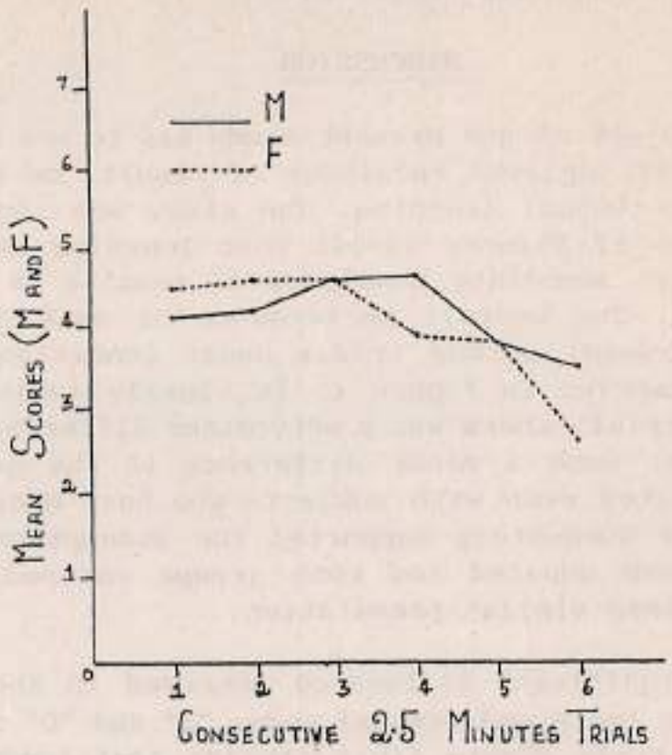

Fig.III Overall performance of male and female subjects under condition "D" only

The visible difference in the performance of male and female subjects in the very first trial is not significant, i.e., 4.1 vs. 4.5 (Table III(a), Fig.III). The consistency in the performance of female subjects in the first three trials showed that it was by no means a random fluctuation. The performance of female subjects suddenly went down on the fourth trial (Fig.III) and the same effect continued to the last trial. The difference in the performance of male and female subjects under condition "D" in the last trial can be seen in figure III), but it is not significant as shown by the t value (Table III(b)). However, on the basis of trial-to-trial comparison of performance of the two groups (male and female) it may be interpreted that delayed knowledge of results in general tended to depress the performance of female

subjects more readily and more seriously than that of their counterparts, i.e., male subjects.

DISCUSSION

The object of the present study was to see the effect of immediate vs. delayed knowledge of results on subsequent performance in verbal learning. The study was conducted on the assumption of Skinner (1954) that learning takes place most rapidly if immediate knowledge of results is given for each response. The overall performance of male and female subjects (averaged) across trials under conditions "I" and "D" can be observed in Figure I. It clearly indicated that in the first trial, there was a very minor difference between the two means. Such a minor difference in the performance could be expected even with subjects who have been randomly selected. This adequately supported the assumption that the two groups were equated and both groups entered the task with more or less similar preparation.

The significant difference observed in the means of the two groups (male and female) under "I" and "D" conditions in the last trials (Table I(b)) implies that both male and female subjects tended to benefit from the "I" condition and their performance conversely tended to decline under the "D" condition. Condition "D" may have caused anxiety for the subjects and they lost their interest in the task while condition "I" seems to have served as an anxiety reducer on the other hand. The value of knowledge of results was not confined to information received at the end of each trial only, it also worked as a morale booster and reinforcer by telling them if they had hit or missed the target.

The comparison of the performance of male and female subjects under treatment condition "I" indicated that both in the first and last trials the difference was insignificant (Table II(a) and II(b)) respectively. However, the performance curve (Fig.II) and mean score of both groups indicated that female subjects tended to benefit more from the "I" condition than male subjects.

A similar comparison was drawn between male and female

subjects under "D" condition, and it was demonstrated that the difference between the two groups was insignificant throughout the testing session (Fig.III). The "D" condition tended to more or less equally depress the performance of both groups as if the sex difference did not affect their motivational level. The very small difference between the two groups could be attributed to random fluctuations due to individual differences.

Thus, the findings of the present study, which concluded that learning in the group receiving delayed knowledge of results occurred less rapidly than in the group receiving immediate knowledge of results, support the studies of Angell (1949), Gibbs and Brown (1956) and is in line with the Skinnerian (1954) principles of learning.

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A STUDY OF THE RELATIONSHIP OF MANIFEST ANXIETY WITH SCHOOL ACHIEVEMENT OF 10TH GRADE STUDENTS

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ABSTRACT

This study investigated the nature of relationships between anxiety and school achievement of 300 Pakistani adolescents (male and female). An anxiety scale was administered under non stress conditions about 3 months before the final examination. The achievement scores were the percentage scores obtained by the same subjects in their final examination held by the Karachi Board. The Pearson Product Coefficient of Correlation was computed for the whole group, as well as for the males and females separately. The conclusions were: (a) the relationship between these 2 variables is curvilinear, thus supporting the inverted - U hypothesis and (b) this relationship holds for both males and females.

INTRODUCTION

The American Psychiatric Association's Diagnostic and Statistical Manual-III (1980) defines anxiety as "a state of apprehension, tension or uneasiness that stems from the anticipation of danger, which may be internal or external". Anxiety occurs in all degrees of intensity, from the common low grade variety to a debilitating state in which a person experiences anguish and panic.

The central function of anxiety is to act as a danger signal to the ego, so that when the signal appears in consciousness the ego may institute measures to deal with the danger. Although anxiety is painful and one might wish that it could be abolished, it serves a very necessary function by alerting a person to the presence of external

and internal dangers. Being alerted, he can do something to ward off or avoid the danger. On the other hand, if the danger cannot be averted, anxiety may pile up and finally overwhelm the person.

The role of anxiety in learning has been studied rather extensively and shows both positive and negative effects. Anxiety is the basis for much creative effort and often becomes a stimulus to progress. People who are free of anxiety are often unlikely to be motivated to learn or to take any action regarding the problems they encounter. They may become drifters or floaters in school. But when the level of anxiety reaches a point where it becomes distressing, learning is definitely impeded. The individual becomes so concerned with relieving his anxiety that he cannot attend to the learning task at hand. His perceptions are narrowed, and he tends to focus upon himself and his own feelings rather than on what is going on around him. A number of psychologists have been concerned with the relationship between anxiety and performance.

Studies by Levitt, 1962; Sarason, Mandler and Craighill, 1962; Scheier 1962, on the relationship of anxiety to academic achievement suggest that anxiety level is inversely related to academic performance. This relationship means that a student with higher anxiety is expected to do less well in school work than a student with lower anxiety. Levitt (1962) presents data supporting this inverse relationship between anxiety and academic success among student nurses, based on a significant difference between the covert - overt ratios of a group of failing sophomore student nurses and a group of successful sophomore student nurses even though the difference between the mean overall anxiety scores of these two samples was not significantly different.

Sassenrath (1967), Stevenson and Odem (1965), and Endler (1964) reported a significant negative correlation between test anxiety and achievement.

Sinha (1966) also reported a significant negative correlation between manifest anxiety and grade point averages.

The results for one of the tests (Sarason, Mandler

and Craighill, 1962) which required the subjects to learn a code for substituting digits in place of geometrical symbols, were that: (1) low anxious subjects generally do better than high-anxious subjects, and (2) pressure to finish results in improved scores for low anxious subjects but not for high anxious subjects.

Tomasini (1973), studied the effect of peer-induced anxiety on the examinees' ability to solve a set of anagrams. Experimental and control subjects were both given 15 minutes for the task. However, control subjects worked alone while experimental subjects worked at the task with another "examinee" in the room who left after 7 minutes, apparently having completed the task. Tomasini found that low anxious individuals (ASQ sten scores of 1 through 3) performed better in the experimental condition. Performances were not substantially different for high - anxious individuals (ASQ sten scores of 8 through 10).

Numerous studies have been the subject of several reviews (e.g. Sarason, 1960; Spence, 1964). Some of the major findings are:

1. High anxious subjects learn a simple conditioned response (e.g. eye blink to an air puff) more rapidly than low anxious subjects.
2. Results for conditioned discrimination are somewhat contradictory, some studies having found better discrimination among the more anxious subjects, others no difference.
3. With more complex tasks, high anxious subjects do less well than low anxious subjects.

Studies also exist in the literature that suggest the anxiety-performance relationship varies as a function of a subject's aptitude or ability level. Spielberger and Katzenmayer (1959) presented a study to examine the relationship between MAS (Manifest Anxiety Scale) scores and GPAs and to determine whether this relationship varied as a function of the intellectual level of the student (as reflected in their ACE scores). The MAS was administered to all students in the introductory psychology course at Duke University for six consecutive semesters, and GPAs were obtained for that particular semester during which a student had

taken the MAS. MAS scores, ACE scores, and GPAs were available for 640 men. The intertest Pearson r's were MAS - GPA, -.14; MAS - ACE,-.11; ACE - GPA, .29 (all significant at .01 level). Even when intelligence was not taken into account there was a small inverse relationship between MAS scores and grades in the study. In further analyzing whether this relationship was influenced by the intellectual ability of the subjects, the authors found that grades varied inversely with anxiety level for the average aptitude subjects. College work, appeared to be too difficult for low aptitude students whose poor grades were unrelated to their MAS scores. High aptitude students tended to obtain good grades regardless of their anxiety level.

From another study by Spielberger (1962) it appears that the effect of anxiety on learning depends on the adolescents' level of ability. His findings suggest that students of average ability who scored high on an anxiety scale more often had lower college grades and more often left college as a result of academic failure. However, it appeared that students who scored high on a scholastic aptitude test, and also showed a high anxiety level, were able to achieve at a high level in college in spite of anxiety.

The amount of anxiety adolescents experience when trying to learn something is also influenced by the complexity and difficulty of the material they are expected to master. O'Neil et al (1969) measured the anxiety of college students who were then required to learn difficult material in one experimental situation and easy material in another situation. The students gave evidence of the greatest anxiety when they were working on the difficult task; the next highest level of anxiety appeared prior to the study, and the lowest amount of anxiety occured during an easy task.

Several investigators have found a curvilinear relationship between anxiety (and other drives) and performance. Courts (1942), Malmo (1957), Duffy (1962), and Wood and Hokanson (1965), have cited data to suggest the inverted U function as describing the relationship between motivation (drive level and performance, and this non-monotonic function has been obtained in a variety of situations.

In an effort to determine whether IPAT anxiety level

does permit prediction of success or failure at nursing school this anxiety scale was included in a study (Fein, 1963) of the causes of drop-outs from nursing school. A statistically significant curvilinear relationship exists between IPAT anxiety scores and midterm marks in theory and clinical courses for a sample of 53 freshman nursing students (18 year mean small town, middle class, high average aptitude). This means that very high and very low IPAT anxiety scores may be expected to operate against success at nursing school while moderate anxiety scores predict success at nursing school.

Nelson and Langer (1965) found similar results to that of Fein (1963). They found the same thing in the coachrated performance of varsity football players. Men with intermediate levels of anxiety consistently played better than those with extremely high or extremely low levels.

Sharma (1970), investigated the nature of relationships between manifest anxiety and school achievement of 700 Indian adolescents (male and female). An anxiety scale was administered under nonstress conditions about four months before the final examination. The relationship between achievement scores obtained by the same subjects in a similar examination held a year earlier by the same university and anxiety scores was investigated. The eta coefficients for the whole group and for the boys were significant beyond the .01 level, while the eta coefficient for the girls was significant at the .05 level. The conclusions were (a) the relationship between these two variables is curvilinear - thus supporting the inverted - U hypothesis and (b) this relationship holds for both males and females.

The literature in this area is not entirely in support of the anxiety performance relationship described in the studies above. Several studies point to the absence of a significant relationship between the two variables. Davids and Eriksen (1955), Sarason (1956), and Matarazzo etal (1954), all using Manifest Anxiety (MA) Scale scores, could not find any significant relationship between manifest anxiety and college gradepoint averages.

Matarazzo et al. and Klug and Bendix as reported

by Spielberger and Katzenmayer (1959) found nonsignificant MAS-GPA correlations of -.08 and .01, respectively.

Bilbo (1972) found an overall correlation of .44 between anxiety scores and success in a group of 31 female student teachers.

Regarding the interrelationships among anxiety, stress, and performance, Doles (1974) also found that high school students given SCAT tests under noisy conditions designed to be stressful showed no more anxiety than those tested under nonstressful conditions and performed as well on the tests.

Although a review of the literature on the anxiety - performance (or achievement) relationship has predominently more studies suggesting the existence of either a curvilinear relationship or a significantly negative correlation, there are also studies in which significant relationships were not found. The present study is an attempt to investigate whether or not this relationship exists and what its nature is in Pakistani school students.

METHOD

Sample:

300 students (150 boys and 150 girls) served as subjects in this study. Their ages ranged from 14 years to 16 years. These subjects who were randomly selected from 4 higher secondary schools were enrolled in the 10th grade. These schools are situated in similar geographical locations and are under the jurisdiction of Karachi Board, following identical syllabi and regulations. The medium of instruction in all the schools was English.

Procedure:

The IPAT - Anxiety scale was administered to the subjects in groups of 10 to 15 about three months before their final examination. At the time of administration of the test the subjects were assured that the information would be kept confidential and would be used for research purposes only. The total anxiety score was the sum of weighted responses on the 40 items of the scale.

Achievement scores of all the subjects included the overall percentages obtained by the same subjects in the final examination, held by the Karachi Board. Earlier, the subjects' percentage scores in the preliminary examinations held in their respective schools were obtained and the two achievement scores were correlated using the Pearson Product Moment method. The Pearson 'r' for the achievement scores obtained by the subjects in these two uniformly conducted annual examinations was observed to be .79(N=300) which established the constancy of achievement scores.

TABLE I

MEANS, STANDARD DEVIATIONS, STANDARD ERROR OF MEASUREMENTS, STANDARD ERRORS OF DIFFERENCE & CORRELATIONS OF ANXIETY AND ACHIEVEMENT SCORES

Sample Statistics	Whole N=300		Males N=150		Females N=150	
	Anxiety	Achievement	Anxiety	Achievement	Anxiety	Achievement
Mean	38.24	62.33	37.18	60.30	39.30	64.37
Standard Deviation	9.19	11.53	8.63	15.52	9.99	9.71
S.E.M.	0.53	0.66	0.70	1.26	0.81	0.79
S.E.D.	.84		1.46		1.12	
r	+.06		-0.01		+0.10	

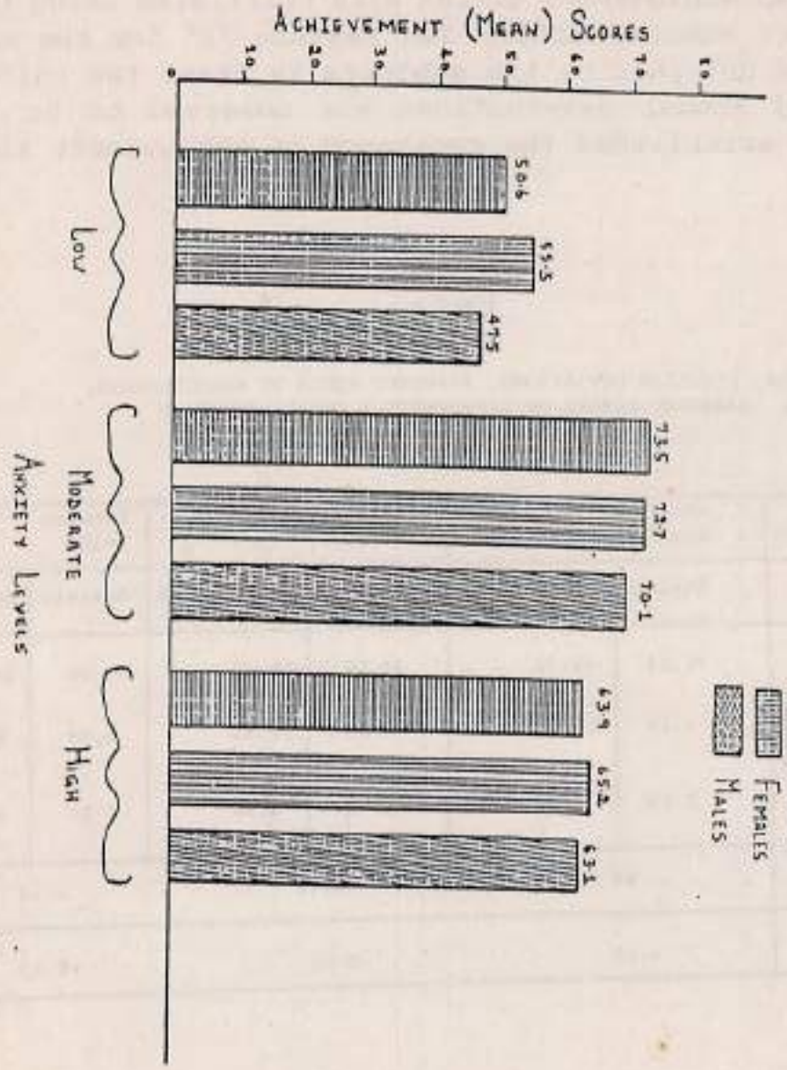

Figure 1: Anxiety Levels And School Achievement

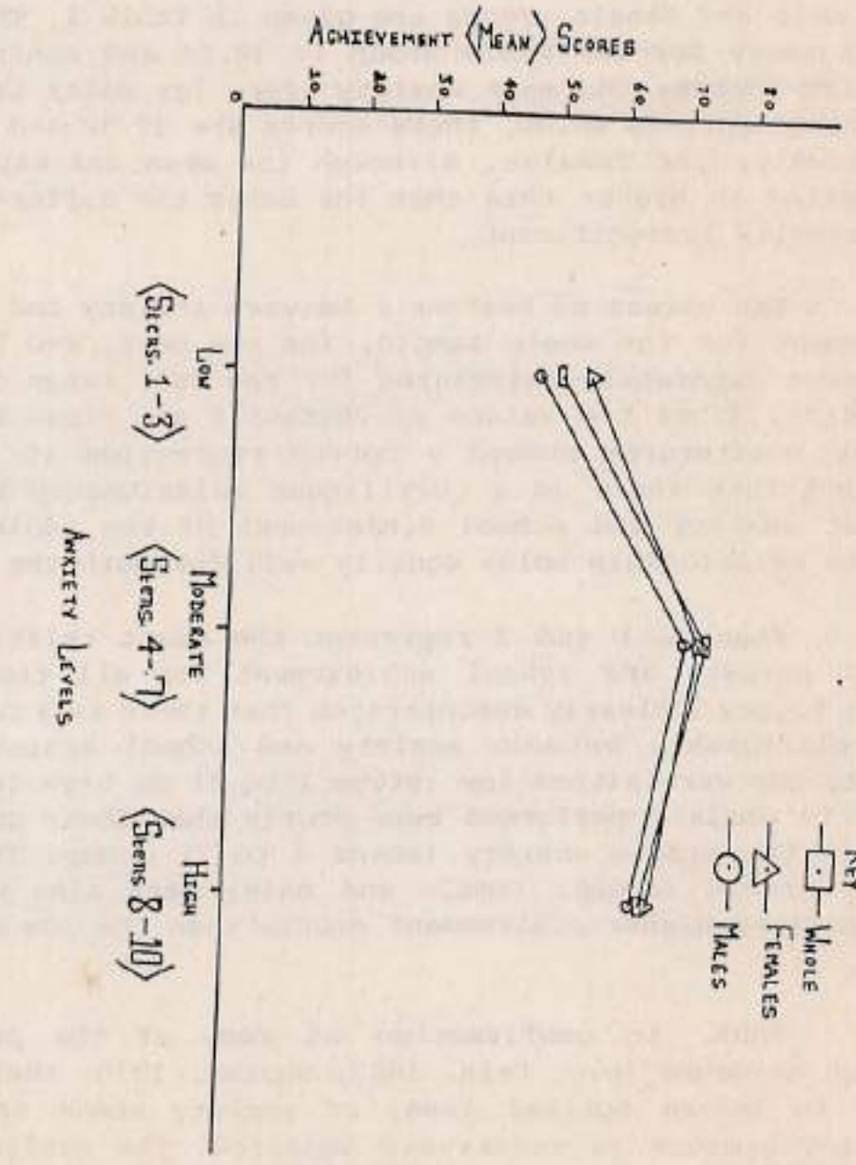

Figure 2: Anxiety Levels And School Achievement

RESULTS AND DISCUSSION

The means, standard deviations, standard errors of mean, standard errors of difference and coefficients of correlation of the anxiety and achievement scores of the whole, male and female groups are given in Table 1. The mean anxiety score for the whole group is 38.24 and achievement is 62.33. Whereas the mean anxiety score for males is 37.18 and ahcievement is 60.30, these scores are 39.30 and 64.37, respectively, for females. Although the mean anxiety score for females is higher than that for males the difference is statistically insignificant.

The values of Pearson r between anxiety and school achievement for the whole sample, for the boys, and for the girls were separately calculated for the full range of both the scores. Since the values of Pearson r are close to zero and the scattergram showed a curved regression it can be concluded that there is a curvilinear relationship between manifest anxiety and school achievement of the adolescents and this relationship holds equally well for both the sexes.

Figures 1 and 2 represent the exact relationship between anxiety and school achievement for all the three groups. Figure 2 clearly demonstrates that there is a curvilinear relationship between anxiety and school achievement. Subjects who were either low (stens 1 to 3) or high (stens 8 to 10) in anxiety performed more poorly than their counterparts in the middle anxiety (stens 4 to 7) group. The high anxiety groups (whole, female and male) were also seen to have obtained higher achievement scores than the low anxiety groups.

Thus, in confirmation of some of the previous research evidence (e.g. Fein, 1963; Sharma, 1970) there does appear to be an optimal level of anxiety above or below which performance is relatively impaired. The confirmation of the inverted-U hypothesis suggests that anxiety increases drive level and will at first lead to an increased level of performance and then, as drive level continues to rise, to a

decrease in performance.

Studies that did not find a relationship between anxiety and achievement such as Sarason and Mandler's (1952) that found no relationship between their anxiety measure and actual grades for the previous year's work probably suffer from the problems of small and less heterogenous sample sizes (Sharma, 1970). The sample used in the present study, however, contained a better representative proportion of the population and was quite heterogenous, hence the results can be more trustworthy. Nevertheless, certain unique factors, such as the nature of the student body, the educational and evaluation system, and cultural differences, cannot be ruled out in the impact they may have had on the outcome of the present study.

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Editorial

It gives me great pleasure to introduce the Institute of Clinical Psychology, University of Karachi to our readers. The Institute came into existence due to the personal interest and directives of General Muhammad Zia-ul-Haque, President of the Islamic Republic of Pakistan in 1983.

The Institute is a comprehensive integrated facility for the treatment of psychological disorders. It will also serve as an ideal setting within which to train Clinical Psychologists and to study the causes and treatment of mental disorders. This Institute which is a professional-cum-research institution mainly aims at the training of clinicians and researchers as well as the development of Clinical Psychology as a profession in Pakistan.

The prerequisite qualification for admission into the Post Magistral Diploma programme offered by the Institute is a Master's degree in Psychology from a recognized university. This is a twelve month programme of studies and training which involves both coursework and internship. Upon completion of the Post Magistral Diploma in Clinical Psychology students may apply for Ph.D. candidacy in Clinical Psychology. This requires taking further advanced courses, internship of another two years and successful completion of a dissertation.

In the first two years of the Institute's inception we were fortunate to have an American Clinical Psychologist who was a Fulbright scholar and in our fourth year we had a Dutch Clinical Psychologist both of whom contributed significantly in building a sound base for the academic achievements of the Institute. We were also fortunate in acquiring the services of another American Clinical Psychologist for two summer semesters during the third and fourth years through the courtesy of the U.S.I.S. The involvement of these foreign experts has undoubtedly helped in maintaining standards of research and teaching in the Institute which are comparable to and are recognised by the renowned international institutions of Clinical Psychology.

In the beginning of this year I, in my capacity as the Director of the Institute of Clinical Psychology, went to U.S.A. in order to explore the possibility of establishing an academic linkage with American institutions and universities. This visit was a successful one and many institutions and universities have shown interest in the academic linkage which will initially mean that some of their faculty members will come to Pakistan and teach at the Institute for a duration of 6 to 12 months. This initial continued help in teaching and research at the Institute of Clinical Psychology will be greatly valued because in a few years our own Ph.D. candidates will be able to take over teaching-cum-training responsibilities. We will, therefore, appreciate qualified American Clinical Psychologists contacting us and also applying for Fulbright fellowships in order to teach at the Institute.

In the end it is my proud privilege to inform the readers that from now onwards the Pakistan Journal of Psychology will be published under the auspices of the Institute of Clinical Psychology, University of Karachi.

Farrukh Z. Ahmad

(Prof. Dr. Miss Farrukh Z. Ahmad)
Editor.

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THE ROLE OF INCENTIVES IN INDUSTRY

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It is an established fact that all events in this universe are governed by certain systematic laws - that there is a definite and predictable relationship between antecedent conditions and consequent events and that we are capable of unveiling causal relationships with the aid of appropriate techniques of investigation.

We must explain the 'whys' of behaviour. We are well aware that any event may have not one but a number of causative factors. To locate the one that causes the individual to take a certain action rather than another is a difficult proposition. So, when we set out to explain the 'whys' of behaviour we should direct our attention to its multimotivational determinants.

Of the various areas of Industrial Psychology the most important, but the least understood, is the motivation of workers. Needless to emphasize, motivation is a state of unsatisfied need and a condition of constructive tension on the part of the worker. Being a very complex phenomenon it quite often puts management into a tight corner in understanding the genesis of a worker's action. The motives for instance, behind a man's quitting his present job may be economic gain, more gracious family living, a desire to please his wife, etc.

Men work in the fields of business and industry for the sake of achieving their cherished goals. They are not only required to work but try to work more effectively keeping various links in the chain of cooperation together. Why does a man work? What energises him and what conditions guide him towards more constructive and productive work? These are some of the intricate problems which require satisfactory solutions. According to one belief, physical labour is a sort of curse which has been imposed on man as a punishment for his sins. According to moralists, man is one of the essential components of society and hence he is compelled by his inner urge to contribute his share to the betterment of society as a whole. The realist, on the other hand, holds the view that a man works not for any other reason than to keep himself and his family members alive or to accumulate sufficient money to enable him to do the things he really likes. In other words, the quantity and quality of work and the satisfaction derived from such work will solely depend upon the attractiveness and charm of the financial incentive.

At this point I deem it necessary to throw some light on the very term 'incentive'. Incentive has been derived from the Latin term 'incentivus' (that which incites to action). In common parlance it is an objective goal which is capable of satisfying our needs, drives or desires. There is no denying the truth that only some of our needs are innate and universal, while the majority of them are learnt and acquired in the process of social interaction and from our day-to-day experience.

There are two issues involved in the problems of incentives in industry. The first one concerns the removal of friction and the causes of conflict, discontent and dissatisfaction while the other relates to the provision of effective and powerful inducements. If we view incentives in this way then it becomes a very intricate and immensely complicated problem which calls for a broad and balanced treatment.

The role of money in the satisfaction of our needs is quite obvious and can never be questioned. But the use of money to motivate men to do more and better work is a difficult problem. It is the most commonly used incentive in industry to get people to work and to stimulate them to work more harder. But the grim tragedy is that industry has tended to over-simplify the worker's motives by attaching too much importance to financial incentives. Management generally has formed a wrong notion that what workers want most is money.

Studies done by Mitchell (1936) and Wyatt (1934) in England showed very clearly that piece rate incentives increased production considerably more than payment either on a time rate system or bonus basis. Kangan (1951) reported similar favourable results from the introduction of incentives in eight Australian companies. In this way various systems of wage payment were adopted to increase the amount of production and thereby lower the unit cost of production and they definitely served their purpose. For example, when a study of the operation of more than twenty super-incentive wage plans was made the following results were found (Viteles, 1932):

(i) Production levels had generally increased from 1 per cent to 18 per cent.

(ii) Employees' average earning had generally increased from 1 per cent to 30 per cent.

(iii) Total cost per piece had generally decreased from 1 per cent to 11 percent.

But inspite of introducing these techniques and adopting similar other measures for goading and stimulating workers to increase production there is ample proof that industries have failed to reach the desired target. The general attitude of the management that the workers want more and more money reflects the carrot and stick hypothesis which regards money as the main positive incentive and fear of unemployment as the main negative one. Man needs food, shelter, home and a family. Getting these desires fulfilled means a lot of money. People are, therefore according to this position, on the whole willing to work in order to earn money which in turn would enable them to satisfy their needs.

Although, of late, it is being increasingly realized that some people may like to work because of their varied interests in other social and welfare activities, the basic assumptions remain almost unchanged. We have not yet recovered from the early delusions and harp on the same tune that most people do not like to work willingly and that money is the powerful incentive. To think of work as a curse imposed on man as a punishment for his sins is ridiculous. In fact work is an essential part of and is completely linked with a man's life. It is work alone which gives him a certain position and binds him to society. Usually work is liked by men and women alike but when they are seen loafing on the job it means that there is something wrong in the psychological and social conditions of the work environment and not in the worker. Work is basically and essentially a social activity. And there are sufficient instances to support

this proposition conclusively. Brown (1954) has reported the case of three men working in a group of London factories who had, on different occasions, won a huge amount of money from football pools quite sufficient for the rest of their lives but returned after a short period to their same ordinary work. In another firm where women workers retired at the age of fifty-five on a sizable pension, most of the workers were found waiting each evening at the factory gate for their friends. They not only attended social functions held by the firm but also wished to take up part time jobs if and when available. When these women were interviewed they did not give even the slightest impression that they were primarily interested in money. They were, rather, interested in the factory because it served as a social centre for them.

Man is a social animal. His behaviour is largely guided by social forces that arise from human interrelationships. His performance is governed in large part by his needs to be accepted and belonging to a particular group. Those who treat money as the sole motive for work live in a fool's pradise and they are, I am sure, incapable of understanding either industry or the industrial worker. Primarily, work should be regarded as a social activity. It has two important functions. The first one is to produce the goods as required by society while the second relates to binding the individual into the 'pattern of interrelationships' for which society has come into existence.

Man is also a status seeker. Status is of utmost importance for the healthy growth and well being of the individual. (See Brown, 1954). McKenzie maintains that neurotic troubles are linked with problems centering around the need for social status. In an investigation by Davis (See Brown, 1954) it was found that out of seventy cases of neurosis all save four showed clear evidence of status involvements.

It is a very sad reflection of one's views if one counts economic needs as the only motivating factor in a worker's life because it is evident in our day-to-day experience that many people are working day and night even though they have no need for material gains. The reason behind this is not far to seek. Work is the only source through which they get social reward such as respect and admiration from their fellowmen.

However, work also paves the way for ego satisfaction and meets the needs for fellowship and sociability. Quite often it so happens that the workers who are given new jobs with higher pay do not like to go for their new assignments and stick to their old jobs even with lower wages. If dislike of work and love of money is universal this sort of behaviour fails to make sense. Lord Beveridge, as reported by Brown (1954) said on one occasion that 'the greatest evil of unemployment is that it makes men seem useless, not wanted, without a country'. There are many middle aged men who prefer to take up any kind of job just to get back their recognised status. Work is liked because it becomes an avenue for the worker to get comradeship, promotion, and social standing. It is of course true that there are men who appear to be obsessed with minting money as much as possible but they form a very meagre part of the total working population.

Effective and responsible leadership serves as a good incentive in the life of every worker. Many bosses have formed the habit of insisting to their employees: 'Hurry up', 'do it quicker', 'you seem too lazy', 'look smart', and so on. They never care to think that these words may do more harm than good and that they may prove even more dangerous than the 'cracks of a whip'. In some cases they may produce the opposite

effect to the one desired. We are all egocentric. We want to hear frequently that we are the best, most sensible and most talented. These are important for the healthy growth of our self-esteem. Whenever the boss expresses satisfaction with their work they not only feel at peace and reinvigorated but also develop a sense of goodwill towards their chief and consequently their performance improves satisfactorily.

Casson (1931), an efficiency expert, has observed, "whilst in the sports arena cups and medals are awarded for good performance, in industry only blame is awarded. Continual nagging is one of the chief causes of lack of success. Every chief should recognise that his employees are, as it were, raw material and have to be moulded so that they become efficient".

There is a proverb that 'flies are caught not with vinegar but with honey', and that 'animal trainers use sugar more than whips'. So it is incumbent on the person in authority to distribute praise judiciously. Schwab of the Bethlehem Steel Company, Chicago (see Moore, 1942), is quoted as saying: "There is nothing that so kills the ambition of a man as criticism from his supervisors. I am lavish in my praise but sparing in may criticism. If a man does a good job I do not hesitate to tell him; if he does a poor one, I prefer to remain silent. When I see good in other people's work, I do not hesitate to mention it. A little bit of praise affects the sweating paddler as it does the President of the United States."

In one of London's slaughter houses (see Brown, 1954) where pigs were killed, six girls were found busy in sorting and washing the internal organs to be finally used for various purposes. The room was not only cold and damp but it was also dimly lit by artificial light. Moreover, its floor was so covered with blood and water that it smelt quite obnoxious and presented a horrible look to the casual visitor. In such a dark, dimly lit and dismal working environment these girls were working cheerfully throughout the day. This was extremely shocking to a new medical officer and therefore he recommended that the girls should be replaced by men and transferred to other departments. It was not feasible to bring an immediate improvement in conditions owing to a few building restrictions. But the well-meant recommendation was soon withdrawn because of strong protest. The unexpected and untimely protest left much to think about and wonder. In fact the girls had laid the foundation of a happy working group and were all on good and friendly terms with each other. They had faith that they were doing a skilled job. Moreover, they were under the control of a good supervisor who gave due recognition to their skill.

Knowledge of results is another way of goading the worker to exert more effort and thereby give a better performance. The maxim 'beat your own record' has been widely used as a tool in the field of education and industry. Repeated experiments in the laboratory have proved its value as an incentive. The amount of work and rate of work done under conditions of knowledge exceed those done under conditions of ignorance of result.

Need for expression is another incentive. The union is equally concerned with getting more money for its members as it is interested in the satisfaction of the employees' 'need for self-expression'. The urge for a means of self-expression is usually present in every individual in an industrial plant and consciously or unconsciously (usually the latter) each individual constantly seeks some way to express himself. It is really the basic incentive. If it is not more important, it is definitely as important as the desire for economic betterment and personal security.

As regards incentives in general, there are certain divergences of opinion and such variations depend on sex, age, class and particular problems of the individual firm. Blum and Russ (1942) attempted to examine the relative importance of five incentives - advancement, hours of work, salary, security and supervisory relationship. Advancement and security were found to be the most important incentives while hours of work the least. Salary was ranked third by men and fourth by women. Women tended to attach greater importance to good working conditions than men and men gave more importance to opportunities for promotion than women. Supervisory relationship was rated fourth by men and third by women. Married men considered security more important than did bachelors. Married women showed more interest in working fewer hours than did single women. Advancement lost its own importance with age for both sexes. Security became more important with age but advancement and security were considered more important than salary.

Another study was done by Wyatt, Langdon and Stock (1937) and surprisingly enough the result was the same as far as the position of pay was concerned. In a British factory women workers numbering 325 rated steady work first, good working conditions second and high pay sixth. Houser (see Brown 1954) also noted in the case of a trading organisation that the employees ranked good pay twenty first on a list of 28 items.

Besides these, many more studies have been done on incentives by various research workers. In this connection the studies of Bose (1951), Ganguli (1954), Das (1960), Bhatt (1962), Lahiri (1965), Lahiri and Chaudhri (1966), Kapoor (1967), Desai (1968), Vaid (1968), Mukerjee (1968), Pestonjee (1969), Suri (1970), Aggarwal (1972), Singhal and Upadhaya (1972), Paliwal and Paliwal (1974), Dolke (1974), Kanungo, Misra and Dayal (1975), Gupta and Kumar (1977), Gupta (1980), Anantharaman (1982) and Ismail and Jaleel (1985) may conveniently be mentioned.

In short, the following facts may be deduced from the general discussion of incentives:-

(1) The importance of incentives as a spur to increase production has been authentically proved and universally accepted.

(2) It is impossible to locate the one ideal incentive. It recognises not only individual difference but also takes note of culture variation.

(3) The well-known law of diminishing returns works well in all cases of material incentives. Taylor cites a case of workers working in mines who deliberately and frequently kept themselves absent from work as soon as they started getting wages at a higher rate. The secret of such uncalled for behaviour lay in the fact that a point had been reached beyond which the need for more money had become secondary to the need for more leisure.

(4) What money fails to achieve, a few psychological rewards achieve miraculously.

(5) Short term goals prevail over long term ones.

(6) Without any reservation, all industrial psychologists are on the same line in their thinking that money is of much less significance than what has been supposed till

now. Workers are concerned too much about their pay only when they are economically pinched. In the absence of very poor wages and periods of inflation they prefer ego satisfactions such as prestige, power,social recognition, security and treatment as an individual.

(7) Salary is not the most important factor in a job, nor does it operate as the all powerful incentive.

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EFFECTS OF PHYSICAL ATTRACTIVIENESS AND SEX ON LENGTH OF IMPRISONMENT: A STUDY OF SEX DIFFERENCES

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ABSTRACT

In an attempt to determine what length of imprisonment men and women like to suggest for physically attractive male and female heroin sellers and for physically unattractive male and female heroin sellers also, it was found that (i) attractiveness of a sex received favor from the opposite sex, (ii) women, either attractive or unattractive, had effect on men, (iii) women suggested longer imprisonment for a heroin seller, regardless of both the sex and the physical attractiveness of the heroin seller, and (iv) unattractiveness is a disadvantage in all situations.

Man's approach to man is not haphazard. It is intentional. It is selective. It is determined by factors like proximity (Festinger, Schachter & Back, 1950; Priest & Sawyer, 1967; Whyte, 1956); familarity (Saegert, Swap & Zajonc, 1973; Zajonc, 1968); attitudinal and value similarity (Bleda, 1974); Byrne, 1971; Byrne & Wong, 1962; Grifitt & Veitch, 1974; Kerckhoff & Davis, 1962; Moss & Andrasik, 1973; Newcomb, 1961; Rokeach, 1968; Steine, Hardyck & Smith, 1965); economic similarity (Byrne, Clore & Worchel, 1966); work efficiency similarity (Senn, 1971); race and belief similarity (Kandel, 1978; Triandis & Davis 1965); language similarity (Khalique, 1983) and physical attractiveness (Berscheid, Dion, Walster & Walster, 1971; Berscheid & Walster, 1974a; Murstein, 1972; Murstein & Christy, 1976; Price & Vandenberg, 1979; Silverman, 1971).

Since one of the independent variables used in the present study is physical attractiveness, we will go into its effect, sex differences in effect, limitations of effect, and theory of effect in a little detail.

Effect of Physical Attractiveness

It is a human weakness that we tend to be attracted toward physically attractive people. We feel attracted to the extent that we hold that physically attractive people have good personality characteristics, although all that glitters is not gold. Dion, Berscheid, & Walster (1972) concluded that people hold that what is beautiful is good. People having good characteristics are also perceived as being more beautiful i.e., what is good is beautiful (Gross & Crofton, 1977); physically attractive people are seen as having more social skills (Goldman & Lewis, 1977); they are considered as more persuasive (Mills & Aronson, 1965); opinions held by attractive people are believed to have more impact (Sigall & Aronson, 1969); a beautiful woman is thought to have done a job better i.e. beauty is talent (Landy & Sigall, 1974); attractive persons are

highly recommended for hiring on a job interview (Dipboye, Arvey, & Terpstra, 1977; Dipboye, Fromkin, & Wiback, 1975); attractive counselors are considered effective counselors (Cash, Begley, McCown & Weise, 1975); pretty faces are recognized better (Cross, Cross & Daly, 1971); the more attractive a person's face the less threatening is the individual believed to be (Jones & Hirschberg, 1975); a physically attractive person is less likely to be judged maladjusted or disturbed (Cash, Kehr, Polyson, & Freeman, 1977); beautiful women are not often convicted (Monahan, 1941); and lenient punishment is given to an attractive face (Dion, 1971; Landy & Aronson, 1969; Rich, 1975). Thus, ode to a pretty face (and body) (Severy, Brigham & Schienker, 1976).

Sex Differences

There are sex differences in response to a pretty face. Attractiveness has effect on the opposite sex (Anderson & Nida, 1978; Dion & Stein, 1978). Men feel more attracted toward a beautiful woman than what women feel toward a handsome man (Berscheid, Dion, Walster, & Walster, 1971; Krebs & Adinolfi, 1975). Women are now becoming men in selecting handsome men as their sexual partners (Hopkins, 1977).

Limitations of Effect

It is advantageous to be good-looking (Berscheid & Walster, 1974b), but not all the time. A rose is not a rose all the time; so a pretty face is not a pretty face all the time. According to Sigall & Ostrove (1975) the effect of the magnetic attraction of one's face varies with the nature of the crime. Beautiful swindler was suggested a stiffer punishment than the swindler who was not beautiful. Beautiful burglar was suggested a lesser punishment than the burglar who was not beautiful. They mean to say that beauty is helpful as long as it does not appear that one is trying to get away with something extra because of it. Physical attractiveness sometimes loses its effect when the subjects actually interact with the stimulus person face-to-face (Kleck & Rubenstein, 1975), i.e. reality is the test of physical attraction.

Theory of Effect

There are four major theories of human interactions. They are Gestalt theory, reinforcement theory, psychoanalytic theory and role theory. A question arises: which theory or theories explain this aspect of behavior. Although the first two theories explain this aspect of behavior, the reinforcement theory does better, particularly Thorndike's (1898) law of effect. We enjoy looking at, talking to , and sitting beside a physically attractive person, particularly of opposite sex. That is, a close contact with him/her leaves a happy impression on us. We want to retain the happy impression, i.e. we want to look at, talk to and sit beside him/ her again and again, to the extent that we want to marry, if possible. It would not be inappropriate to hold that we want to be close with an unattractive person also, for reasons we have.

Social exchange theory and equity theory are all derivatives of reinforcement theory and rest upon the basic truth that "both humans and animals seek satisfaction and shun dissatisfaction" (Khalique, 1984).

METHOD

Selection of faces

A mixed group of 10 university boys and 10 girls was individually given randomly arranged photos of 5 attractive and 5 unattractive female faces and 5 attractive and 5 unattractive male faces of university age group with a request to sort out the most attractive male and female face as well as the most unattractive male and female face. In this way, the selection of photos was made.

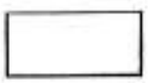
Subjects

188 university boys and 188 girls served as subjects.

Procedure

Each sex was randomly exposed to the photos of attractive and unattractive faces of alleged male and female heroin sellers with the following typed instructions attached to the photo:

> Look at the photo. According to a police report, he/she is a heroin seller. What length of imprisonment would you like to suggest for him/her?
> Please write in the box.



Since university boys and girls were all grown ups and they belonged to 20 to 25 years of age range, it will be appropriate to describe them as men and women.

RESULTS AND DISCUSSION

Responses to the above question were analyzed by a 2 (sex of subjects) X 2 (physical attractiveness of heroin sellers) X 2 (sex of heroin sellers) analysis of variance.

Table 1 shows that the treatment effects (A) were highly significant ($F(1,368) = 112.08$, $p<.01$). The significance of treatment effects meant that there was sex difference between men and women with regard to their suggested length of imprisonment to the herion seller. The significance of the row factor effect (B) showed that the attractiveness of heroin sellers led both men and women to a difference in their suggestions for the length of imprisonment to the heroin sellers ($F(1,368) = 310.08$, $p<.01$). The insignificance of the rows factor (C) led to the conclusion that the length of sentence suggested for a male criminal was equal to the suggested length of sentence for a female criminal.

Table-1. Analysis of variance

Source of variation	ssq	df	MS	F	p
Sex of Subject(A)	910.17	1	910.17	112.08	<.01
Attractiveness of heroin seller (B)	2517.9	1	25.17.9	310.08	<.01
Sex of heroin seller (C)	6.92	1	6.92		
A×B	116.17	1	116.17	14.30	<.01
A×C	453.64	1	453.64	55.86	<.01
B×C	10.55	1	10.55		
A×B×C	149.39	1	149.39	18.39	<.01
Within treatments	2990.86	368	8.12		
Total	7155.6	375			

The AxB interaction was significant (F (1,368) = 14.30, p<.01). This might lead to the conclusion that the sex effect of subjects was not independent of the physical attractiveness of criminals. In other words, men and women were not equally good for physically attractive and unattractive criminals. The AxC interaction was highly significant (F (1,368) = 55.86, p<.01). This might lead to the interpretation that sex effect of subjects ws not independent of the sex of the heroin sellers. In other words, the magnitude of the difference between men and women was not the same, within the limits of random variation, for the sex of the heroin sellers. The insignificant BxC interaction might be interpreted to mean that the physical attractiveness of the heroin sellers was independent of the sex of the heroin sellers or that sex was independent of the physical attractiveness of the heroin sellers. The AxBxC mean square was also significant (F (1,368) = 18.39, p<.01). This led to conclude that the effects of the sex of the subjects (A) and the attractiveness of the heroin sellers (B) interactions for the sex of the heroin sellers (C) were not the same; that the sex of the subjects (A) and the sex of the heroin sellers (C) interactions for the attractiveness of the heroin sellers (B) were not the same; and also the attractiveness of the herion sellers (B) and the sex of the heroin sellers (C) interactions for the sex of the subjects (A) were not the same.

Columns and rows factors were subjected to further analysis (Table 2) with a view to determining the differences both between and within sex of subjects, physical attractiveness and sex of criminals. For this end, t test was used. Critical value of one-tailed test was adopted in view of interest towards the direction of the effect of variables on the length of sentence. The rejection rate p=.005 was adopted.

Table 2 shows that women suggested longer length of prison sentences for the physically attractive female heroin seller than what men suggested for her (Means=10.61 & 2.93; t (92)=9.97, p<.005). It appeared that men had a lenient attitude towards the attractive woman. Women suggested longer imprisonment for the physically unattractive female heroin seller also than what men suggested for her (Means=13.08 & 10.14; t (92)=42, p<.005). It appeared that the physically unattractive woman also received relatively lenient treatment from men. Sex differences with regard to both physically attractive and unattractive female criminals might be interpreted to mean that women whether attractive or unattractive had effect

Table-2 Means of years of sentence. n=47 in each cell.

	Attractive		Unattractive		
	Female heroin seller	Male heroin seller	Female heroin seller	Male heroin seller	
Men N=188	$\overline{X}$ 2.93	5.78	10.14	11.14	$\overline{X}_{r_1}$ 7.50
Women N=188	$\overline{X}$ 10.61	6.55	13.08	12.21	$\overline{X}_{r_2}$ 10.61
	$\overline{X}_{c_1}$ 6.77	$\overline{X}_{c_2}$ 6.17	$\overline{X}_{c_3}$ 11.61	$\overline{X}_{c_4}$ 11.68	
	$X_{c_1c_2}$ 6.47		$X_{c_3c_4}$ 11.64		
	$X_{c_1c_3}$ 9.19				
		$X_{c_2c_4}$ 8.92			

on men, not on women. The physically unattractive male heroin seller was suggested longer sentences by women than what were suggested by men for him (Means =12.21 &11.14; t (92)=10.7, p<.005). Both men and women did not differ significantly with regard to the physical attractiveness of the male heroin seller (Means=5.78 & 6.55; t (92)=0.93, p>0.10). In general, women suggested longer lengths of sentence than what men suggested, regardless of both the sex and the physical attractiveness of the stimulus person (Means=10.61 & 7.50; t (374)=7.77, p<.005). Physically unattractive criminals, regardless of sex, were suggested longer imprisonment than what was suggested to attractive criminals by both the groups of subjects (Means=11.64 & 6.47; t (374)=4.30, p<.005). This finding got strength from the findings of Dion (1972); Landy & Aronson (1965); and Rich (1975). The lengths of sentence suggested by both the groups for male and female heroin sellers, regardless of their physical attractiveness, were statisically not different (Means=8.92 & 9.19; t (374)=0.62, p>0.10).

So far within differences were concerned, it was found that women suggested longest length of imprisonment for the physically unattractive female heroin seller and shortest imprisonment for the physically attractive male heroin seller (Means=13.08 & 6.55; t (92)=960, p<.005). Men suggested longest imprisonment for the physically unattractive male and shortest for the attractive female heroin seller (Means=11.14 & 2.93; t (92)=23.45, p<.005). The difference within men and within women might be interpreted to mean that attractiveness of a sex received concession from the opposite sex. The interpretation got support from Anderson & Nida's (1978) and Dion & Stein's (1978) conclusions that attractiveness had effect on opposite sex. In general, the attractive female criminal got lenient treatment as compared to the unattractive female criminal from both the groups of subjects (Means=6.77 & 11.61; t (186)=12.1, p<.005); so was the case with the attractive male as compared to the unattractive male (Means=6.17 & 11.68; t (186)=19.0, p<.005). The lengths of sentence suggested by

both the groups for the attractive male and the attractive female (Means=6.17 & 6.77; t (186)=1.25, p=0.10) and for the unattractive male and the unattractive female heroin sellers (Means=11.68 & 11.61; t (186)=0.63, p>0.10) were statistically not different.

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SOCIAL CLASS AND SEX DIFFERENCES IN PAKISTAN ON THE RAVEN'S STANDARD PROGRESSIVE MATRICES

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ABSTRACT

The Raven's Standard Progressive Matrices Test (SPM) was administered to 300, 6th to 8th grade students of various schools to determine the effect of sex and social class on the SPM. There were 150 male and 150 female subjects. The hypothesis regarding social class was supported i.e. the higher the social class of the subject the higher was his raw score on the RSPM, indicating a higher intellectual capacity. Analysis of variance was computed to study the treatment effects of the 3 social classes and it was found that there was a statistically significant difference between the performance of the 3 groups i.e. $F.01\ (2, 297) = 101.15$, $p < .01$ level.

The results regarding sex differences on the above test were insignificant as determined by a t-test ($t = .785$, $p > .05$).

INTRODUCTION

This section will deal, in order, with a review of the literature on the nature and development of intelligence; then, with a review of studies on sex differences in intelligence, and finally with an overview of research in the area done in Pakistan with special reference to the use of the Raven's Standard Progressive Matrices.

Intelligence is a broad term referring to complex mental abilities of the individual. It is a term employed by lay persons to denote such qualities as quickness of mind, level of academic success, status on an occupational scale, or the attainment of eminence in a particular field of endeavor. Psychologists have employed the term to indicate the amount of knowledge available and the rapidity with which new knowledge is acquired; the ability to adapt to new situations, and to handle concepts, relationships, and abstract symbols; and even simply that phenomenon which intelligence tests measure.

Wechsler (1985) defined intelligence as the ability to learn, the capacity to adapt to new situations, the ability to educe correlates, and so on. Learning, adapting, reasoning and other forms of goal directed behavior are only different ways in which intelligence manifests itself. One of the important aspects of intelligent behavior is that

it is goal directed, that is to say, purposive with respect to some intermediate or ulterior end.

Sternberg (1982) agrees that all intelligent behavior occurs in a social context that includes goals, expectations, demands and a history of prior experiences. Snow and Yalow (1982) maintain "our concept of intelligence is to a significant extent an emergent property of education. Education exercises native faculties of intelligence already in place, or education produces intelligence, or both". And education is conducted via social institutions - schools - that are essentially sources of goals, expectations, and demands represented through an organized sequence of educational experiences.

Zigler and Seitz (1982) view intelligence largely in terms of social competence, which depends crucially upon social environment; in a similar vein, they see family support systems as particularly important targets for intervention, because the family is an important interpreter of social context for the developing individual. The family is one of the virtually universal sources as well as interpreters of social context.

Sternberg (1982) adds that cultural differences reside more in the situations to which particular cognitive process are applied than in the existence of a process in one group and its absence in another. The idea of a situation in this context, seems implicitly to contain embedded within it the goals, expectations, demands, and history that are so important in shaping intellectual performance.

There are different orientations to the relationships between social context and intelligence. Nevertheless, several common themes run throughout:

(a) that all intelligent behavior occurs in a social context that includes goals, expectations, demands, and a history of prior experience;

(b) that the common element in intelligent behavior across situations and across individuals is goal directed activity;

(c) that the distinction between competence and performance is a critical one in conceptualizing intelligence;

(d) that detailed task analyses, including analysis of the relationship of the task to the individual, are necessary for the development of a complete conceptualization of intelligence;

(e) that differences in knowledge are an important source of individual differences in performance, and such knowledge differences may be in large part the result of contextual differences;

(f) that conceptualizations of intelligence are not, and cannot be, value free, and

(g) that sex differences in intelligence are small but significant only within younger age groups.

Guinagh (1971) indicates in genetic studies that intelligence is partly a native endowment of the individual, and partly the result of environmental influence and

cultural opportunities, at least to the extent that in the absence of stimulation, the consistent development of logical reasoning tends to remain latent, or to develop somewhat later in life. It has also been found that a person's social relations affect the use he makes of his opportunities, and the mental abilities he tends as a result to develop.

Flavell (1977) suggests that the baby is not an intelligent acting organism. The new born infant has only the potential to be intelligent. When a baby cries it does not understand its environment or itself. Certain physiological developments, as well as experience, must take place in the neurological system of the infant to enable it to make use of the cognitive processes that affect its potentialities. Intellectual growth is affected by heredity, stimulation, socioeconomic background and motivation.

Bayley (1970) believes that, given two children with the same genes, the child with the better prenatal and postnatal nutrition, the more intellectually stimulating and emotionally secure home, and the more appropriate rewards for academic accomplishments will attain the higher IQ score when tested in the first grades. She found that IQ differences between children of low and high socio-economic status becomes progressively greater between birth and entrance into school, suggesting that environmental conditions accentuate whatever differences in intelligence are present at birth.

As children from underprivileged families tend to fall behind in cognitive development even before they enter school, efforts have been made to provide more intellectual stimulation for these children during their early years. The teachers in the Head Start programs by Project Head Start (1965) provide the kind of intellectual stimulation that children in upper class homes usually receive from their parents. The visiting teachers also teach the mothers how to provide the same kinds of activities for their children. In general, the results have been promising. Children who have participated in such programs score about 10 points higher on the Stanford-Binet or WISC on entering school and tend to be more self-confident and socially competent than children who have not received special attention.

The vast amount of research in the past decade showing the ill effects of adverse conditions upon intellectual development has altered our idea about the nature and growth of intellectual abilities. We can combat this situation by altering the conditions under which some children develop. Children are not born with intelligence but are born with the capacity to develop intelligence. The nature of innate mental ability is revealed only by observation of the intelligence that has been developed. Whatever reinforcement is given to embellish the development of intelligence will assist the individual to reach his or her potential.

Scar-Salapalek (1971) proposes that genes do not specify behaviour but establish a range of probable responses to the environment, called the "reaction range". An enriched environment raises the individual's IQ score and a deprived one lowers it. But each type of individual has a specific reaction range. A person with the genetic potential for average or superior intelligence under normal environmental conditions has a much larger reaction range than an individual who is retarded or mentally defective. Presumably, the person with the superior potential has the greatest capacity to utilize an enriched environment and would show the greatest decrease in IQ under deprived conditions. He also suggested that an adverse environment has the greatest

effect on children of above average ability. Thus the environmental conditions that determine how an individual's intellectual potential will develop, will include nutrition, health, quality of stimulation, emotional climate of the home, and type of feedback elicited by behaviour.

Bloom (1964) estimates that 50 percent of mature intelligence is reached by age 4. Consequently, an impoverished environment during the first four years will be quite detrimental to the child's intellectual development. He proposes that an inadequate environment during childhood will adversely affect the development of intelligence to the extent that it can never completely overcome the ill effects whereas an enriched environment will most likely accelerate its development. Furthermore, Bloom (1976) also suggests that "almost all persons can learn if provided the appropriate prior and current conditions of learning". The early years are more crucial. The crucial aspects of environment, particularly in the home are parental support, motivation for learning and emotional satisfaction.

Golden et al (1973) in their studies found little difference among children of different social class groups at age 2. However, by age 3, significant differences had appeared. Children from the highest social class group scored 20 points higher on IQ test, than did children from the lowest social class group. That disparity held from age 3 onward, and the differences existed for all types of tasks.

Willerman and co-workers (1970) found that retarded 8 month old babies were seven times more likely to have low IQs by 4 years of age if they were from a lower socio-economic status. The physical aspect of development could account for some but not all of this difference. The major difference seems to be the early and systematic stimulation of the child by the parents. Nonetheless, it should not be over-looked that such physical care as diet, medical attention, and establishment of routines relative to sleep, play and rest can help facilitate growth.

Jones, Garrison and Morgan (1985) propose that children from deprived backgrounds score well below middle class children on standard individual and group measures of intelligence (a gap that increases with age); they come to school without the skills necessary for coping with the first grade curriculum, their language development is poor in general articulation, in word comprehension and in word meaning.

Therefore these authors conclude that:

1. The behaviour which leads to social, educational, and economic poverty is socialized in early childhood, that is, it is learned.

2. The central quality involved in the effects of cultural deprivation is lack of cognitive meaning in the mother-child communication system.

3. Growth of the cognitive process is fostered in family control systems that offer and permit a wide range of alternatives of action and thought.

In summary, concerning early experiences and/or deprivation overwhelming evidence suggests that real deficits exist in children where environments are less than

optimal. The cognitive process is characterized by activity, seeking of experience, and information processing; and this requires stimulation from a variety of sources the lack of any combination of which may result in intellectual deficits.

Another factor influencing intellectual development may be sex differences. Environmental factors are no doubt important. The strong effects of the different ways that males and females are treated by their parents, teachers and others have been well documented. The different socialization process may account for many of the differences found between males and females. For example, a behaviorist would argue that these differences arise because males and females are reinforced for different kinds of behaviors, the types that those around them think appropriate for their sex. A cognitive theorist would argue that an individual does not learn to behave in a particular way as much as he or she learns to think in a way appropriate for a particular sex.

Maccoby and Jacklin (1974) suggested that upto about age 7, girls as a group do show superior overall test scores, but this early superiority may be due to girls' advanced physical maturation during this period. Males and females probably do not differ in overall general ability when they mature. The biggest sex differences are found not in overall scores, but in patterns of scores for special abilities. Females of all ages tend to score higher than males of the same age and education on verbal tests of reading comprehension. They also usually do better on tests that involve short-term memory and speed. Males score higher in mathematical reasoning and on tests that involve visual spatial skills whereas girls are better at learning languages, writing English, and tasks requiring fine motor movement.

Benbow and Stanley (1980); Kolata (1980) have studied children with unusual mathematical talent. They found that boys excel girls in mathematical reasoning even at the 7th and 8th grade level, which may be due to a sex-related ability difference.

Libsen and Golbeck (1980) found competence differences between boys and girls aged 3, 5, 7, 9 and 11 on Piagetian spatial using "physical" or "nonphysical" versions of the horizontal and vertical to favor boys. Girls could be less motivated and therefore performance is perhaps affected by lower expectations for success. Sex differences in language are usually attributed to the more rapid physical maturation of girls although the early environment of the average boy is less conducive to language development than that of girls and a greater difference exists for children from the lower social class.

Jones, Garrison and Morgan (1985) found that on intelligence tests girls score over a greater range than do boys. There are more mental defectives among boys and as many gifted as girls. It is generally believed that girls do slightly better on intelligence tests, perhaps because of their linguistic skills. Girls, compared to boys of the same age, advance more rapidly in their intelligence.

Bradway and Thompson (1962) have found that girls gain less than boys,judging by intelligence test scores between adolescent and adulthood, with the brightest girls making the least gains. It should be noted, however, that until quite recently intellectual females were frequently not well accepted so they may have hidden their abilities.

Many other sex differences in intelligence and personality have been explored in research. Wittig and Peterson (1980) suggested the specific intellectual abilities such as infants perception of faces are related to structural or developmental differences in male and female brains. Lehrke (1978) proposed that some intellectual characteristics are sex-linked to the X-chromosome and are thus more likely to appear in one sex than another.

The genealogy of Raven's Standard Progressive Matrices (or SPM) can be traced back to the investigations of Spearman (1927) into the nature of intelligence. In particular he stressed the importance of eductive and reproductive behavior and concluded that "to understand the respective natures of eduction and reproduction - in their trenchant contrast, in their ubiquitous cooperation and their genetic interlinkage - to do this would appear to be for the psychology of individual abilities the very beginning of wisdom".

According to Raven, Court and Raven (1979) the SPM was designed to sample the general range of ability. They provide a means to assess a person's present ability to perceive and think clearly, irrespective of past experience or present ability for verbal communication. The scales can be described as "tests of observation and clear thinking". Each problem in a scale is really the "mother" or "source" of a system of thought, while the order in which the problems are presented provide the standard training in the method of working. Hence the name "Progressive Matrices".

In the Standard Progressive Matrices test (SPM) everyone is given the same problems arranged in the same order and is asked to work at his own speed from the beginning to the end of the scale, without interruption. In this way it is possible to assess at the time to the test a person's capacity for observation and clear thinking relative to other people. This is what we usually want to know, particularly as a person's speed of intellectual work varies with health or distractions more than the orderliness of his judgements, provided ofcourse that he is allowed time to work at his own speed.

The following Pakistani studies on the SPM tend to support the validity of the instrument and are also supportive of the ample evidence in the literature which suggests that higher social status and higher intelligence test scores go together:

Riaz (1978) carried out a validation study of SPM. Although she found significant increments in SPM scores, relation with age could not be obtained which the author attributes to a lack of proper age records in schools. On the other hand, quite satisfactory grade differentiation was obtained for grades 6 through 8 although not beyond that. These results seem to indicate that Matrices can be used as a valid measure of intelligence for the urban school-going population of grades 6-8. The test was also found reliable for them.

Ansari and Iftikhar (1984) studied the validity of Raven's Standard Progressive Matrices for urban and rural school children in Pakistan. The results suggest that for the urban group the effects of grade as well as performance are significant. It also indicated that the SPM is useful as a test of intellectual performance for the urban school children. For the rural school children the utility of this test is not so certain. In addition they found that sex differences were insignificant for the 6th to 8th grade levels. Girls had a slightly higher score in each grade, but the differences in none of the 3 grades were significant. Urban-rural differences were also found to be significant.

Jamal (1964) also explored the relationship between socio-economic status (SES) and intelligence, as measured by Coloured Progressive Matrices. She took two groups of 50 children each; one belonging to a high SES school and the other to a low SES school. The results showed that while there is no difference between children of high and low SES in the lower grades, a significant difference does appear at the higher grades.

Zaki and Beg (1969) undertook a validation study of SPM on children of grade four and five. The results showed that the SPM does discriminate between the children belonging to lower and upper SES, thus contradicting the previous study.

The purpose of the present study was to determine whether the nature of the environment has an affect on the individual's intellectual capacity as measured by the Standard Progressive Matrices (Raven, 1956). Another problem was to investigate which of the two sexes in our culture appear to have relatively higher intellectual capacity. Since Riaz (1978) and Ansari and Iftikhar (1984) suggest that the SPM is a valid measure for Pakistani 6th through 8th graders our interest was in studying whether performance within these grades is affected by differential environmental stimulation and whether there are any sex differences in performance on the SPM.

METHOD

Sample

The sample consisted of 300 students from various schools of Karachi region 150 of whom were males and 150 females. The students' level of education ranged from the 6th grade to the 8th grade level. The mean age of this group was 12.2 years.

Procedure

The above subjects were randomly selected from the various schools. The purpose of the test was explained to the teachers whose help was required to conduct the study. In the meeting with the students the nature of testing was explained. The idea of this meeting was to reassure the students and reduce test anxiety, hence it was held in an informal atmosphere.

Actual testing was carried out in groups of 15 students with standard instructions (Raven, Court and Raven, 1983) and without any time limit. Students were asked to hand over the answer sheets on completion of the test. Birth dates of the students and time taken by them were noted down to have an idea of the average time required. After completing the test the students were individually asked to fill up a brief questionnaire which was attached at the back of the answer sheet. Socio-economic status (SES) of each subject was determined with the help of the questionnaire. The questionnaire comprised sections on: (1) father's occupation (2) father's education (3) average monthly family income (4) type of housing (residence).

The weightage to the above factors was given according to: Hollingshead and Redlich's (1958) Families Index of Social Position Scores. The range of the scores on

social position was equally divided for the three groups fo socio-economic status, namely: 1. Lower class 2. Middle class 3 Higher class.

The data analysis was carried out through the use of T-test to find out the significance of difference between the means of the two sex groups.

Analysis of variance was used to study the significance of difference between the mean raw scores of the 3 socio-economic groups and the treatment effects.

RESULTS & DISCUSSION

Table I

Difference on the RSPM raw scores between males and females

Sex	N	Mean	S.D.	t	df	P
Males	150	37.33	9.465			
				0.785	298	>.05
Females	150	36.38	11.472			

The obtained t value is insignificant at p>.05 level, indicating that there is no difference between the intellectual performance of males and females on the RSPM.

Table II

Analysis of variance summary table

Source of Variance	Sum of squares	df	Mean of squares	F	P
Between Groups	13079.87	2	6539.94	101.15	<.01
Within Groups	19202.25	297	64.65		
Total	32282.12	299			

Critical ratio for 2 and 297 degrees of freedom is F<.01 (2,297)= 6.73 The obtained F exceeds the critical ratio. Therefore there is a significant difference obtained between the three groups of socio-economic status.

Table III

Mean raw scores of the three socio-economic groups on RSPM

Socio-economic groups	*Total Raw-scores*	*N*	*Mean*
Lower class	2065	74	27.905
Middle class	3284	96	34.208
Upper class	5709	130	43.915
Total	11058	300	36.860

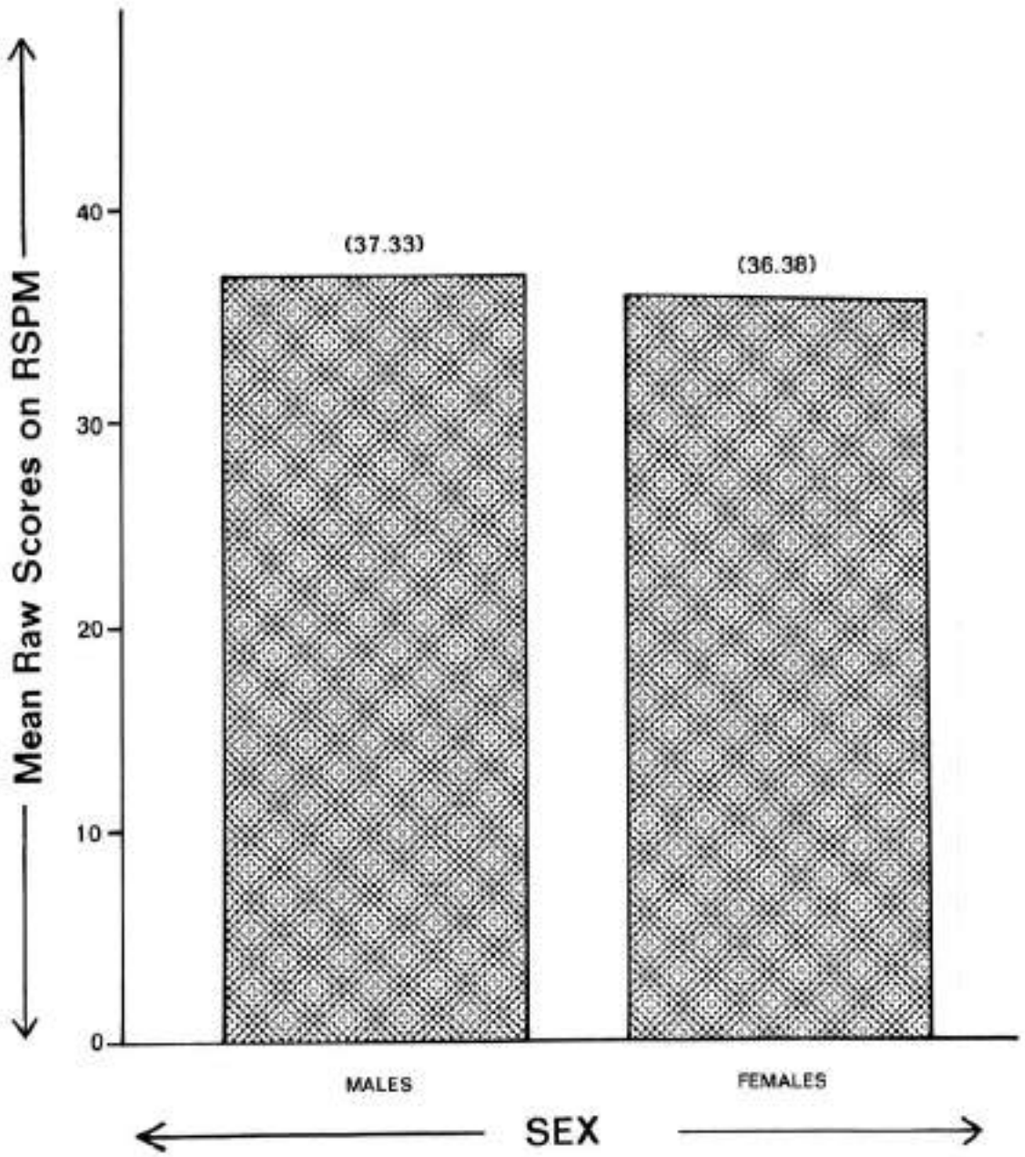
Table I presents the difference on the Standard Progressive Matrices raw scores obtained by males and females of different grade levels i.e. from 6th to 8th grade. It is observed that the mean raw score of the females is 36.38 whereas for males it is slightly higher i.e. 37.33 but this difference is not statistically significant. So it may be concluded that both male and female students of urban schools are not much different in their exposure to the social environment and go through a somewhat similar socialization process.

Table II is a summary table of the analysis of variance test which indicates the between effects of the 3 treatment groups and the within effects of the 3 groups i.e. lower class, middle class and higher socio-economic class. It may be observed that F value at .01 level with degrees of freedom (2,297) = 101.15, whereas the critical ratio i.e. the table value is 6.73 which goes to reject the null hypothesis that there is no difference in the performance of the 3 groups.

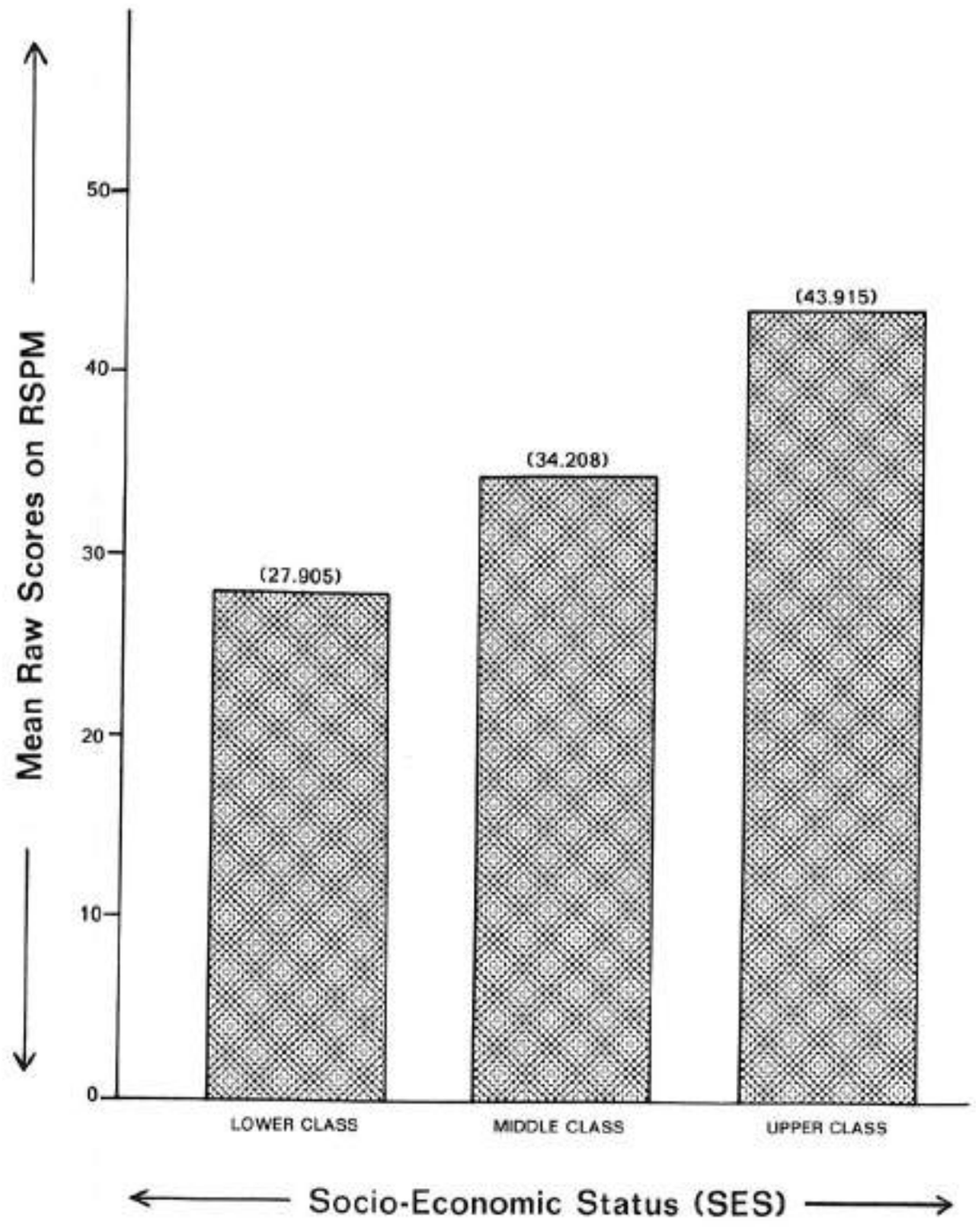
With this result it may be concluded that the Matrices Test yielded different scores for groups when classified by social class. The higher the social class, the higher the mean raw score obtained by the subjects on the intellectual performance test. This is clear from table III which indicates that the mean raw score for lower class is 27.905, for middle class is 34.208 and for upper class is 43.915.

The causes of the significant differences between students belonging to different socioeconomic groups may be attributed to differing socialization processes in each of the groups from birth onwards resulting in differential emphasis on and build up of cognitive skills. The differences are further deepended by the differing physical environment of schools, education and training of teachers, expectations and demands made on the students and various other contextual differences.

A Graph Representing the Mean Raw scores on RSPM Obtained by the Two Sexes



A Graph Representing the Mean Raw Scores of the Three Socio-Economic Groups on the RSPM



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RISK FACTORS FOR DRUG ABUSE

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What has been described as an epidemic of drug abuse in recent years has promoted a vigorous response around the world. Part of this response has involved efforts to curtail the supply of illegal drugs by crop substitution programs, more effective law enforcement and interdiction systems, and the like. Efforts have also been made to attack the drug problem from the demand side by media campaigns and school programs to highlight the dangers of drug use and emphasize the values of a drug-free life. While the techniques and content of such preventive efforts are continually being revised, there is considerable doubt as to the effectiveness of at least the initial programs (Berberian, Gross, Lovejoy, and Paparella, 1976). The picture here is not an altogether negative one, however; despite initial setbacks, research directed at reducing demand has yielded some important leads.

Among the most promising have been those concerned with identifying characteristics which put persons "at risk" for abuse or addiction (Klerman, 1978; Lettieri, 1975). The long-run objective here is to reduce demand by dealing directly with the risk factors rather than simply urging people not to take drugs. Theoretically such risk factors might be physiological, demographic, economic, social or psychological. In the most credible studies (Bry, Pedraza and Pandina, 1986; Ginsberg and Greenley, 1978; Jessor and Jessor, 1978) the research strategy has been longitudinal: large numbers of individuals have been evaluated on a wide spectrum of variables which might conceivably be related to abuse; these persons are then tracked over several years to identify which become users. The predictive utility of each of the original, pre-morbid variables assessed can then be determined. In a sense, an individual's status on the composite of risk factors constitutes a vulnerability index for him or her.

Epidemiological studies of this sort have pointed to a wide range of psychosocial precursors of drug abuse, including poor school performance, low self-esteem, high sensation seeking, low achievement motivation and exposure to family and peer models of abuse. No one person will demonstrate all of the risk factors but having three or four of them puts one in a group that is statistically more at risk than the general population. The precise relationship between the number of risk factors one exhibits and the probability of abuse has not been determined although some evidence suggests that it may be a simple linear one (Bry, Mc Keon and Pandina, 1982).

Work in the United States, much of it carried out by researchers at the Center for Alcohol Studies, Rutger University, has identified at least a dozen risk factors. No single study has yet attempted to examine all of these so the list represents a composite gathered from a series of investigations. Indeed not every factor found to be a correlate of drug abuse in one study emerges as important in others suggesting that an

individual's overall vulnerability is a function of *how many* risk factors — rather than *which* ones — characterise him. The list is also, of course, culture bound. The factors emerge from work done exclusively in America, using instruments developed in that country. The psychological states, social contexts, and reinforcement contingencies which predispose one to turn to drugs in New York or Los Angeles may be quite different from those which lead to this behavior in Karachi or Peshawar. Knowing the characteristics which set one at risk in America may thus be of little practical value for organizing a prevention campaign or treatment program in Pakistan. Nevertheless the American efforts provide a starting point for work in Pakistan and elsewhere. It is in fact not unlikely that empirical research may ultimately identify many of the same factors as setting one at risk in any culture. A report on drug dependent persons in Qatar on the Arabian Gulf, for example, yielded a profile having much in common with that found in the United States (El-Akabawi, El-Kordi and El-Nasseri, 1986).

A complete examination of all of the risk factors is not possible here. A brief description of a few, however, will highlight the kinds of characteristics yielded by this kind of research. This summary follows Bry's more elaborate presentation (1983). Conjectures as to mechanisms relating each factor to later drug abuse are generally those of the present author.

Early use of tobacco, alcohol and drugs

It is hardly surprising that individuals who use illicit drugs at an early age are more likely than others to use them later on in adolescence or young adulthood. Indeed since some who experiment with them in childhood simply continue this involvement, the relationship is built into the data. The scenario is different for alcohol but again is not unexpected. Even in societies where alcohol is tolerated it is not approved for children. Early use thus indicates a kind of unacceptable involvement with a drug. In adolescence the individual may change his drug of choice from alcohol to another agent. What continues over time is the pattern of illicit drug involvement. Since most addicts are polydrug abusers whose menu includes alcohol (at least as a "fallback" if other agents are not available) it could be argued that the principal change over time is simply an expansion of the number of drugs with which the person is involved.

What is surprising is that tobacco is included among those substances whose early use renders one more vulnerable to future drug abuse. Again it is possible that since the use of tobacco is frowned on below a certain age, early involvement with this substance constitutes a type of illicit involvement and it is this general pattern (a kind of propensity or willingness to use substances despite social condemnation) which continues into later years. At any rate, early use of substances including tobacco has been repeatedly identified as a precursor of future drug abuse.

Early problem behavior

One of the most powerful predictors of whether an individual will develop a problem with drugs is the extent to which that person had serious non-drug related problems, usually in early adolescence, in the past. O'Donnell and Clayton (1979), in fact, found it to be among the five most useful variables for predicting marijuana use. "Problems" here include difficulties in school and with the police.

The basis for this relationship is again unclear. One obvious possibility is that peer group influence is a principal determinant of both drug-related and non-drug-related deviance. Peer groups which accept or encourage anti-social behaviors of one sort are likely to encourage others. And the pre-adolescent who is susceptible to such influences is likely to grow into the adolescent or young adult who remains susceptible. Such a progression seems especially plausible since (a) most individuals are introduced to drugs by peers; (b) low self-esteem, which increases susceptibility to group pressures, is itself a precursor of drug involvement, and (c) social conformity as a general trait has been found to relate to drug usage (Knecht, Cundick, Edwards, and Gunderson, 1972.)

Low self-esteem

Kaplan (1978) found poor self-esteem to be related to involvement in a range of deviant behaviors, drug abuse among them. There are several mechanisms which might explain this, one being the low esteem — conformity — deviant peer group process described above. Another, more straightforward, possibility is that the drugs themselves enhance feelings of esteem. The euphoric state effected by the drugs, that is, often includes enhanced positive feelings about oneself or at least a lesser awareness of one's failings and limitations. The addict's report that drugs make him "feel good" may refer in large part to experiences of enhanced self-esteem.

Use of legitimate drugs

One of the most interesting relationships between drug abuse and its precursors involves the individual's early experiences with *licit* drugs. Templer, Ruff, and Ayres (1974) found that college students were more likely to report using illegal drugs if as children they had been given prescription pain killers or licit psychotropic drugs. They were also more likely to be abusing drugs if they had made "considerable" use of non-prescription medication such as sleeping compounds and surprisingly, aspirin. Even reporting that one's parents were "quick to give medicine" resulted in an increased probability of later illicit drug use.

Bry (1983) considers these results under the heading of "family misuse of substances". This categorization implies that the children's receiving of legitimate drugs represented an overuse, if not an altogether improper use of such agents. This does not appear a necessary conclusion. Strong pain killers and even prescription

psychotropic medications might have been administered in generally appropriate circumstances. An alternative and perhaps more distressing view of the findings is that parents for whom the giving (and presumably taking) of medications is a salient and readily-exercised response for easing discomfort, tend to raise children who continue to look to drugs to improve things. In a sense, a frame of mind is established in such families that drugs are the treatment of choice for life's problems. Given this perspective, the individual's reluctance to include illicit drugs among his relief agents may be weakened.

Psychological needs of the individual

The taking of drugs can result in changes in a wide range of need states which the individual might regard as satisfying. Heroin, for example, regularly leads to diminution of anxiety and depression and increased feelings of relaxation. It would be expected then that higher levels of these need states might be associated with greater drug use. The more tense and anxious one is, the more likely one will experiment with options that promise to alleviate this condition. Further, the greater the level of discomfort, the more reinforcing will be the behavior that effectively alters it. Thus the highly anxious individual finds the taking of drugs more rewarding than the less anxious one. The greater the reinforcement value of drug-taking behavior, the more likely it is to be repeated.

These are straightforward, even obvious comments. Their practical implications are considerable, if equally straightforward, however. Since the greater the level of need, the greater the lure and reward value of drugs, the preventive strategy is to provide more desirable ways to meet the needs. Since narcotics can effectively induce relaxation, the preventive strategy is to provide socially acceptable options that people can use to relax. Recreational facilities, for example, or clinics that offer training in relaxation techniques are possibilities. Even making available, through established medical outlets, legitimate anxiolytic agents is preferable to having individuals "self-medicate" with street drugs. The specific need-filling alternatives to be offered in a given community must be determined, of course, after taking account of practical realities (funding, available personnel and physical facilities, cultural views of the options offered). The general hypothesis applies across communities, however, and probably across cultures: since drugs have the capacity to alter certain need states their use can be mitigated if socially-sanctioned alternatives for satisfying those needs are made available. The same arguments might be made with regard to self-esteem. If drugs (and involvement with the drug subculture) can serve to enhance self-esteem, the likelihood that persons will select this means should decrease as optional ways of raising esteem become available. Drug-taking in this respect is viewed as a substitute for more typical — and less harmful — ways of fulfilling human needs.

It should be noted that this need gratification argument does not suggest that the needs themselves are pathological. There is nothing neurotic about wanting to enhance esteem, reduce anxiety, or seek stimulation (a risk factor not discussed here). Only the means chosen to deal with these are deviant. When patterns of needs have been the focus of the search for psychosocial precursors, several of those identified as

disposing persons to drug abuse are not at all indicative of pathology in themselves. Labouvie and McGee (1986) used the Edwards Personal Preference Schedule — a scale which assesses an individual's status on some 16 psychological needs or motives — to differentiate drug abusers and non-abusers in a large sample of secondary school pupils. Five of the needs were found to be associated with drug abuse, serving as "excitors": affiliation, autonomy, exhibitionism, impulsivity, and play. That is, a young person with high needs to be with others (affiliation) or conversely to be independent, was more disposed to abuse drugs than one not so motivated. Relatively high needs to be paid attention by others (exhibitionism) and to engage in playful activities also were associated with abuse. There is nothing inherently pathogenic about such motives. Affiliation and independence, even the need to attract attention are perfectly acceptable characteristics of themselves. (Indeed the "excitor" pattern is not unlike to that found in personality studies of successful athletes). Deviance results from the behaviors "selected" to gratify them. Again, the preventive implication is clear: provide alternative means of gratification. It is worth noting that this view suggests that attacking drug abuse does not necessarily require altering the basic psychological make-up of individuals at risk. Rather, changes are called for in the environment in which such individuals function. The resulting behavior — in this case abuse or non-abuse — is a consequence of the interaction of personalities and environment.

The purpose of this paper has been to present the "risk factors" strategy and to describe some of those precursors which have been identified. The factors discussed here are not nearly exhaustive. We have considered (1) early use of tobacco, alcohol, and drugs; (2) early problem behavior; (3) low self-esteem; (4) use of legitimate drugs; and (5) psychological needs of the individual. Investigators have consistently found these additional correlates of drug abuse: (6) disturbed family relationships; (7) psychopathology; (8) disregard for rules; (9) low religiosity; (10) high sensation seeking; and (11) high use of drugs among peers (Blum and Richards, 1979; Braucht, Brakash, Follingstad and Berry, 1973; Bry, 1983). Two other correlates of drug abuse which might also be classified as risk factors are (12) availability and (13) occurrence of stressful life events. Finally, it is certainly reasonable to count those "excitor" needs identified by Labouvie and McGee (1986) as risk factors.

The list then is a lengthy one. Being characterized by one or two of these factors does not put an individual at risk. Being high on several does, however. It appears, as noted above that risk is a linear function of the number of risk factors one displays rather than any particular combination of them (Bry, McKeon and Pandina, 1982; Bry, Pedraza, and Pandina, 1986). The implications of such findings for prevention strategies are clear but formidable. Since there are many paths to drug abuse, many combinations of factors which might lead an individual to become involved with drugs, preventive programs need to be multi-faceted. As many as possible of the factors must be addressed. This requires a coordinated program of community agencies, government and non-government alike, and the participation of medical, psychological, religious, athletic, and business sectors of the society. Enormous as the task appears, research on risk factors has provided guidelines as to what its specific components should be. Attempts to identify such factors in nations such as Pakistan (a

study is presently underway in Rawalpindi under the direction of Dr. Malik Mubbashar and the present author) should be equally valuable for designing prevention campaigns.

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ANXIETY AND JOB SATISFACTION

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ABSTRACT

The purpose of the present study was to determine the relationship between anxiety and job satisfaction. A job satisfaction questionnaire and IPAT Anxiety Scale were administered to a sample of 25 male and 25 female employees. The Pearson Product Coefficient of Correlation was computed for the whole group, as well as for the males and females separately. Although inverse relation was found for all the 3 groups yet the result was significant only for the male workers. Further the differences between male and female employees was insignificant for job satisfaction as well as for anxiety. When job satisfaction of moderately anxious group was compared with high anxious group, again the result was insignificant.

INTRODUCTION

Job satisfaction is an important source for industrial production and innumerable studies have been conducted in order to determine factors responsible for job satisfaction. Previously psychologists were mainly concerned with how job satisfaction helps to understand job performance variables but now nature of their theory and practice has changed. Since importance is now being given to job satisfaction as a dependent variable therefore we want to have an insight into the determinants of job satisfaction. One of the important factors is the emotional condition of the worker. It is evident that many emotional symptoms of the workers may not manifest themselves in the presence of other employees unless it is mentioned by the worker himself. Hence it may be possible that emotional disturbances may go undetected for a long period of time even when work performance itself is totally unsatisfactory.

Fraser (1947) found that 10 percent of British industrial population suffer from disabling neurotic illness and one fifth of the workers from minor nervous disorders. Ganguli (1967) in a study on Indian industrial workers found the extent of neurosis to be 12 percent. Emotional problems are responsible for approximately 20 to 30 percent of employee absenteeism and as much as 80 percent of the people who are fired by

industry are dropped from their jobs because of personal rather than technical factors (Weiner, Akabas and Sommer, 1973).

Research on anxiety has revealed a number of ways in which it may affect performance (Basowitz, Harold, Sheldon and Roy, 1955). Visual perception is likely to be disturbed, with a resulting increase in errors on tasks such as those performed in most clerical occupations, inspection jobs, and the like. This reduced perceptual efficiency is also reflected in a general reduction in speed; one faces difficulty in learning new things. The anxious employee characteristically needs a much longer period of training when introduced to unfamiliar job duties. Skill is decreased in tasks requiring dexterity and muscular coordination. Intellectual processes are also affected. Memory is poorer; reasoning and problem solving tend to suffer. The person experiencing severe anxiety finds it difficult to concentrate on the main job. He cannot devote his attention and energies to his work.

There are also certain kinds of work which are particularly sensitive to disruption by excessive emotion. A sales occupation, for instance, is easily affected if the man feels intense anxiety and guilt (Miner, 1962; Steeiner, 1953) particularly if these emotions are often precipitated in the presence of other people. A major factor in the failure of soldiers who perform ineffectively during parachute training is their inability to cope with the intense anxiety that the jump situation may produce. Refusal to jump almost invariably reflects the presence of acute, immobilizing anxiety (Basowitz, Harold, Sheldon and Roy, 1955).

Alexander (1980) presented 3 case histories illustrating "burn out" in air traffic controllers, a syndrome characterized by depression, anxiety, fear of a midair collision, insomnia, and inability to function professionally with confidence. Individuals showing such reactions are rapidly retired for medical reasons from air traffic control work. While removal from control work generally results in a rapid abatement of the symptoms, it is also accompanied by a loss of initiative to return to work. Singh (1979) administered a battery of psychometric measures to 400 farmers. Fast and slow progressing subjects were comparable in regard to age, education, socioeconomic status and land holdings. However, the fast progressing subjects were significantly more intelligent. Achievement and related variables (e.g., level of aspiration, job satisfaction) tended to promote farm behavior, while anxiety and religious interest tended to retard it.

It is not only that job performance deteriorates under conditions of stress but also studies in connection with job satisfaction and anxiety have shown that low job satisfaction can increase the level of anxiety. In a way it can be said that there is an inverse relation between these 2 variables. Ganguli (1967) reported that a normal group of workers had significantly greater satisfaction with terms and conditions of their service as compared to those who were unwell. Jaranson & Gregory (1980), administered the Minnesota Satisfaction Questionnaire to 299 Portland Area Indian Health Service employees. Overall, subjects were satisfied with their jobs. Non-clinical employees and those working longer in federal systems were more satisfied.

According to Kornhauser (1970) jobs in which workers are better satisfied are conducive to better mental health; jobs in which larger numbers are dissatisfied are correspondingly conducive to poor mental health. Moreover in all the occupational categories the better satisfied enjoy better mental health than those less satisfied. Robbinson and Hoppack (1952) reported that satisfied workers showed fewer indications of emotional maladjustment.

Guha (1965) indicated that neuroticism is negatively related to job satisfaction. Studies on anxiety (Jawa, 1971; Sinha and Aggarwal, 1971; Srivastava and Sinha, 1972) showed inverse relationship between anxiety and job satisfaction. However a neurotic tendency leads to job dissatisfaction only when the job itself is one of "greater" strain. Common worries of women workers showed inverse relationship with job satisfaction (Ahmed, 1975).

Coldwell (1979) investigated the relationships between role conflict, job satisfaction, and situational anxiety in 2 samples of 100 Black industrial workers each. Subjects were selected from 2 work sites of a construction company and consisted mainly of poorly educated, unskilled migrant workers. Significant correlations were found among the three variables. Significant differences were also obtained between migrant and nonmigrant Black workers. Gupta (1982) found a significant relationship between job satisfaction and peptic ulcer which is an indicator of mental health. Ahmad and Razzack (1983) investigated mental health and its relation to job satisfaction among the blue collar workers in an electronic factory. Significant inverse relationship was obtained between neuroticism and job satisfaction. However, the personal variables were not found to have any relation with mental health.

It is clear from the above studies that job satisfaction does have a relationship with emotional problems particularly anxiety. Anxiety, if high, not only results in low satisfaction in one area but in a variety of human functioning. The purpose of the present study, therefore, is not only to determine the relationship between anxiety and job satisfaction in general but also to see the difference in job satisfaction of those whose anxiety is considered to be moderate and of those who are under high state of anxiety.

METHOD

Sample:

A total of 25 male and 25 female workers — served as the sample for the present study. Their average age was 33.78 years while the range of education was from Matric to Masters.

Procedure:

Job satisfaction questionnaire by Ganguli (1954) stapled over the IPAT Anxiety

Scale were voluntarily completed by the employees individually. Before administering the questionnaire and IPAT Anxiety scale subjects were assured that all information would remain confidential and that it would be used for research purposes only. The total job satisfaction score was the sum of responses on a five point scale, while total anxiety score was the sum of weighted responses on the 40 items of the scale, in which the moderate anxiety group falls between a sten of 4-6, and the high anxiety group from sten 7-10.

The Pearson 'r' was applied to determine the relationship between anxiety and job satisfaction for 3 groups i.e. whole, males and females. t' test was applied to compare job satisfaction of moderately and high anxious groups. Low anxious group was neither compared with moderate or high anxious group since only about 6% of the subjects fell into low anxious group. Furthermore, differences in job satisfaction and anxiety were also determined with the help of 't' test for male and female employees.

RESULTS AND DISCUSSIONS

In order to determine the extent of effect of anxiety on job satisfaction, Pearson r and 't' test were applied. When Pearson r, between anxiety and job satisfaction for various groups were calculated it was found that though the relationship was inverse in all three cases yet the result was significant only for the group of male workers ($r = -0.429$, df 23; $p<.05$). Which shows that anxiety in males contribute more to low job satisfaction as compared to anxiety in females ($r = -0.189$, df 23; not significant).

While comparing the mean scores of male and female workers for anxiety and job satisfaction, it was found that females are higher on both, but the difference is satistically insignificant in the case of anxiety ($t = 1.26$, df 48; not significant), as well as for job satisfaction, ($t = 1.14$, df 48; not significant). Thus the present results does not go conform with the work of Wheeler (1965), Eiduson (1968), Hundal et al. (1970, 1972) and Farooqi (1978), who found their female subjects to be more anxious as compared to males.

When job satisfaction of the moderately anxious group was compared to the high anxious group, again the means indicated that workers whose levels of anxiety fall within the normal range have greater job satisfaction as compared to those whose anxiety falls within the pathological range but the difference fell short of statistical significance ($t = 1.07$, df 45; not significant).

The reason for such an insignificant result can be that the sample taken was from different occupational groups therefore environment in one job might be more satisfactory as compared to that in other jobs. Thus it appears that the anxiety levels of highly anxious workers who are working in a good environment may not contribute to the lowering of job satisfaction to the extent that this may happen if the job and work environment itself is one of great strain.

TABLE I

SHOWING CORRELATION OF ANXIETY AND JOB SATISFACTION

Groups	Correlation of Anxiety and Job Satisfaction	df	P
Whole	– 0.269	48	Not Significant
Males	– 0.429	23	<.05
Females	– 0.189	23	Not Significant

TABLE II

SHOWING, MEAN, STANDARD DEVIATIONS, STANDARD ERROR OF MEASUREMENTS, OF ANXIETY AND JOB SATISFACTION

	WHOLE		MALES		FEMALES	
	Anxiety	Job Satisfaction	Anxiety	Job Satisfaction	Anxiety	Job Satisfaction
Mean	34.96	86.06	33.24	84.00	36.68	88.12
Standard Deviation	9.82	12.79	9.33	13.18	10.19	12.31
S.E.M	1.39	1.81	1.87	2.64	2.04	2.46

TABLE III

SHOWING DIFFERENCE OF JOB SATISFACTION BETWEEN MODERATELY ANXIOUS AND HIGH ANXIOUS GROUPS

Groups	Mean	S.D.	t	df	P
Moderately Anxious	87.43	9.46	1.07	45	Not Significant
High Anxious	83.21	15.30			

TABLE IV

SHOWING DIFFERENCE BETWEEN MALE AND FEMALE WORKERS IN RELATION TO THE LEVEL OF ANXIETY

Groups	Mean	S.D.	t	df	P
Females	36.68	10.19	1.26	48	Not Significant
Males	33.24	9.33			

TABLE V

SHOWING DIFFERENCE BETWEEN MALE AND FEMALE WORKERS IN RELATION TO JOB SATISFACTION

Groups	Mean	S.D.	t	df	P
Females	88.12	12.31	1.14	48	Not Significant
Males	84.00	13.18			

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RELATIONSHIP BETWEEN IDEATIONAL FLUENCY AND INTELLIGENCE AMONG ACADEMICALLY GIFTED AND AVERAGE STUDENTS

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ABSTRACT

The study was aimed at investigating the relationship between ideational fluency and intelligence among academically gifted and average students. A group of 22 academically gifted and 89 average, F. Sc. students belonging to different colleges were given the Creative Thinking Test as a measure of ideational fluency and two intelligence tests, namely Standard Progressive Matrices (SPM) and College Qualification Test (CQT). Results show that there is a positive significant relationship among intelligence tests but a moderately low relationship with the Creative Thinking Test. This is theoretically in line with some of the researches done in the West. Results also indicate that intelligence tests did not discriminate well between the academically gifted and the average group of students, whereas the Creative Thinking Test did relatively better. This leads to the theoretically very convincing proposition that academically gifted students are superior divergers as compared to average students and this accounts for their superior academic performance.

INTRODUCTION

The term "creativity" has been used in different ways. Creativity means flexibility of thinking or fluency of ideas; or it may be the ability to come up with new and novel ideas, or to see things in new relationships; in some cases creativity is defined as the ability to think in ways that are different from other people. Usually creativity is thought of as being constructive, productive behavior that can be seen in action or accomplishment. It does not have to be a unique phenomenon in the world, but it does have to be basically a contribution from the individual.

Ideational fluency has sometimes been used as measure of creativity. According to Wallach (1971) ideational fluency is the fundamental ability underlying all of the so-called creativity measures. Ideational fluency has to do with the rate of generation of quantity of ideas. The idea produced may be as simple as a single world, as complex as the title for a picture or a story, or as phrases and short sentences that convey unitary thoughts. In a test we may ask the examinee to list all the things he can think of that are solid, flexible, and colored. He may respond with cloth, leaf, rose petal, hair, skin,

leather and so on. Any response that fulfills the specifications is accepted and counts toward the total score.

The creative person is intelligent, but the general conclusion with respect to intelligence and creativity is that while a certain degree of intelligence is required if one is to be creative, beyond that point being more or less intelligent does not determine the level of a person's creativeness, and the level of intelligence required for creativity, which varies from field to field, is sometimes surprisingly low. What is more important than the level of intelligence as measured by an intelligence test is the effectiveness with which the creative person uses whatever intelligence he has. Generally speaking, creativity may have little to do with intellect. The intelligence test is only an approximation of one small part of the total functioning of the mind. In some cases the individual who scores well on IQ tests may also do well on tasks of creativity, in other cases there may be no relationship.

Guilford (1968) distinguished between two types of thinking, divergent and convergent. In divergent thinking operations, we think in different directions, sometimes searching, sometimes seeking variety. In convergent thinking the information leads to one right answer or to a recognized best or conventional answer.

According to Guilford (1968) the abilities believed to be most relevant for creative thinking are in two categories. One category is 'divergent-production' (DP) abilities. DP abilities pertain to generation of ideas, as in solving a problem, where variety is important. Some DP abilities have been characterized as kinds of fluency, some as kinds of flexibility, and others as elaboration abilities. The varieties of abilities within the DP category depend upon the kind of information with which the person is dealing. This circumstance strongly suggests that creative talent depends upon the media in which the person is working, for example whether he deals with lines and colours, sounds or words, as in the various arts. The other potential source of creative talents is in the category of transformation abilities, which pertain to revising what one experiences or knows, thereby producing new forms and patterns. Readiness to be flexible is a general characteristic of this group of talents, where flexibility leads to reinterpretations and reorganizations. Again the variety of transformation abilities depends upon the kind of information or media with which the creators deal.

Since the recognition of divergent production abilities, many studies were conducted to probe the relationship of creativity and intelligence. The studies were mainly based on the empirical distinction between them, whether or not they are separate domains.

One of the best known researches that attempted to demonstrate the independence of the 'creativity' and 'intelligence' domains is that by Getzels and Jackson (1962). These writers used as their sample, students in a private Chicago School who came predominantly from the middle class and professional homes and whose average IQ was 132. They then compared two contrasting groups: the 'high-lows', were those who came in the top 20 percent on divergent or creativity tests, but were not in the top 20 percent for IQ ('high creative's), and the 'low-highs', were those

who were in the top 20 percent for IQ, but not in divergent or creative thinking (high IQs). They also correlated the creativity measures among themselves and with IQ scores, using the whole of their sample for this. The correlations between single divergent tests and IQ averaged only 0.26 for the boys but the correlations among divergent tests themselves were not much higher, averaging 0.28.

This study has been severely criticized with some justification because in the first place their whole sample was so atypical and because they then chose for detailed investigation a minority of extreme cases, leaving out of account the majority who would, for instance, include the interesting group of 'high-highs'. It is difficult to remember at times that the group 'low' on intelligence had an average IQ of 127.

Torrance (1962) repeated much of Getzels and Jackson's work in several relatively non-selective schools and found that a valid distinction exists between the cognitive function designated 'creativity' and the traditional concept of general intelligence.

Hassan and Butcher (1968) repeated part of Getzels and Jackson's study in Scotland on an unselected population. The sample consisted of 175 girls. They found considerably higher correlations between divergent tests and IQ and so came to the conclusion that divergent tests are hardly distinguishable from convergent ones. However, many investigators used factors on which divergent tests clustered and were separable from the convergent thinking factor (e.g., Cropley, 1966; Vernon, 1967; Dacey, Madaus and Allen, 1969). At the same time they all noted significant correlations between divergent and convergent tests and did not consider that the two factors were completely independent of one another.

Wallach and Kogan (1965) originated an invigoratingly novel approach to this question. Starting out from admitted disappointment with the generally established level of correlations between convergent and divergent tests they made the suggestion that this may have been due to the test-like atmosphere and pressure under which these measures were always administered. They, therefore, removed the evaluative atmosphere and time pressure of school achievement and IQ tests from the situation, disguised their tests as 'games' and had the normal class-teacher give them during ordinary lesson time. (They were tests of ideational fluency and of uniqueness of ideas). The results were striking: the average correlation amongst the divergent tests was 0.4, amongst the intelligence and attainment measures 0.5, and the average correlation between these two sets of measures was 0.1. In this way they, too, established a divergent-thinking dimension to their satisfaction.

Another study was carried out by Ansari (1976) to study the relationship between creativity, intelligence and academic achievement. Fourty-four under-graduate students of Psychology were given an abbreviated version of the Wallach-Kogan creativity test, AH5 Verbal Part and Standard Progressive Matrices. The achievement tests were analysed in terms of Bloom's categories of cognitives and were divided into two groups: Lower Cognitive Objectives (Knowledge and Comprehension) and Higher Cognitive Objectives (Application, Analysis, Synthesis

and Evaluation). The results supported the hypothesis that the measures of intelligence and creativity while internally homogenous, are unrelated to each other. It was also found that while intelligence is equally related to the achievement of Lower and Higher Cognitive Objectives, the creativity measures show significantly higher correlation with achievement tests of Higher Cognitive Objectives.

In Pakistan, Riaz (1979) conducted a study on the intelligence-creativity distinction and their relationship with academic achievement. 144 students, 97 boys and 47 girls of class 8 were given Ravens' Standard Progressive Matrices and an abridged version of the Wallach-Kogan creativity test. In the creativity test, fluency and originality were scored. Results showed that there is no correlation between intelligence and creativity, both originality and fluency. However, both intelligence and creativity are significantly correlated with measures of academic achievement.

Based on the research evidence, a hypothesis has been put forward that above a certain ability level, say IQ 120, creative capacities no longer depend on any further addition of IQ points and divergent and convergent thinking above this line are therefore essentially independent of each other. In the absence of a certain amount of general intelligence, however, no great creative production can occur either, so in the lower reaches of ability the two modes of thought tend to vary in line with each other. This 'branching tree theory' has been confirmed by some authors (e.g., Yamamoto, 1965; Haddon and Lytton, 1968), but not by others, though it remains a plausible one.

Hudson (1968) suggests that the poor intercorrelations among divergent tests may be explained by the tendency of divergers to be willful, idiosyncratic and fluctuating in the effort they put forth on divergent tasks. Differences between convergers and divergers in matters unconnected with the tests, such as personality or home background, would tend to confirm the reality of the distinction. Overall, although convergent and divergent thinking clearly overlap, the evidence points to the existence of a domain of divergent thinking, distinct from conventional intelligence tests, as shown by differing factors. It is most illuminating, perhaps, to think of them as different styles of thought, as two complementary aspects of intellectual ability broadly conceived.

To conclude, Wallach and Kogan (1965) say, to measure intelligence one should give the test under standard conditions and to measure ideational fluency, one should set up a free, play-like situation without strict time limits or any other form of pressure. Evidence has accumulated, however, that the permissiveness of the situation is not an important factor in differentiating the two kinds of ability. The difference appears whether the ideational fluency scores are obtained from 'tests' or from 'games' and whether or not time limits are imposed.

An attempt has been made to measure ideational fluency by imposing time limits in the present study. This research was undertaken to find out the relationship between ideational fluency and intelligence among academically gifted and average students. The main purpose of this study was firstly, to see the interrelationship within measures of intelligence and creativity or convergent thinking and divergent thinking measures,

and the interrelationship between these measures. And secondly, to see if the two types of measures can distinguish between the students identified as talented and those who are taken as average.

METHOD

Subjects

The total subjects consisted of 111 F. Sc. students belonging to two different groups. The first group was of academically gifted students which consisted of 22 students (8 girls and 14 boys) belonging to different areas of Pakistan and who were identified as 'Talented' students in the President's Talent Farming Scheme. The students selected were the top two scorers in the Matriculation examinations of their respective Boards. Later they were invited to the Talented Science Students' Summer School Program — 1984 at Khanspur. The second group was a comparative group of academically average students. This group consisted of 89 students (36 girls and 53 boys) belonging to three different colleges of Rawalpindi: Asghar Mall College, Gordon College and F.G. College for Women. This group was selected on the basis of their marks in the Matriculation examinations. The students were selected in such a way that their marks yielded a continuum — the talented group can be sequentially compared with this group.

Instruments

Three tests were used for assessment: the Creative Thinking Test and two intelligence tests. The description of these tests are as follows:—

1. The Creative Thinking Test originally developed by Wallach and Kogan (1965) was used as a measure of ideatioanl fluency. Some of the items from the original test have been selected and translated into Urdu. The Urdu version of the test consists of 12 items classified under three sub-parts: each part contains four items. The first subpart contains possible instances of a class concept that is specified in verbal terms. The second part contains alternate uses for a verbally specified object. The last part contains pattern and line meaning which involves visual imagination.

2. Standard Progressive Matrices (SPM) developed by J.C. Ravens (1965) was used as a measure of intelligence. It is a non-verbal itelligence test which consists of 60 items. The test is divided into five sets of twelve items each. These five sets provide five opportunities for grasping the method and five progressive assessments of a person's capacity for intellectual activity.

3. College Qualification Test developed by Psychological Corporation (1955) was also used to measure intelligence. It is a verbal intelligence test which consists of three subtests, Test V, Test N and Test I. the Test V is a word meaning test

containing 75 words. Test N is a mathematical ability test consisting of 50 problems and I is a test of general information which consists of 75 items.

Procedure

The tests were administered in the same order to the students. First the Standard Progressive Matrices was given to the subjects and they were instructed to do the test according to the directions given in the manual.

The second test was the creative thinking test in which the subjects were asked to do a game like task in which they had the freedom to write whatever they could within a limited time. The instructions for the three subparts were different. For the first part, the subjects were asked to write as many things as they could think of. For the second part the subjects were asked to tell all the different ways in which a specified object could be used. For the last part the subjects were asked to make use of their imagination and generate possible meanings or interpretations for each of a number of abstract visual designs. One item was presented at a time and the time limit for each item was five minutes and the total time for the entire test was one hour.

In the end, the College Qualification Test (CQT) was given to the subjects and they were asked to perform the test according to the instructions given in the manual.

RESULTS AND DISCUSSION

The Product Moment Correlation was calculated for the entire data.

The intercorrelations among the Creative Thinking Test items for the sample of academically gifted students are positively significant beyond .05 level. Their sizes vary from .38 to .86 and most of the correlations are around .65. Intercorrelations among the Creative Thinking Test items for the sample of average students are highly significant beyond .05 level. The range of correlations varies from .24 to .75 and most of the correlations are around .45. Similarly, the intercorrelations among the Creative Thinking Test items for both academically gifted and average students are positive and highly significant beyond .01 level and their sizes vary from .43 to .85 and most of the correlations are around .65. Results also indicate that all the 12 items of Creative Thinking Test are strongly and significantly related with each other, which indicates that Creative Thinking Test items are homogenous items.

Table 1 presents the intercorrelations among intelligence tests for the academically gifted group of students.

TABLE 1

Intercorrelations among Intelligence Tests
(Talented group N=22)

		2	3	4	5
1.	Standard Progressive Matrices	.561**	.413*	.438*	.604**
2.	College Qualification Test (Total)		.903**	.845**	.692**
3.	College Qualification (Verbal)			.647**	.436*
4.	College Qualification (Information)				.439*
5.	College Qualification (Numerical)				

** $p<.01$ one tailed test.
* $p<.05$

Table I shows that the relationships among intelligence tests are positive and are highly significant. The average correlation among these tests is .60.

Table 2 presents the intercorrelations among intelligence tests for average students.

TABLE 2

Intercorrelations among Intelligence Tests
(Average group N=89)

		2	3	4	5
1.	Standard Progressive Matrices	.302**	.219*	.221*	.256**
2.	College Qualification Test (Total)		.843**	.793**	.651**
3.	College Qualification (Verbal)			.478**	.421**
4.	College Qualification (Information)				.269**
5.	College Qualification (Numerical)				

** p<.01 one tailed test.
* p<.05

Table 2 shows that Standard Progressive Matrices is positively and significantly related with all the subtests of College Qualification Test. The average correlation among these tests is .45.

Table 3 presents the intercorrelations among intelligence tests for both academically gifted and average students.

TABLE 3

Intercorrelations among Intelligence Tests
(Combined group N=111)

		2	3	4	5
1.	Standard Progressive Matrices	.394**	.298**	.240**	.338**
2.	College Qualification Test (Total)		.854**	.726**	.567**
3.	College Qualification (Verbal)			.416**	.408**
4.	College Qualification (Information)				.027
5.	College Qualification (Numerical)				

** p<.01 one tailed test.

The results on Table 3 show that the Standard Progressive Matrices is positively and significantly related with all the other tests. But there is no significant relationship between two parts of the College Qualification Test, Information and Numerical. The average correlation among these tests is .43.

Tables 1, 2 and 3 show that the Standard Progressive Matrices (SPM) and College Qualification Tests (CQT) are positively and significantly related with each other, obviously because both are intelligence tests; with the difference that one is a non-verbal and the other is a verbal intelligence test.

Table 4 presents the correlations of Total Fluency on the Creative Thinking Test (CTT) with intelligence tests for academically gifted students.

TABLE 4

Correlations of Total Fluency with Intelligence Tests
(Talented group N=22)

	CTT Total	CTT Class concept	CTT Alternate uses	CTT Visual imagination
SPM	.421*	.414*	.353*	.419*
CQT (Total)	.444*	.492**	.330	.419*
CQT (Verbal)	.300	.362*	.218	.257
CQT (Information)	.488*	.559**	.404*	.405*
CQT (Numerical)	.350*	.313	.221	.448*

** $p<.01$ one tailed test.
* $p<.05$

Table 4 show that the relationships of total fluency with various intelligence tests are positive but moderately low. The average correlation of total fluency with intelligence tests is .38.

Table 5 presents the correlations of Total Fluency on the Creative Thinking Test (CTT) with various intelligence tests for the group of average students.

TABLE 5

Correlations of Total Fluency with Intelligence Tests
(Average group N=89)

	CTT Total	CTT Class concept	CTT Alternate uses	CTT Visual imagination
SPM	-.188*	-.161	-.214*	-.106
CQT (Total)	.088	.008	.072	.217*

CQT (Verbal)	.077	–.019	.101	.200*
CQT (Information)	.059	.016	.082	.086
CQT (Numerical)	.090	.031	–.027	.292**

** $p<.01$ one tailed test.
* $p<.05$

The above table shows that Total Fluency is negatively correlated with Standard Progressive Matrices. There is a low correlation between Total Fluency: Class Concept and Alternate Uses, and the College Qualification Test; whereas, Total Fluency: Visual Imagination is significantly related with the College Qualification Test.

Table 6 presents the correlations of Total Fluency on the Creative Thinking Test (CTT) with intelligence tests for both academically gifted and average students.

TABLE 6

Correlations of Total Fluency with Intelligence Tests
(Combined group N=111)

	CTT Total	CTT Class concept	CTT Alternate uses	CTT Visual imagination
SPM	.055	.025	.024	.118
CQT (Total)	.123	.082	.088	.190*
CQT (Verbal)	.172*	.123	.158*	.217**
CQT (Information)	–.201*	–.183*	–.196*	–.181*
CQT (Numerical)	.399**	.321**	.310**	.506**

** $p<.01$ one tailed test.
* $p<.05$

Table 6 shows that total fluency has a low correlation with Standard Progressive Matrices as compared to College Qualification Test. Total fluency is significantly related with College Qualification Test, with the Information part it is negatively

correlated, and with the Numerical part it has positive and high correlation, significant at .01 level.

Tables 4, 5, and 6 show that there are low correlations among the Creative Thinking Test and intelligence test. These results are in congruence with previous research findings that there is some correlation between these abilities but not much.

Table 7 presents the comparison between academically gifted and average students on Creative Thinking and Intelligence Tests.

TABLE 7

Comparison of Talented and Average Groups

Tests	Talented (N=22) Mean	SD	Average (N=89) Mean	SD	t
SPM	46.14	10.43	45.98	6.25	.091
CQT (Total)	69.86	24.32	73.15	16.66	.741
CQT (Verbal)	19.86	13.03	18.44	7.56	.663
CQT (Information)	20.91	8.97	32.83	7.95.	6.07**
CQT (Numerical)	29.04	7.27	21.93	5.75	4.86**
CTT (Total)	247.91	71.06	147.75	39.84	8.74**
CTT (Class concept)	118.14	27.04	77.68	22.63	7.14**
CTT (Alternate uses)	67.36	22.95	36.83	12.65	8.33**
CTT (Visual Imagination)	62.41	25.39	33.21	11.02	8.10**

** $p<.01$ df=109 one tailed test.

The above table shows that the intelligence tests did not discriminate well between academically gifted and average students, whereas, the Creative Thinking Test is discriminated between the two groups.

Results shown in earlier tables indicated that the performance of the academically gifted students was superior to that of the average students. The intercorrelations among intelligence tests for the academically gifted students were quite high as compared to average students; similarly, the correlations of total fluency with intelligence tests for this group were again better than the average group.

CONCLUSIONS

In the light of these results one can conclude that there is a positive significant relationship among intelligence tests but a moderately low relationship with the Creative Thinking Test. This is theoretically in line with some of the researches done in the West. It can also be concluded that intelligence tests did not discriminate well between the academically gifted and the average group of students, whereas the Creative Thinking Test did relatively better. This leads to a theoretically very convincing proposition that academically gifted students are superior divergers as compared to average students and this accounts for their superior academic performance.

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SELF-PERCEIVED VARIABLE PATTERNS IN THE CLOSEST FRIENDSHIP RELATIONAL NETWORK OF BOTH, ONE, OR NEITHER SEX AMONG NONCONFINED AGED MALES

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ABSTRACT

Studies suggest that the elderly need close, intimate relationships to enhance the quality of their lives. These relationships can be found in closest friendships. The present study attempted to determine self-perceived variable patterns in the closest friendship relational network of both, one, or neither sex among nonconfined aged males. It examined the most frequently perceived variable patterns with reference to the particular structural friendship unit. Results indicated similarities and/or differences among the groups.

The loss of friends, associates, and/or contemporaries is unaviodable as one ages. Friends die or move, and the elderly individual finds himself alone and unable to cultivate the kinds of intimate relationships so necessary for him. Just when friendship becomes most important in his life, friendship opportunities are fewer than ever before (Blau, 1973; Cavan, 1949). Retirement from work, especially for males, can have a devastating affect on their lives regarding intimate, social relationships. The companionship of associates, colleagues, and contemporaries, long taken for granted, is suddenly removed. Further interaction with these peers can be severely restricted and limited (Havighurst and Albrecht, 1953).

Over one-fourth of all people, aged 65 or over, live alone, and this figure increases to over one-half as socioeconomic class decreases to the lower-classes. Isolation, loneliness, and withdrawal are major individual and social problems with these individuals (Cottrell, 1974; Loether, 1975). Many elderly people do not know how or they do not want to break out of their isolation and develop friendships. They live in single rooms or small apartments, have few if any visitors, and perform only necessary outside errands (Cavan, 1949).

The elderly need meaningful interaction and intimate relationships in order to maximize the quality of their lives (Moriwaki, 1973). Furthermore, there is no substitute for social interaction. Activities that do not involve other people are likely to fail as sources of basic satisfaction and gratification (Graney, 1975). Tobin and

Neugarten (1961) and Peretti and Wilson (1976) found social interaction and social activity significant in satisfaction of life among retirees. In the latter study, being alone, with few interpersonal relationships not only decreased satisfaction of life for the retirees, but it also greatly increased the proportion of contemplated suicide among the subjects.

Friendship is an effective buffer against demoralization in the elderly produced by social losses of widowhood, retirement, and diminished social participation (Lowenthal and Haven, 1968). Older people need opportunities to meet and to associate with members of their own generation. Evidence suggests that peer friendships determine morale in old age (Blau, 1961; 1973). Lack of friendships can lower morale, and increase demoralization and psychological problems (Lowenthal, 1964; Spencer and Dorr, 1975).

The present study attempted to determine self-perceived variable patterns in the closest friendship relational network of *both, one,* or *neither* sex among nonconfined aged males. It examined the most frequently perceived variable patterns with reference to the particular structural friendship unit.

METHOD

Subjects:

One-hundred sixteen retired males, ranging in age from 66 to 74 yrs. old, were selected as subjects. All of the men were either single or widowed, and they were living in nonconfined quarters. They were randomly selected from elderly individuals frequenting Lincoln Park, Chicago, Illinois,.

Materials:

A closest friendship diagram consisted of a paper on which the *Ss* were asked to diagram their closest friend(s). Lines were drawn between ego and other(s) and the sex of each person was noted. The technique used a modified sociogram (see Peretti, 1976; 1977) requiring *Ss* and friend(s) to be presented as a group structure.

An open-ended questionnaire was used to determine which self-perceived variable patterns emerged in the closest friendship relational network of both, one, or neither sex for the *Ss*. *Ss* wrote responses regarding their perceptions of ideas, attitudes, and behaviors associated with the closest friendship diagram. For those men having a closest friendship with *neither* sex, the responses were based on their self-perception related to an absence of closest friendships.

Operational Definitions included:

Closest friend:

One with whom you have your most intimate, personal contact. He (she) is one in whom you confide your most private and personal affairs.

Nonconfined:

Lacking in restrictions, limitations, and/or restraints.

PROCEDURE

An attempt was made to find a random sample of single or widowed, aged males not confined to retirement, rest, or nursing homes and the like. This end was achieved by selecting *Ss* frequenting Lincoln Park during the daylight hours. The males were approached as they sat on the park's benches, strolled in the different park areas, or as they watched or observed activities, such as chess, checkers, card-playing, boating etc., in the designated park areas for such functions.

Potential *Ss* were personally contacted and asked if they would like to participate in the study. They were told that the study centered around closest friendships of elderly males, their names would not be used to insure anonymity of the respondents, and that all data gathered would be confidential.

Men volunteering to participate in the study first completed the closest friendship diagram. The *Ss* had no time limit for completion of this instrument, and they could ask questions of the researcher while working on the form. *Ss* with closest friendships of *neither* sex did not have to complete this form. After completion of the initial instrument, the men were asked to comlete the open-ended instrument regarding their perceptions of ideas, attitudes, and behaviors associated with the friend(s) of the closest friendship diagram. *Ss* with closest friendships of *neither* sex gave responses based on the absence of such friendships in their present lives. No time limit was given for the questionnaire's completion.

RESULTS

Self-perceived variable patterns in the closest friendship relational network of *both* sexes among aged males are shown in Table 1. Sixty-eight of the *Ss* (59% of the respondents) did state having at least one male and one female closest friend. The total number of closest friends for the *Ss* in this structural friendship unit was one-hundred twelve individuals of the *same* sex (mean of 1.6 per *S*) and seventy-five persons of the *opposite sex (mean of 1.1 per S*). The basic structural network was comprised of either the dyadic or double dyadic network.

TABLE 1

SELF-PERCEIVED VARIABLE PATTERNS IN THE CLOSEST FRIENDSHIP RELATIONAL NETWORK OF *BOTH* SEXES AMONG AGED MALES

SUBJECTS (N = 68)					
RELATIONAL NETWORK OF *BOTH* SEXES					
SAME SEX (N=68)			*OPPOSITE* SEX (N=68)		
SELF-PERCEIVED VARIABLE PATTERNS					
CRITERIA	N	(%)	CRITERIA	N	(%)
Loneliness	59	(87)	Sociability	57	(84)
Companionship	48	(71)	Interested	43	(63)
Social Identity	44	(65)	Loneliness	38	(56)
Self-Image	29	(43)	Sexual Relations	17	(25)
Common Experiences	26	(38)	Feel Younger	12	(18)

The self-perceived variable patterns for the relational network among these *Ss* with members of the *same* sex included loneliness, companionship, social identity, self-image, and common experiences, while those with members of the *opposite* sex were sociability, interested, loneliness, sexual relations, and feel younger. For the former network, the most frequently perceived variable was loneliness, and for the latter network, the most frequently perceived variable was sociability.

Table 2 shows the self-perceived variable patterns in the closest friendship relational network of either *one* sex or of *neither* sex among aged males. The latter group of *Ss* stated that they had '*no* closest friends'. Forty-eight *Ss* (41% of the respondents) were included in these categories. Reading from left to right in the Table, a total of sixteen men had twenty-one *same* sex closest friends (mean of 1.4 per *S*); seven males had nine of the *opposite* sex (mean of 1.3 per *s*), while twenty-five *Ss* stated they had closest friends of *neither* sex or *no* closest friends. The foremost groups of *Ss* was composed of 14% of the total number of *Ss*, the middle group of 6%, while the lattermost group of *Ss* (those with *no* closest friends) was comprised of 22% of the total *S* number. Note the fact that 22% of the aged males maintained that they did not have any closest friend. Of the four possible response areas: both sexes, one sex (either same

or opposite), and neither sex, the lattermost classification had the second most frequently given relational network.

TABLE 2

SELF-PERCEIVED VARIABLE PATTERNS IN THE CLOSEST FRIENDSHIP RELATIONAL NETWORK OF EITHER *ONE* SEX OR OF *NEITHER* SEX AMONG AGED MALES

SUBJECTS (N = 48)								
RELATIONAL NETWORK OF EITHER *ONE* SEX OR OF *NEITHER SEX*								
SAME SEX (N=16)			*OPPOSITE* SEX (N=7)			*NEITHER* SEX (N=25)		
SELF-PERCEIVED VARIABLE PATTERNS								
CRITERIA	N	(%)	CRITERIA	N	(%)	CRITERIA	N	(%)
Loneliness	14	(88)	Companionship	6	(86)	Suspicious	22	(88)
Confidant	13	(81)	Sociability	5	(71)	Apprehensive	20	(80)
Common Interests	11	(69)	Mutual Dependency	4	(57)	Indifferent	17	(68)
Availability	9	(56)	Loneliness	4	(57)	Depressive	16	(64)
Companionship	8	(50)	Feel Younger	2	(29)	Social Withdrawal	11	(44)

The self-perceived variable patterns for the relational network among those respondents with members of the *same* sex only were loneliness, confidant, common interests, availability, and companionship. For *Ss* with members of the *opposite* sex only, the variable pattern was companionship, sociability, mutual dependency, loneliness, and feel younger, while for Ss with a relational network of *neither* sex, the variables included suspicious, apprehensive, indifferent, depressive, and social withdrawal.

CONCLUSIONS AND DISCUSSION

Based on the data collected, self-perceived variable patterns in the closest friendship relational network of both, one, or neither sex among nonconfined aged males were determined. The data suggested the most frequently perceived variable patterns with reference to particular structural friendship units.

The most frequently stated closest friendship relational unit was that of *both* sexes. Self-perceived variable patterns of *Ss* were found to be different within these units by *same* or *opposite* sex of the closest friend. With reference to the unit with *same* sex (males) members, *Ss* maintained loneliness was the most important and most frequently given (87%) variable in the development and maintainance of the closest friendship. Alone, the men felt useless and isolated. They sought others with whom they might be active and with whom they might develop different levels of social and personal intimacy. The *Ss* perceived other men as companions in their life situation. These companions would fulfill social functions in the daily activities of the *Ss*, particularly those centering on leisure time. Often, the *Ss* stated *same* sex closest friends, when the relational unit did include *both* sexes, were their peers of the same generation and at a similar stage in life. Within this framework, each individual was more likely to develop a comparable social identity. As each of the men had various similar interests and experiences in common, especially in areas dealing with occupational pursuits, the closest friendship was perceived as a chief source of his self-image. Within the friendship unit, the *Ss'* common experiences with *same* sex friends tended to increase reciprocal sharing of ideas, attitudes, and intimacies, as well as increase the ease of communication between the participants.

Sociability was the most frequently expressed (84%) self-perceived variable, in the relational network of *both* sexes, with regard to the unit with *opposite* sex (female) members. The men perceived the women as individuals allowing them to increase their range of social activity. With the female, they could feel more free to accept social invitations from elderly couples. Some of their friends and acquaintances were married, and the men stated that having a female closest friend made them feel better around such persons. Many of the *Ss* said they were interested in members of the *opposite* sex for various reasons, such as companionship, someone to go out with, someone to eat with, someone to talk to, and someone to engage in sexual activity. Loneliness, as the third most frequently stated variable, was perceived by the *Ss* as averted with *opposite* sex closest friends by increasing the variety of actions and interactions for the men. The men said they had a need for different kinds and levels of

interaction to help avert loneliness and isolation, and that the women aided them in satisfying such needs. Interest and activity in sex were frequently expressed by the males, and the females were said to be useful as outlets for these concerns. The abilities of psychologically, physiologically, and socially "feeling younger" were expressed by the respondents (see Table 1) due to the female member of the relational network of *both* sexes. A closest friendship with the woman was often said to increase the satisfaction and quality of life for the male respondents. Furthermore, they stated that such a relationship enhanced a positive sense of well-being for them.

When the relational network of the closest friendship unit was composed of only *one* sex (either *same* or *opposite*, see Table 2), some of the same self-perceived variables present in the unit composed of *both* sexes were mentioned. In these instances, some of the responses were similar, although some differed. Those differing will be considered when applicable.

Regarding the *same* sex responses, in the *one* sex relational network, loneliness was the most frequently expressed self-perceived variable (88% of the responses). *Ss* often found their days becoming empty, and they sought friends to help relieve their boredom. They felt the homosocial relationship had somewhat greater flexibility in the range of possible activities in which the friendship participants might engage. The *same* sex was more likely than an *opposite* sex friend to be a confidant for the *Ss*. Respondents had the need and wanted to confide in someone and talk to him about themselves and/or their problems. Male closest friends seemed to fulfill this role. Having perceived common interests and experiences, the *Ss* stated *same* sex closest friends understood them and could relate to their own problems better than women. Availability as a self-perceived variable in the homosocial relational network was mentioned as the respondents maintained that there were generally more men and less women available in their social environments. Elderly males seemed to go outside the apartment, house, or other dwelling more frequently than did the elderly females, and this availability tended to increase the probability of friendship formation. Within the *same* sex unit, companionship as a variable was perceived as the physical presence of others being a vital source of social stimulation. It was also perceived as a necessary factor in forestalling demoralization in old age.

The least frequently stated closest friendship relational unit was that of only *one* sex, when the sex was *opposite* (female) for the closest friend. Companionship, the most frequently stated self-perceived variable in the heterosocial unit, was often believed to result from mutual or one-way attraction. When mutual, the *Ss* considered that each member of the closest friendship unit was attracted to each other member, however, when one-way attraction occurred, the attraction was not reciprocal, but the friendship continued to endure. Female closest friends, for the *Ss*, were said to increase their range of acquaintances as well as to allow them to cultivate new contacts. Mutual dependency in the *one* sex relationship with an *opposite* sex member was perceived with regard to the fulfillment of mutual needs and the solution of mutual problems. The *Ss* also stated the mutual dependency associated with psychological and emotional support. Some of the respondents believed they felt loneliness without the closest friendship of a female. For them, the heterosocial friendship alleviated feelings

of loneliness, isolation, and emptiness in their lives. Within the *opposite* sex unit, feel younger as a variable was perceived associated with going out, dating, and having sexual relations with the woman. Each of these behaviors was said to be related to earlier periods of life for the *Ss*, and through cognitive connections each one was positively reinforcing in motivating the *Ss* to react and respond in similar ways.

Suspiciousness was the most frequently expressed (88%) self-perceived variable in the relationship network of *neither* sex. The *Ss* stated they had *no* closest friends because they were suspicious and distrustful of others. *Ss* watched others closely for cues to confirm their suspicion and distrust. Their vigilance and guarded behaviors around potential closest friends was generally accompanied by little or no humor, spontaneity, or positive feelings making the social situation uneasy for all members. Apprehensiveness, for these *Ss* tended to arise in group structures as the men stated they were convinced that there was a specific adversary or group of adversaries within these units. Aged males in the relational network of *neither* sex maintained that they were generally indifferent toward any form of friendship formation. Many responded their independence and lack of a need for close, personal relationships. For some, intimacy was said to be an intolerable discomfort. The lack of human companionship and the stresses of aging would seem enough to lead the men to develop closest friendships, however, the males of this group saw the friendship as being even more depressing for them. Some of the criteria of friendship units perceived as leading to states of depression for the *Ss* were senility, apathy, sickness, sympathy, dependency, reliability, and money. Within the *neither* sex unit, withdrawal as a variable was perceived as actively shunning interpersonal relationships. In a social setting, the *Ss* would frequently act as if they were alone and the others were not present.

In the closest friendship relational network of *both* sexes, the aged males had a mean of 1.6 male and a mean of 1.1 female friends. When the closest friendship relational network included friends of only *one* sex, then the men had a mean of 1.4 male and a mean of 1.3 female friends. It might be concluded from these data that aged males, even when the individuals are engaged in closest friendship relations, have relatively very few people with whom they engage in intimate, personal contact. Moreover, there were 22% of the *Ss* maintaining that they had *no* closest friends. The self-perceived variables in the closest friendship relational network for these men suggested a negative cognitive set. Within this frame of reference, friendships might become frustrating and grating for them perpetuating superficiality in the relationships and barring true intimacy.

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SOCIO-ECONOMIC FACTORS AS DETERMINANTS OF REMAINERS AND TERMINATORS IN PSYCHOTHERAPY

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ABSTRACT

In the present investigation it was hypothesized that socio-economic factors are determinants of Remainers and Terminators in psychotherapy i.e. financial burden, socio-economic status and education level.

In order to test these hypotheses a questionnaire was prepared and given to 11 student therapists of the Institute of Clinical Psychology, University of Karachi. 150 cases treated by these therapists were studied. Out of them 75 were Remainers and 75 were Terminators. The factors under study were assessed through the ratings obtained from their respective therapists.

Chi-Square test of independence was applied to the variable of socio-economic status and education level. Whereas the variable of financial burden was statistically treated by t-test.

It was found that clients who belong to the higher socio-economic level and are highly educated, tend to remain in psychotherapy. Whereas clients who find psychotherapy as a financial burden tend to terminate psychotherapy.

INTRODUCTION

There has been a recognition that therapy must be tailored to the patient, his problems and his needs, rather than the reverse (Goldstein & Stein, 1976). However, in Pakistan where there are few mental health professionals and even fewer practising psychotherapy, the importance of identifying those individuals who can benefit from

available psychotherapy services is imperative. An important problem in our context is, therefore, the problem of discontinuing psychotherapy without the advice of the therapist or, in other words, premature termination.

These premature terminators or dropouts from therapy constitute a large percentage of those who begin psychotherapy and several studies have been carried out in developed countries to evaluate this problem. To evaluate some of them, Haddock and Mensh (1957) studied two University student health services and one VA Mental Hygiene Clinic, and the following findings were secured: about two thirds of the patients were seen fewer than 5 hours, and only one patient in 20 was seen for more than 20 hours. Furthermore, more than one-half of the veterans and one-third of the students terminated treatment on their own without discussing it with the therapist.

In another study of 400 clinic patients, 45% were seen for less than five interviews, with a majority simply discontinuing treatment (Gabby and Leavitt, 1970).

Certain other studies in three urban mental health centers have also revealed that 37% to 45% of adult outpatients terminate psychotherapy after the first or second session (Fiester and Rudestam, 1975).

Premature self termination of clients from counseling has been investigated into in three recent studies (Betz and Shullman, 1979; Epperson, 1981; Krauskopf, Baumgarden and Mandracchia, 1981) which focussed on a specific subset of premature terminations at university counseling centers. This subset, early premature termination (EPT's), included clients who failed to return for scheduled counseling sessions after their initial contact with the counseling center e.g. intake interview or initial counseling session when intake procedures were not used. The results of these studies indicated that 19% to 25% of the clients failed to return for their next scheduled counseling session after an initial contact with the counseling center. Although not eliminated as a possibility in any of the three studies, client improvement as an explanation of the reported rates of EPT's was seriously questioned on the basis of tangential, but relevant evidence, and because clients classified as EPTs had only the briefest of exposure to counseling (Betz and Shullman, 1979; Epperson, 1981). Given this state of affairs the phenomenon of EPT's at university counseling centers certainly warrants further investigation.

There have also been inconsistences in the results of the above-mentioned investigations of EPT's at university counseling centers. Few variables have been documented as affecting EPT's from counseling, and none has proven to be generalizable to other populations of clients and counselors. Many of the variables investigated in these studies have been demographic in nature. Counselor — gender, for example, has produced a statistically significant, but inconsistent and non-generalizable effect on EPT's from counseling.

On the basis of the above researches, it is apparent that contrary to traditional expectations concerning length of therapy, most clinic clients remain in therapy for only a few interviews. In practically all of the clinics studied in the developed countries, this pattern was viewed as a problem and was not the result of deliberately planned brief therapy. Rather, in most instances, the patient failed to return for a scheduled appointment.

It can be stated with confidence, therefore, that the findings of an unplanned and premature termination from psychotherapy on the part of many clients in traditional clinic settings in other countries has been a reasonably reliable one. The apparent rejection of psychotherapy by a number of those who appear to be in need of it has been a somewhat surprising and perplexing finding.

The present study was undertaken to explore the relationship between certain socioeconomic characteristics of patients and the phenomena of remaining in and terminating therapy. The socioeconomic variables studied as possible correlates of "remainers" and "terminators" were education, financial burden, and socio-economic status.

Socio-economic Status:

One group of variables that has been studied in relation to length of stay in psychotherapy concerns social class. Some investigations have used one of the popular indices of social class such as that of Hollingshead, while others have studied specific components such as education, income, occupation, and the like. Those who have used the former have generally found some relationship between length of stay and social-class index.

In one study only 57.1 percent of lower class patients stayed beyond the fourth interview, whereas 88.9 percent of middle-class patients went beyond the fourth interview (Imber et al., 1955). In another study about 12 percent of the two lower social-class groups, classified according to the Hollingshead classification, remained for over 30 interviews as compared with 42 percent of those in the highest two social-class groups (Cole et al., 1962). Gibby, Stotsky, Hiler, and Miller (1954), using occupational status primarily as a measure of social class, also found that middle-class patients remained in therapy longer than did lower-class patients. Dodd (1971) reported that patients from the upper three social classes on the Hollingshead Index remained longer in treatment than those in the lower two classes, but the finding was not replicated on a smaller sample of 57 patients. Fiester and Rudestam (1975) also found a relationship between social-class status on the Hollingshead Index and premature termination in one clinic but not in a hospital based community health center. In another study no significant relationship between social class and premature termination from therapy was found, but four therapy sessions were used as the criterion of early termination (Albronda, Dean, & Starkweather, 1964).

In a review of the literature, Bakeland and Lundwall (1975) found that in 35 out of 57 investigations (61.4%), that took socio-economic status into account, this variable, whether determined by education, income, or occupational status, was an important guide as to whether the patient would drop out of treatment. In 22 out of the 57 studies (38.6%), socio-economic status was found to be irrelevant.

It is not at all surprising that socio-economic status should be so important in the patient's dropping out of or staying in treatment. First of all, therapists are usually middle class people (Bakeland & Lundwall, 1975). Hence they may only very imperfectly understand many facts of the life of the lower class (class 4, class 5) person, who make up the bulk of hospital and clinic populations in public facilities. Therefore, their values and their implicit (if not explicit) expectations about the patient's life goals and conduct of his treatment may differ greatly from the ideas the patient himself has about such matters. For example, the lower class individual puts much more emphasis on the present than on the future (Gursslin, Hunt and Roach, 1959-60; Hollingshead, 1949; Hyman, 1953; Seward and Marmor, 1956) and is more concrete and task oriented. He is also more apt to have physical as opposed to psychological symptoms and is less psychologically minded (Hollingshead, 1958). Finally, he is more poorly motivated, less patient and less discontented and dissatisfied with himself (Schmidt, Smart and Moss, 1968) than the middle class patient.

Brill and Storrow (1960) attempted to replicate some aspects of Hollingshead and Redlich's (1958) research. They confirmed that patients in the upper social classes applying for therapy at a low-cost psychiatric outpatient clinic were more likely to be

Brill and Storrow (1960) attempted to replicate some aspects of Hollingshead and Redlich's (1958) research. They confirmed that patients in the upper social classes applying for therapy at a low-cost psychiatric outpatient clinic were more likely to be accepted for therapy than were those in the lower class group. Rightly or wrongly, there is a pronounced tendency to view the lower class patients as less suitable for psychotherapy than the upper class patients. In the above study, there are statistically significant relationships between low social class and lower estimated intelligence, less education, a tendency to see the presenting problem as physical rather than emotional, a desire for symptomatic relief vs. overall help, lack of understanding of the therapeutic process, and lack of a desire for psychotherapy. Unrelated to social class were anxiety and amount of obvious secondary gain from the illness.

Baum and Felzer (1964), in a metropolitan psychiatric training center, assigned residents to only lower class patients, and tried to help them to deal constructively with them. The patients' motivation was low; for the most part they were referred to the psychiatry department and they had little availability of fantasy. Therapists were encouraged to meet the patients on their own level, to explain the purpose of psychotherapy and to get dynamic material. Of the 119 patients included in this report, only 35% dropped out before the sixth session.

Albronda, Dean and Starkweather (1964), from another training center with similar clientele, assigned patients to senior medical students and found a similar low dropout rate. Dividing the patients at the median of the social class measure, they did not find the expected difference in remaining or dropping out of therapy, or in improvement as rated by the therapist or his teacher. One difference did appear: self-referrals are more numerous among the relatively higher social class patients. In a study by Gunzburger (1981) on social class and therapeutic outcome, social class was not found to relate to premature termination or therapeutic expectancies. Premature termination was found to relate to psychotherapeutic efficacy ratings of therapists but not to ratings of clients.

Falkin (1979) reviewed literature on patient variables related to dropping out. Among patient demographic variables, only socioeconomic status had been reported

to be consistently related to every aspect of therapy, including dropout rate. The literature also revealed some suggestive data relating dropout rates to the personality characteristics of: expression of and tolerance for anxiety, persistence, hopefulness, a low incidence of impulsivity and anti-social acting out, self-doubts, suggestibility flexibility, psychological mindedness, dependency, verbal fluency, defensiveness and hostility. The variable of the patient's motivation as reported in the literature was vague, poorly defined and had a history of non-replicability. The diagnoses of depression or anxiety reactions were found to be related to staying in treatment. Presenting problems of psychological vs. somatic distress were related to remaining in therapy.

Rapoport (1976) studied lower class patient attitudes and expectations related to dropping out from psychotherapy. They had a sample of 90 class IV and V patients who had applied for treatment to a Mental Hygiene Clinic. The patients were divided into 3 groups of 30. Group one was a non-treatment group, composed of patients who did not return after an intake interview. Group two was a dropout group: six or less therapy sessions. Group three was a remainer group: more than 6 therapy sessions. Attitudes were significantly related to receptivity and to continuation in treatment for all 3 groups, with the remainers having the most positive attitude. Dropouts had a larger discrepancy between initial expectations of treatment and observations of the initial therapy session. The nature of the lower class patient's attitude was found to be more positive than previous studies had indicated. The importance of looking at this lower socio-economic group as composed of individuals with a range of attitudes and expectations, rather than a homogeneous group with negative attitudes and naive expectations, was stressed.

Mollica, and Milic (1986) conducted a follow-up study on 467 patients who were admitted to a community mental health center (CMHS). Subjects were from the lowest social class. Results show that more than half of the lower class subjects were discharged without a treatment assignment. Many lower class subjects, however, gained access to the CMHS psychotherapy unit. Most of these subjects were females, employed and diagnosed as psychoneurotics. It was concluded that the effect of social class on psychiatric care is less complete than Hollingshead and Redlich originally demonstrated.

Another study investigated the relationship between values, social class and duration of psychotherapy, and found a relationship between the interaction of social

class and the discrepancy between patient and therapist values and continuation (Pettit, Pettit and Welkowitz, 1974). The relationship reported between social class variables and continuation in psychotherapy researches done so far in the developed countries thus may be a function of several variables acting independently or in interaction with each other. The attributes and expectations of the client clearly contribute one source of variance to this problem, while the personality and attitudes of the therapist contribute another. These variables, furthermore, may act singly or in combination.

More recently, using more rigorously defined criteria, Berrigan and Garfield (1981) found a significant relationship between socio-economic status (Hollingshead Index) and premature termination. In fact, there was a clear linear relationship between social class and continuation in psychotherapy, with increasing proportions of droputs as social class level decreased. The range was from zero in Class I to 50 percent in Class V. It should also be mentioned that several studies have indicated significant differences between individuals in social classes IV and V (Lorion, 1978; Schubert & Miller, 1980). The largest dropout rates are noted for those in Class V.

A recent study in Great Britain also secured comparable results. Termination of attendance in outpatient clinics was significantly related to lower social class (Weighill, Hodge, & Peck, 1983). Furthermore, in this study as well as the one by Berrigan and Garfield (1981), lower-class patients missed more scheduled appointments.

Client Education:

A related patient variable is educational level. Patients with best prognosis are those who have a high education and, in a corollary fashion, high intelligence. Unfortunately, psychotherapists in the developed countries have not paid attention to the intellectually low functioning patient. Therapists frequently find such individuals unattractive and poor candidates for psychotherapy (Nash, Hoehn — Saric, Battle, Stone, Imber and Frank, 1965).

Bailey, Warshaw and Eichler (1959) report a comparison of patients in one centre assigned for psychotherapy vs psychosomatic treatment. The therapy assignees were younger and higher in educational occupational level. Another factor in this study which was reviewed was the patient's interest in receiving psychotherapy vs receiving

medication. A markedly larger proportion of the younger and more highly educated patients requested psychotherapy, while a very large majority of patients receiving medication alone requested just that.

Education, which is one of the factors in the Hollingshead two-factor index and is highly correlated with social class, has also been evaluated separately. While most studies have reported a positive relationship between education and length of stay (Bailey, et al., 1959; Blackburn et al., 1981, Carpenter & Range, 1983; McNair et al., 1963; Rosenthal & Frank, 1958; Rosenzweig & Folman, 1974; Rubinstein & Lorr, 1956; Sue et al, 1976; Sullivan, et al., 1958), some have not (Garfield & Affleck, 1959; Pope, et al., 1975; Simons et al., 1984; Weissman, et al., 1973). Part of this limited lack of agreement may be due to differences in the samples used, the type of screening employed in selecting patients for psychotherapy, and other variables. Where there are more rigorous standards for acceptance into treatment, the dropout rate tends to be less and the sample biased in favour of better educated clients. Other factors may also play a role. In the study by Weissman et al. (1973), for example, 40 depressed patients received both casework and drugs. The low attrition rate and lack of difference between socioeconomic groups secured may have been influenced by the administration of medication, since it appears that medication may facilitate treatment continuation (Craig & Huffine, 1976; Dodd, 1971). In any event, it does appear that educational level is related to continuation in psychotherapy.

Fraps (1982) has supported the contention that situational and behavioural variables are associated with outpatient psychotherapy attendance. Adults who requested outpatient psychotherapy completed a pre-treatment questionnaire after admission and a post treatment questionnaire immediately after the first therapy session. Questionnaire items concerned the client's situation at the time of the request for treatment (e.g. distance travelled to the clinic, past behaviour in fulfilling commitments, self prediction of session attendance and reaction to the initial interview). Five items were related significantly to continuation in two separate subject samples i.e. sex (females, longer stay), education (higher, longer stay), occupation (higher, longer stay), involvement in organization activities (more active, longer stay), distance travelled to the clinic (greater distance, shorter stay), and ease in getting to clinic (more difficult, shorter stay).

Since psychotherapy is a relatively new treatment technique in our culture, we cannot afford to waste time and professional manpower. Keeping this under

consideration the author has framed the following hypotheses to screen out patients who have a greater chance of remaining in and benefiting from psychotherapy and those who are more likely to terminate prematurely.

Hypothesis No. 1: If coming for psychotherapy involves a greater financial burden, then there will be a greater likelihood of termination.

Hypothesis No. 2: If patients belong to the higher socio-economic level, then they will remain longer in psychotherapy.

Hypothesis No. 3: If patients are educated, then they will remain longer in psychotherapy.

METHOD

Adults who started individual psychotherapy in the Institute of Clinical Psychology, University of Karachi, Karachi, served as subjects. These patients were registered for psychotherapy from January 1985 to December 1986.

A total of 150 patients were selected for the study which included 75 remainers and 75 terminators. This sample consisted of 88 males and 62 females with a combiend mean age of 33.6 years (S.D.=14.8). As a total group, the patients were heterogenous with respect to demographic characteristics: 51.6% were married, 18.3% were divorced or widowed and 30.1% had never been married; and diagnostically the patients represented a broad range of psychological diagnoses.

There were 11 student therapists who were requested to provide information about their respective patients.

This information was collected on the basis of a questionnaire which was prepared in consultation with an experienced clinical psychologist alongwith several Ph.D. candidates of Clinical Psychology. These therapists were requested to fill in the questionnaires provided to them by the author regarding the details of their respective patients after they had diagnosed the patients and before starting the first psychotherapy session.

Operational Definitions of Various Variables:

a. The *Remainer* cases are defined as those cases who continue to remain in psychotherapy for at least 30 sessions and / or are successfully terminated on the recommendation of the Director of the Institute.

   The *Terminator* cases are those cases who leave psychotherapy without the advice of the therapist and those who terminate before 10 sessions of psychotherapy.

b. *Occupation* was defined according to Hollingshead & Redlich's scales.

c. *Income* was defined as the total montly income of al the earning members of the patient's family.

d. *Financial Burden* was defined as the percentage of fees, charged per session from the patient, out of income.

e. *Socio-economic* Status was defined according to Hollingshead and Redlich's 2 factor index of social position.

f. *Education* was defined on a 7 point rating scale as follows:

   1. Illiterate.
   2. Elementary.
   3. Middle.
   4. High.
   5. Intermediate.
   6. Graduate.
   7. Postgraduate.

A chi square test of independence was computed between the actual frequency of terminators and remainers for the other two variables except the variable of financial burden on which a t-test of 2 independent samples was applied because of the continuous data available. In those variables where chi square was applicable, the expected overall frequency based on the frequency of remainers and termintors in the total sample population was calculated.

Chi square was computed for each column in which there was significant difference between the expected frequency and observed frequency within the dependent variables.

RESULTS

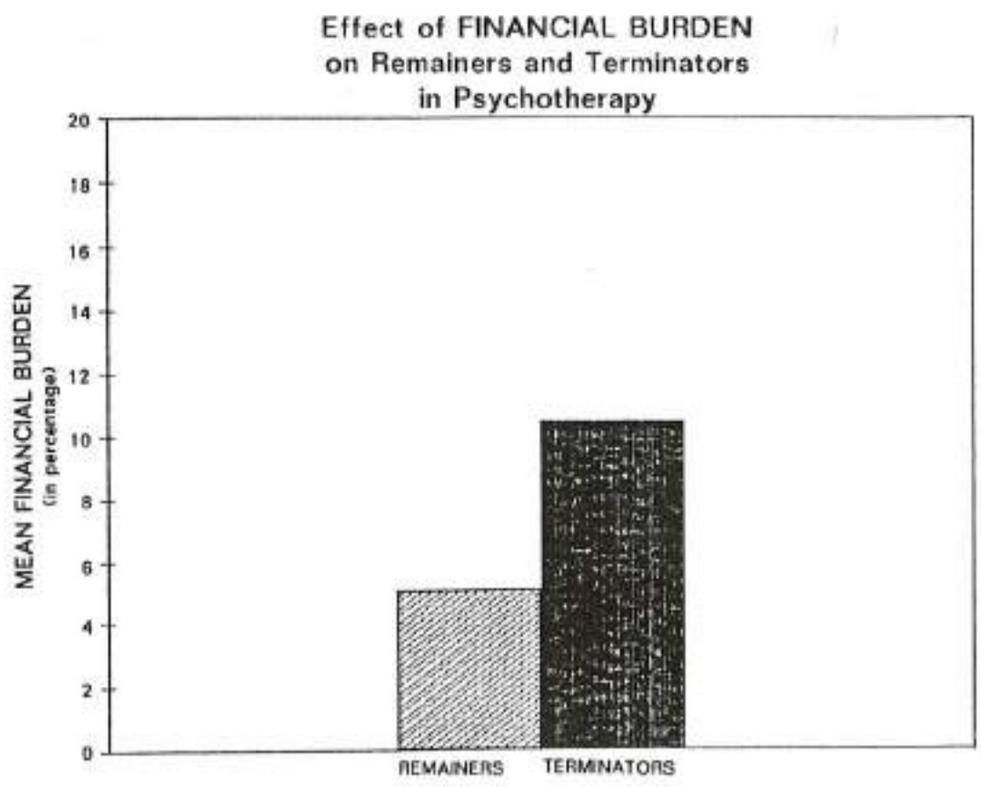
The overall dropout or premature termination rate of the patients who were registered at the Institute of Clinical Psychology, University of Karachi, Karachi, from January 1985 to December 1986 was 40.32%. This is generally consistent with the literature obtained from the developed countries. Eiduson (1968), in a review of this problem, concluded that 30% to 65% of all patients are dropouts in facilities representing every kind of psychiatric service.

TABLE 1

THE EFFECT OF FINANCIAL BURDEN ON REMAINING AND TERMINATING IN PSYCHOTHERAPY

Sample	Remainer	Terminator
N	75	75
M	5.1 %	10.5 %
S.D.	3.384	4.654
t	8.18	
df	148	
P	< 0.001	

GRAPH A



The results of the statistical analysis for the first hypothesis are shown in Table No. 1 and Graph A. Table No. 1 indicates that the 't' obtained is 8.18, df=148, $p<.001$ level which points to the fact that financial burden is a powerful predictor of early termination. Those patients for whom psychotherapy involves a greater financial burden are significantly more likely to be terminators. Graph A highlights the difference in mean financial burden for remainers (5.1%) and terminators (10.5%).

TABLE 2

THE EFFECT OF SOCIO-ECONOMIC STATUS ON
REMAINERS & TERMINATORS IN PSYCHOTHERAPY

Levels	Remainer	Terminator	TOTAL
Higher status 70 — 98	45 (35.5 fe)	26 (35.5 fe)	71
Middle 42 — 69	20 (21.0 fe)	22 (21.0 fe)	42
Lower 14 — 41	10 (18.5 fe)	27 (18.5 fe)	37
TOTAL	75	75	150

$$X^2 = \frac{(Fo - Fe)^2}{Fe}$$

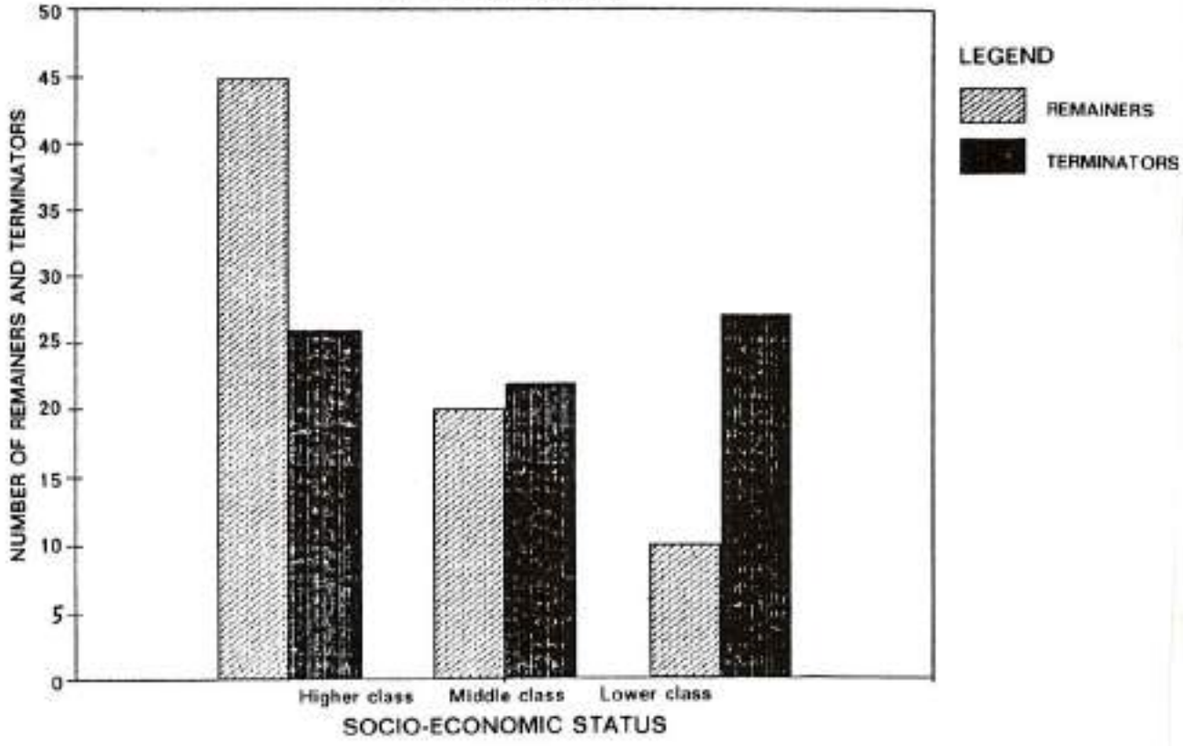
$X^2 = 12.98$ df=2

Significant at 0.01 level

	Max	Min
Education = 7 point scale X 5 =	35	5
Education = 7 point scale X 9 =	63	9
	98	14

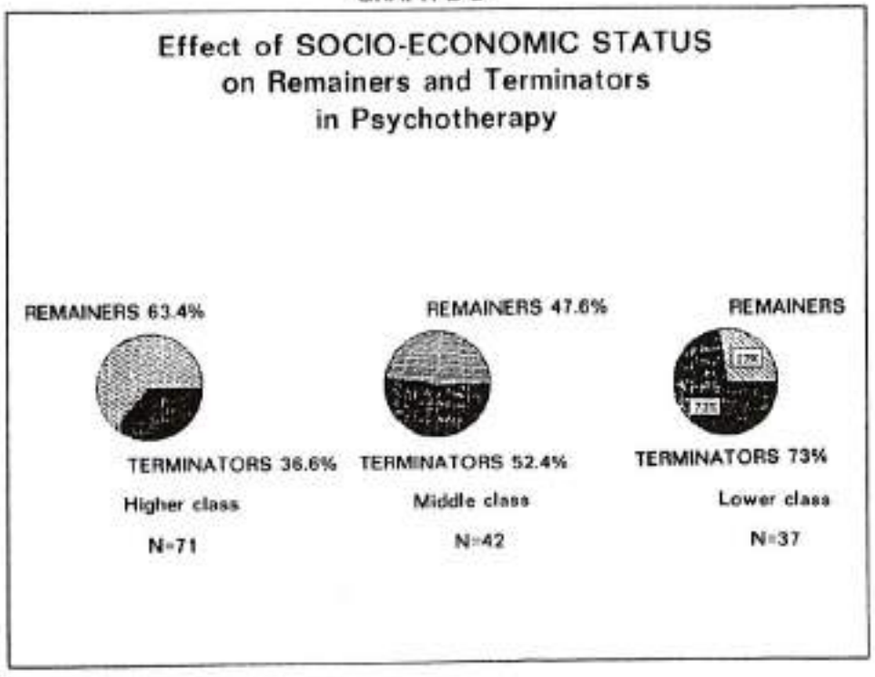
GRAPH B-1

Effect of SOCIO-ECONOMIC STATUS
on Remainers and Terminators
in Psychotherapy



GRAPH B-2

Effect of SOCIO-ECONOMIC STATUS
on Remainers and Terminators
in Psychotherapy



The results of the statistical analysis for the second hypothesis are shown in Table No. 2 and Graph B-1 and B-2. Table No. 2 shows that the chi-square obtained is $X^2=12.98$, df=2, $p<.01$ level. This indicates that socio-economic level is a useful predictor of remaining in psychotherapy. Those patients who belong to a higher socio-economic level are significantly more likely to be remainers. The same results are further highlighted by the use of Graph B-1 and B-2.

TABLE 3

THE EFFECT OF EDUCATION ON REMAINERS & TERMINATORS IN PSYCHOTHERAPY

Levels	Remainer	Terminator	TOTAL
Illiterate	5 (8.0 fe)	11 (8.0 fe)	16
Elementary	5 (10.0 fe)	15 (10.0 fe)	20
Middle	5 (7.5 fe)	10 (7.5 fe)	15
High	12 (10.5 fe)	9 (10.5 fe)	21
Inter	10 (11.0 fe)	12 (11.0 fe)	22
Graduate	23 (17.5 fe)	12 (17.5 fe)	35
Post Graduate	15 (10.5 fe)	6 (10.5 fe)	21
TOTAL	75	75	150

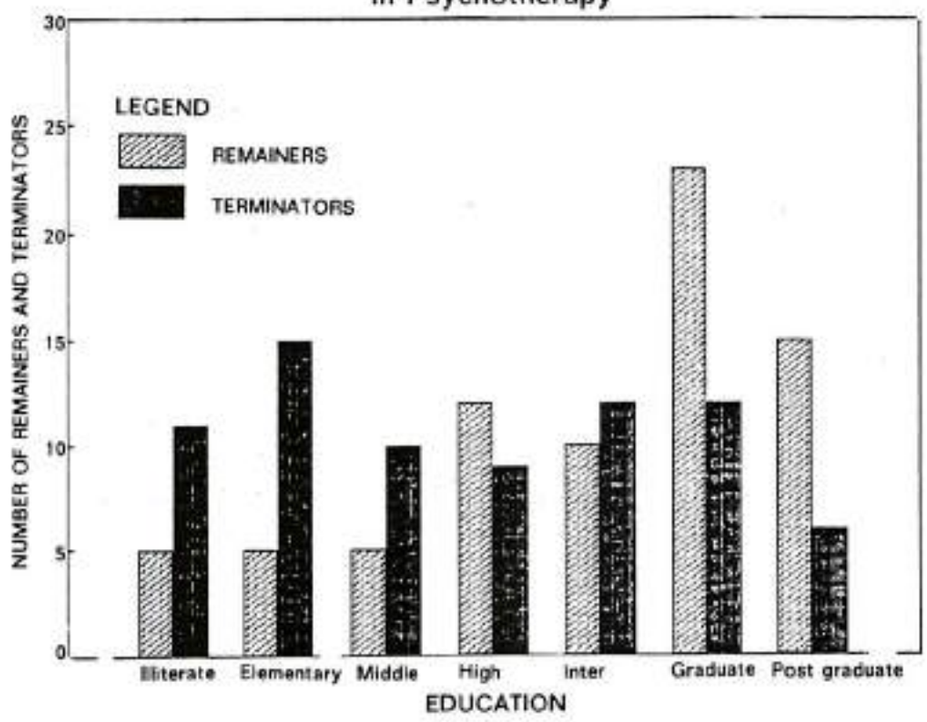
$$X^2 = \frac{(Fo - Fe)^2}{Fe}$$

$X^2 = 16.82$ df=6

Significant at 0.01 level

AHMAD & ISMAIL
GRAPH C

Effect of EDUCATION
on Remainers and Terminators
in Psychotherapy



The results of the statistical analysis for the third hypothesis are shown in Table No. 3 and Graph C. As shown in Table No. 3 the chi-square obtained is $X^2=16.82$, df=6, $p<.01$ level. This is an indication of education being a powerful predictor of early termination. Those patients who are educated are significantly more likely to be remainers. The same results are further highlighted by the use of Graph C.

DISCUSSION

This study was undertaken to investigate some socio-economic factors related to the premature termination of psychotherapy.

Results obtained indicate that all the three factors studied contribute highly towards remaining in and terminating from psychotherapy.

Hypothesis No. 1 states: If coming for psychotherapy involves greater financial burden, then there will be a greater likelihood of termination.

This hypothesis has proved to be highly significant. As seen from Table No. I it is significant at $p<.001$ level. The mean financial burden (in percentage) for the remainers is 5.1% compared to terminators whose mean financial burden is 10.5%. This indicates that financial burden is a very important factor in premature termination of psychotherapy. Pakistan is a developing country and many people cannot afford to pay for a treatment like psychotherapy as it does not give them immediate satisfaction by means of quick relief of symptoms. People may give a large amount of money to a surgeon for a minor surgery because it ensures a comparatively total cure within a short time, but families are reluctant to pay for a mentally sick person for a continuous treatment which does not give immediate relief to the symptoms. So even a smaller amount of money given for psychotherapy becomes a burden.

Secondly, in a family where there are many dependants, a treatment like psychotherapy receives secondary importance because the awareness of psychopathology and psychotherapy as a mode of treatment is lacking due to the lack of education in the country. Last but not the least, it requires some amount of motivation on the part of the family members to bring the patient for treatment especially if the patient is not an earning member. The family may give their precious time to an earning member but a non-earning member is not given much importance and is usually neglected. Such a member is considered to be a liability for the family. Therefore it is quite apparent from the results that the hypothesis concerning financial burden is statistically significant and an important factor in the continuation of psychotherapy.

Hypothesis No. 2 states: If the patients belong to the higher socio-economic level, then they will remain longer in psychotherapy.

According to Table No. 2, it is evident that those patients who belong to the higher socio-economic level remain longer in psychotherapy. This hypothesis has proved to be significant at $p<.01$ level. The socio-economic level was derived by taking into account, both the education and occupation of the patient. This indicates that if people are highly educated and have psychological awareness about the efficacy of psychotherapy they tend to remain longer in it.

As evident from graph B-2 there were 71 patients who were in the category of higher socioeconomic class. Out of them 63.4% were remainers and 36.5% were terminators. In the middle class group there were 42 patients, out of which 47.6% were remainers and 52.4% were terminators. In the lower class group there were 37 patients, out of which 27% were remainers and 73% were terminators.

It is not at all surprising that socio-economic status should be so important in the patients dropping out of or staying in treatment. The higher class patients frequently are found to have some sophisticated understanding of the methods and goals of psychotherapy. Their expectations and anticipations are, therefore, likely to be met. The higher class patients are predisposed towards the acceptance of psychotherapy even before they arrive at the clinic. Their positive attitude will obviously be reinforced if they happen to be suggestible and find an authority figure recommending a course of action to which they already are positively attracted.

Lower class patients on the other hand are much more likely to come to the clinic either unaware of the essentials of psychotherapy or with a distorted conception of it. Many cannot easily tolerate a non-medical type of treatment with its implication that their complaints may not be "real" since they are not treated on a physical basis.

The lower class patient puts much more emphasis on the present than on the future (Gursslin, Hunt, & Roach, 1959-60) and is more concrete and task oriented (Gursslin et al, 1959-60) and is less other-directed and less likely to conform to social and expert opinion (Hyman, 1953). He is also more apt to have physical as opposed to psychological symptoms and is less psychologically minded (Hollingshead, 1958).

Finally, he is more poorly motivated, less patient, and less discontented and dissatisfied with himself (Schmidt, Smart and Moss, 1968) than the middle class patient. Hence, it is not hard to understand why forms of treatment which emphasize long-range goals and self understanding via psychological constructs may seem to him bewildering, if not downright irrelevant and nonsensical.

It is also likely that the lower class patient, concrete and task oriented as he is, should feel that further treatment is unnecessary and irrelevant once his symptoms have somewhat abated. Furthermore, because of their different expectancies and social class background they are likely to find communication with the therapist a difficult matter.

Hence, the lower class patient is less often favourably disposed towards psychotherapy. If, in addition, he is not accessible to authority influence, the possibility of his terminating psychotherapy early is quite great.

Another reason why patients from the higher class are more likely to be remainers in Pakistan is because of the fact that they are more influenced by Western culture and hence are aware of the usefulness and benefits of psychotherapy. Moreover, they do not face the problems of financial burden and other factors which contribute to the early termination of psychotherapy as mentioned by this research. At times they also consider going for psychotherapy as a symbol of prestige. People from lower class are not highly educated and hence do not readily understand the value of "just talking" as a technique of treatment.

The relationship reported between social class variables and continuation in psychotherapy thus may be a function of several variables acting independently or in interaction with each other.

Hypothesis No. 3 states: If the patients are educated, then they will remain logner in psychotherapy.

It is evident from Table No. 3 that the effect of education on remainers and terminators is psychotherapy is quite significant. The statistical significance obtained is $p<.01$ level.

Here again there are certain factors which are working independently and in interaction with one another. Firstly, the more educated the person, the more he is psychological minded and is aware of problems having an emotional origin rather than all problems having a physical origin. They also have an understanding of the psychotherapeutic process and have a desire for psychotherapy.

Secondly, the highly educated people have a lesser fear of the stigma which is attached to mental illness. Higher education usually connotes an ability both to see causal relationships between ideas, feelings and behaviour and to recognise and label them. Therefore education is an important factor which has proved to be a determinant in continuation of psychotherapy.

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BIRTH ORDER AND INTELLIGENCE

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ABSTRACT

In order to determine the effect of birth order on intelligence the Raven's Standard Progressive Matrices test (SPM) was administered to 66 5th grade female students. An analysis of variance was run and significant difference in intellectual performance was found among the first, second and third born children ($F=4.58$, $p< .05$). Mann-Whitney Z test showed statistically significant difference between first and second borns (Mann-Whitney $Z=2.79$, $p=.0026$) and second and third borns (Mann-Whitney $Z=-1.93$, $p=.0268$), while no significant difference was found between first and third borns (Mann-Whitney $Z=1.32$, $p=.0934$). From the SPM means, it further appeared that the first child in the family of three got the highest score.

INTRODUCTION

Intelligence was previously believed to be influenced in some degree by heredity, by the quality of education one gets, or by styles of child-rearing. But now a number of studies show that, such factors aside, intelligence is also a product of how many brothers and sisters one has, and of seniority in the family. Intelligence declines with family size; the fewer children in the family, the smarter one is likely to be. Intelligence also seems to decline with birth order; the fewer older brothers or sisters, the brighter one is likely to be.

Several studies have centred upon the topic of eminence and ordinal position at birth. Ellis (1926) studied 1,030 eminent British men and women; Cattell (1927)

reported on the birth order of 855 distinguished American men of science; Ogburn (1927) gave his conclusions based on data derived from Who's Who; Huntington (1938) reported actual statistics from a later study of those listed in Who's Who, and Roe (1953) published birth-order data for the 64 eminent scientists she interviewed and tested. In the two-child family, where theoretically each birth order should contribute equal percentages, Ellis reported 56% of the eminent British were first born; Cattell found 57.4% of his American scientists were first born; Huntington reported 64% for the analogous group from Who's Who. Ogburn noted that the youngest child was somewhat in excess of theoretical expectancy. Roe reported birth-order data for the 64 scientists without regard to size of family. Some 39 (61%) of the 64 interviewed by Roe were first born, however in addition, 5 of the 25 who were later born were first-born sons; 2 of the remaining 20 had their older siblings die quite early, 1 at birth and 1 at age 2.

Terman (1925) reported that 56.1% of representatives of the two-child family in his study of the gifted were first borns. In fact, the data he cites on birth order for the gifted quite closely parallel those reported by Cattell for American scientists, at least among representatives of families of two, three, and four children. In both studies, the first born exceeds theoretical expectancy for each of the three family sizes. Altus (1965b) has reported the first born in greatly over represented at the college level; some 55% of a sample of over 4,000 entering students (1960-63 inclusive), at the University of California, Santa Barbara, were first born. Approximately 5/8 of the representatives of the two-child family were first born; about 1/2 of the representatives of the three-child family and of the four-child family were the oldest.

A fairly representative finding is that given by Capra and Dittes (1962), for example, who found 61% of two samples of Yale undergraduates to be first-born or only children. Altus (1965a) gathered data on 1,878 students entering in 1960 and 1961. It is concluded that 1st borns in college may be verbally more able than later borns. In mathematical aptitude, no differences appear. Tahmisian and Walker (1967) found that the SAT Scores for first born females were significantly higher on both the verbal and mathematical sections than the scores for later-born females. There was some tendency (not statistically significant), for the firstborn males to have higher ability than later born males. The male SAT mathematical ability means of first-and later-born were almost identical (531.49 versus 532.08) which agrees well with the Altus (1965a) data in which they were identical. The first borns were over represented in the Tahmisian and Walker data can be seen in the fact that of the 142 subjects, 58%

were in the first born category (51% if the only child is excluded).

The influence of larger family size is seen as having an increasingly depressing effect on the score range, with an attendant progressive disadvantage for the youngest in comparison with the oldest in larger family sizes (Belmont & Marolla, 1973; Belmont, Stein & Wittes, 1976; Eysenck & Cookson, 1970; Zajonc, 1976). Zajonc and Markus (1975a) examined the influence of birth order on IQ. They used theoretical growth curves to estimate the intellect of a child at a given time, and to describe the intellectual level of any family. According to them intellectual ability decreases as size of family grows. The brightest children come from the smallest families, and are born first. With each additional child, the family's intellectual environment depreciates, because a child's intellectual growth is partly controlled by the overall intellectual climate of his home. Children who grow up surrounded by people with higher intellectual levels have a better chance to achieve their maximum intellectual powers than children who develop in intellectually impoverished milieus.

Inspite of agreement of findings among the studies referenced, some unresolved issues remain. For example, one study found that onlies performed better than all other birth order positions (Eysenck & Cookson, 1970). Others have found first borns in two child families to be superior to onlies (Belmont & Marolla, 1973; Zajonc & Markus, 1975b), and finally, one study (Glass, Neulinger, & Brim, 1974) found no differences between onlies, first borns, and second borns in small families.

The more recent studies in the area do not provide unequivocal evidence either for or against the existence of a birth order influence on achievement. The findings of Svanum and Bringle (1980), from analyses of a large representative American sample of 6-to-11-year-olds, constitute recent support for the notion that birth order effects are not significant when family size is controlled. Similarly, Zajonc and Bargh (1980) found inconsistent birth order effects in three cohorts taking SAT exams during the early 1970s. Contrary to these findings, Zajonc and Bargh (1980) reported significant birth order influences in elementary-school children born in 1962, and a study by Berbaum and Moreland (1980) likewise presented support for a birth order influence on children's intellectual achievement.

Although the research evidence on the relationship between birth order and intellectual ability/performance does appear to indicate the existence of such an association this is by no means conclusive. The present study attempts to explore

whether and the extent to which these two variables are related and is the first study of its kind on a Pakistani population.

METHOD

Sample:

Sixty-six female students belonging to the fifth grade constituted the sample for the present study.

Material:

The Standard Progressive Matrices developed by Raven, Court and Raven (1983) was used to measure intellectual performance.

Procedure:

After the purpose of the test was explained to the teacher, the testing was carried out in groups of 15 students with standard instructions (Raven, Court and Raven, 1983) and without any time limit. Students were asked to hand over the answer sheet on completion of the test. After completing the test the students were asked to fill up a brief questionnaire concerning their ages and ordinal position in the family. The total SPM score was the sum of correct responses on sixty items.

RESULTS AND DISCUSSION

The statistical test of Analysis of Variance was applied in order to compare intellectual performance of 3 groups i.e. first, second and third-borns. The Mann-Whitney Z test was applied to compare intellectual performance of first and second, first and third, and second and third-borns. Those subjects coming under fourth, fifth and sixth ordinal positions were not taken into consideration for the present study because they constituted a total of 9 subjects only. Further, larger than 4 sibling families were also not studied.

Averages of SPM raw scores were also taken out for the first born in families of three and four children and the second born in families of three and four children. Others were not considered because they were too few in number.

TABLE I

Analysis of Variance of SPM Scores for the Three Ordinal Positions

Source of Variance	Sum of Squares	df	Mean of Squares	F	P
Between Groups	775.66	2	387.83	4.58	$p<.05$
Within Groups	5333.94	63	84.66		

TABLE II

Mann-Whitney Z test between Groups

Groups Compared	Z	Level of Significance
First vs Second-Born	2.79	$p = .0026$
First vs Third-Born	1.32	$p = 0.934$
Second vs Third-Born	− 1.93	$p = .0268$

TABLE III

Means and Standard Deviations on the SPM for each of the Three Ordinal Positions.

Ordinal Position	N	Means	S.D.
First-Born	26	27.88	9.35
Second-Born	22	19.81	10.73
Third-Born	18	24.33	6.55

TABLE IV

Difference in the Average SPM Scores of First and Second-Borns in Families of Three and Four.

Average score of first born in families of three	Average score of first born in families of four	Average score of second born in families of three	Average score of second born in families of four
32.85	22.30	22.88	16.00

The analysis of variance as shown in Table I indicates that there is a statistically significant difference in intellectual performance among the groups ($F=4.58$, $p<.05$).

It is clear from Table II that the mean score for first, second and third-borns are 27.88, 19.81 and 24.33 respectively which indicate that first borns are intellectually at a higher level than second-and third-borns. However, the Mann-Whitney test as shown in Table II indicates that the result is statistically significant only when a comparison is made between first and second-borns (Mann-Whitney $Z=2.79$, $p=.0026$) and it is statistically insignificant when a comparison of intellectual performance is made between first and third-borns (Mann-Whitney $Z=1.32$, $p=.0934$). When a further comparison was made between second and third-borns the result was found to be statistically significant (Mann-Whitney $Z=-1.93$, $p=.0268$) i.e. third-borns were found to have significantly higher scores than second-borns.

The results shown in Table IV make it clear that when the average scores of first-borns in three and four children families and second-borns in three and four children families were compared, it was found that first-borns in families of three got the highest score (32.85), followed by second-borns in families of three (22.88), first-borns in families of four (22.3) and second-borns in families of four (16.00). Hence it appears that the larger the family size, the less benefit one receives from the intellectual environment.

From the above results one can conclude that intellectual performance of first born children is better than those who are second-born maybe because there are two adults (parents) each contributing their maximum to the intellectual environment therefore the first child gets more opportunities to gain from his environment. On the contrary, the second child is born into an intellectual environment the quality of which is diminished due to the earlier arrival of the first-born. One might expect a similar difference between first and third borns, but in the present study there appears to be statistically no difference between these two groups although first borns did obtain higher mean scores.

The reason for an insignificant difference between first and third borns and third borns being better in intellectual performance than second borns may be because of the small sample size studied. In order to arrive at a clearer conclusion further research is needed in this area.

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SOCIAL ROLE FACTORS OF PSYCHOTHERAPY

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ABSTRACT

Therapist and client social role dimensions of therapy are important considerations in the rehabilitation process. The purpose of the present investigation was to determine therapist perceived client social role dimensions of psychotherapeutic processes. It was also conducted to find out their nature and frequency. Results indicated the most frequently perceived dimensions were: performance, ambiguity, strain, conflict, and immersion.

Psychotherapeutic processes used in the treatment and rehabilitation of the mentally ill are frequently hampered by the client's acceptance of a "sick" role, and his performance of sick role behaviors. According to Parsons (1951, 1958, 1975), the demonstrated behaviors require that the person be labeled as mentally ill based on institutional expectations and social norms. The individual is then expected to perform a social role according to the nature and severity of the illness. In his sick role, the client has an obligation to himself to recognize the deviant behaviors and his expression of them. He also has a responsibility to society to have a desire to recover, or change his behaviors, in order to be re-labeled into a "well" role (Susser, 1973; Twaddle, 1974).

From the viewpoint of sociological theory, the social role dimensions of any mentally ill label can have negative consequences for the individual's self-perceptions, positive self-concept and self-esteem. Psychologists, psychiatrists, and other mental health workers often insist that, in order for rehabilitative processes to occur, the person first needs to accept and acknowledge his sick role — a social role based on normative psychosocial, ethical, and legal cultural standards, which the professionals

reinforce and elaborate in the client through their interactions with him (Goffman, 1961; Rosenhan, 1973; Scheff, 1966). Under such conditions, the person is apt to be more comfortable in accepting the mentally ill social role than in defiantly rejecting it, which can lead to increased personality self-degradation (Lemert, 1951).

The importance of social role factors of psychotherapy depend, in part, on extent to which the mentally ill client has become involved in the transition between primary and secondary role deviance. Primary deviance refers to any direct violation of social norms; in the current context, it is the violation of those norms differentiating between mentally healthy and mentally ill roles. This form leads to little client change in basic self-concept, self-image, or other self perceptions, and leads to less change in social roles. Secondary deviance refers to the fact that the behavior has come to dominate the individual's self-conception. The client modifies his self-image and thinks of himself as mentally ill. In this instance, he identifies with the labelled role and performs the characteristic behaviors associated with it (Lofland, 1969; Lemert, 1967; Schur, 1971).

Mental illness can be a catch-all label for wide-ranging violations of social norms learned in the socialization process (Szasz, 1960). It can be learned from significant others beginning at early ages. Behavioral idiosyncracies may either not be very distinguishable from other individual differences in the client's group, or not be sufficiently different to be defined as serious deviance. These behaviors, and their resultant social roles, which ultimately can come to be regarded as evidence of mental illness, therefore, were learned and reinforced early in life as part of interaction and socialization processes (Becker, 1962; Peretti, 1969, 1976).

The purpose of the present investigation was to determine therapist perceived client social role dimensions of psychotherapeutic processes. It was also conducted to find out their nature and frequency.

METHOD

Subjects:

Twenty-seven professionals, certified in the area of mental health — sixteen psychologists and eleven psychiatrists — were selected as subjects. They were actively engaged in psychological counseling and psychotherapy at the Community Mental

Health Council, Edgewater Community Mental Health Center, or Ridgeway Hospital, Chicago, Illinois.

Materials:

An interview guide was constructed to delimit the *S*s' responses about psychotherapeutic processes to the area of perceived client social role dimensions. It contained questions focusing on the "sick" or mentally ill role and the extent to which specific social role dimensions were found to occur in the client during therapy. The *S*s generated the nature of such dimensions as well as their frequency of occurrence.

PROCEDURE

Each *S* was interviewed individually at a private office of the institution at his convenience. Questions were asked each *S* in the same order and in the same manner. Wherever relevant, probing questions were used to attempt to obtain a more complete, meaningful response. All of the *S*s had volunteered for participation in the research and were interested in the client social role dimensional aspects as they might pertain to their particular psychotherapeutic process. No time limit was given for the completion of the interview; however, the mean time was about forty-five minutes per *S*.

RESULTS

Table 1 shows the five most frequently stated social role dimensions and their use in first and second themes from *S*s' verbal responses. Using content analyses on the interview responses, key words, phrases, ideas, and most frequently stated role concepts, the nature and frequency of the role dimensions generated by the *S*s were compiled. Both the first as well as the second theme was compiled to determine the most significant *S* perceived dimension, the second most significant, and their combined significance, as indicated in the totals column.

In Table 1, response frequency of the social role dimensions, as well as their rank ordering, suggest the relative weight of each criterion measure. In rank order, the most frequently stated social role dimensions were: performance, ambiguity, strain, conflict, and immersion.

TABLE 1

The Most Frequently Stated Social Role Dimensions and Their Use in First and Second Themes from *Ss*' Verbal Responses.

Social Role Dimension	Themes: First Rank	First N	Second Rank	Second N	Totals Rank	Totals N	Percent
Performance	1	9	2	7	1	16	29.63
Ambiguity	2	7	1	8	2	15	27.78
Strain	3	6	3	5	3	11	20.37
Conflict	4	3	4	4	4	7	12.96
Immersion	5	2	5	3	5	5	9.26
Totals		27		27		54	100.00

CONCLUSIONS AND DISCUSSION

Therapists working with the mentally ill do perceive client social role dimensions of psychotherapeutic processes. These factors can hamper the guidance, direction, and/or other positive aspects of the therapy, particularly when the client accepts the "sick" role and its accompanying sick role behaviors.

The most frequently stated perceived social role dimension was role performance, or the behaviors the client displayed which were relevant to the particular mentally ill role he was playing. The client seemed to want to convey, overtly or covertly, to the therapist that part of himself which was expressive of deviant role performance. Although the role performance did allow the client some flexibility according to the *Ss*, many of his behaviors were fairly simple, automatic, and within the limitations of the labelled classification. During the psychotherapeutic process, the therapists would attempt to seek to analyze and classify perceived role performances in terms of the generic quality of the behavior and the goals and motives of that behavior.

Role ambiguity was the second most frequently stated reply in the themes of the *Ss*. It pertained to the role of the client which lacked clarity with few guideposts or uniform standards for judging role performance. With the client seemingly striving to cling to the mentally ill sick role, and the therapist attempting to modify and change that role, frequently during the therapeutic process the client's role would appear amorphous, nebulous, and ambiguous. He seemed to be confused as to what was expected of him, and he tended to alternate between discontinuities encountered in passage from a mentally ill to a mentally healthy role. The *Ss* sought to clarify and anchor the particular behaviors associated with the latter role status in order that the client might establish more precise expectations of that role, and hopefully, make a smoother transition in that direction.

Role strain refers to the difficulty individuals have in meeting their role obligations. The *Ss* maintained that many of the their clients found the sick role the simplest and easiest for them to perform. Such individuals tended to choose this role, because at some time in their "normal" life, they suffered severe role strain as a result of inadequate role preparation, role transitional difficulties, role conflict, or role failure. In the course of therapy, the clients gave evidence substantiating these criteria, which tended to lead to self-defeating attitudes and subsequent deterioration of the personality. The *Ss* provided assurance and emotional support to the clients, during therapy, and tried to change the self-defeating attitudes into those which might be most beneficial in the construction of new, more positive, socially adequate roles for the future.

The fourth most frequent therapist perceived client social role dimension of role conflict was based on the set of expectations the individuals had for each other. Conflict arose because each person had contradictory expectations of the other. The *Ss*' expectations of the clients were directed toward rehabilitative, socially adequate roles; clients presumed therapists were often directed toward custodial, caretaker, and other roles not pertinent to rehabilitative processes. Resolutions of the conflict for the client were attempted by the therapists when they frequently conducted their sessions with him in objective, dispassionate, and professional manners.

Role immersion was the last of the most frequently stated role dimensions. According to role theory of personality, people tend to behave the way others expect them to behave. As the individuals identify with these actions, they frequently immerse themselves in them and such behaviors become part of their personalities. For the

mentally ill client, this immersion can include deviant acts correlated with the mentally ill label. Through role redefinition, the *S*s have striven to have clients redefine their own self-concept in roles which do allow them to exhibit socially acceptable behaviors. Through self-analysis, self-awareness, and self-identification, the clients are taught and encouraged to develop their concept of self as well as their role concept from mentally ill to mentally healthy.

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THE TEMPERAMENTAL PATTERNING OF MIDDLE BORN CHILDREN AS A FUNCTION OF AUTHORITARIANISM OF FATHERS.

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ABSTRACT

The objective of the study was to investigate the effect of authoritarianism of fathers on the Temperament Patterning of their children.

The population was confined to only middle born children in families having not more than three alive children. The final sample included a total of 80 subjects consisting of 30 children of "authoritarian" and 50 of "non-authoritarian" fathers. The selection was made on the basis of information gathered through a questionnaire.

The Thorndike Dimensions of Temperament (TDOT) was used to obtain the Temperament Profiles of authoritarian and non-authoritarian groups.

Means were computed and t-test was applied to check the significance of difference between Temperament Patterning of middle born children of "authoritarian" and "non-authoritarian" fathers.

Out of ten dimensions of temperament, three i.e. "Sociability", "Acceptance" and "Responsibility" were found to be directly related with authoritarianism of fathers, whereas the remaining seven dimensions did not show any significant relationship with the authoritarianism of fathers.

INTRODUCTION

For many years psychoanalysts have stressed the importance of early family experiences on the child's behaviour and attitudes. According to Freud neuropathic

parents, who overprotect the child and smother him with affection awaken in him a disposition for neurotic diseases. Flugel (1958) points out that severe or too careful parents, make the child rebellious, not only towards his parents but towards all adult authorities.

In a family the role of parents in a child's life is most important especially during the formative period. In a home where parents are overconcerned about their children, where discipline is inconsistent and where there is worry, anxiety and lack of a sense of humour, children are likely to be highly emotional and subject to outbursts of temper. Even though the father's influence is less than the mother's it cannot be ignored. An autocratic father can cause maladjusted development in the child as readily as a permissive father whose discipline is ineffectual.

Observations and investigations appear to indicate that in homes in which the father plays an active role in children's training, boys tend to identify with the father and girls with the mother.

Lafore (1945) classified parents into four groups: "Dictators", "Cooperators", "Temporizers" and "Appeasers".

The first type of parents, the "dictators", tend to apply strict control on their children. What they say, they never back down from. They stick to their guns and make no compromises. They act quickly and demand immediate responses. They follow through and keep after the child.They demand undisputed acceptance of authority. We label them Authoritarian. They are angry and hostile. Their aggression takes various forms-all cruel-raising hell, yelling, hollering, shouting, slapping across the face, poking and hitting, etc. Mussen and Kagan (1958) concluded that 'harsh' parents may have more conflicts with their children and their children adopt conforming as a way of life.

'Cooperator' parents are predominantly friendly. They seem to deal with children on a basis of mutual respect and appear to feel that if things could be

explained and if there could be joint actions unquestioning obedience is not necessary.

The third type of parents, "temporizers", have a "situational" approach. These parents follow no consistent pattern of behaviour but seem to be dictated by situational events. If the situation is pleasant they are pleasant. If the situation gets out of their hands they become confused without seeming to know what they should do.

The fourth category of parents are "appeasers", whose approach is predominantly conciliatory and who seem somewhat afraid of the child as though he is in control. These parents tend to avoid issues and try to circumvent problems that arise. Their apparent aim is to prevent trouble rather than to face an issue.

An authoritarian father has a great impact on the behaviour aspects of the personality of his children. Temperament is usually the one important and readily available dimension used to characterize the personality. It refers to the preexisting tendency to react in a certain manner—enthusiastically or reluctantly.

Children may differ significantly in their attitudes, abilities and temperament because of their birth order alone. According to Adler (1964), the first born is usually given a good deal of attention until the second child is born. The second child is characterized by being ambitious and competitive—even over ambitious—until such time that the third child is born. The second born is constantly trying to surpass his older sibling. He also tends to be rebellious and envious but by and large he is relatively better adjusted than his older or younger siblings. In a family of three children, it is therefore assumed, the second child or the middle born is best adjusted and balanced as compared to his older or younger sibling. In the present study only the middle born in families of three siblings were included in the test sample on the above assumption.

The term "authoritarian personality" refers to one who is rigidly ethnocentric, antidemocratic, compulsively conventional, punitive and condescending towards those regarded as inferior and submissive to authority. (McCandless, 1967).

The present study was conducted to see:

1. The extent to which the authoritarianism of fathers is likely to influence the temperament development of their children and

2. The nature and direction of this effect if at all.

It was thus hypothesized that "The authoritarianism of fathers has no effect on the Temperament Patterning of their children".

METHOD

Subjects:-

The preliminary sample included 100 middle born adults including both males and females to whom a carefully constructed questionnaire was

administered. On the basis of their responses, the hundred respondents were divided into two categories i.e. children of "authoritarian" and "non-authoritarian" fathers.

Thus the final experimental sample included 30 subjects representing the authoritarian group and 50 subjects in the non-authoritarian group. These all were randomly selected from the Punjab University, Lahore.

The semi-standardized temperament inventory "Thorndike Dimensions of Temperament" (TDOT) which undertakes to measure the following Ten Dimensions of Temperament, was administered to both of the groups": sociable, ascendant, cheerful, placid, accepting, tough-minded, reflective, impulsive, active and responsible dimensions.

Procedure:-

The data collection involved the rigorous exercise of first locating 100

families which have only three alive children. This was followed by approaching the middle born child in each family and having him fill the biographic questionnaire.

The respondents were then administered the Thorndike Dimensions of Temperament. Following necessary instructions about the test they were allowed sufficient time to record their well considered and most reflective judgments.

The scoring of the questionnaire helped in classifying the respondents into two categories:"authoritarian" & "non-authoritarian". This classification was based on the sum of the scores of each questionnaire. It was assumed that a score of 20 and above indicated the presence of authoritarian fathers and below 20 of non-authoritarian fathers.

In this way 80 questionnaires of respondents were selected out of 100. These consisted of 30 questionnaires of authoritarian and 50 questionnaires of non authoritarian fathers.

The scoring of Thorndike Dimensions of Temperament as per prescribed procedure yielded individual scores of all respondents across ten different dimensions with the positive and negative attributes of each subject as well as group scores on each of the dimensions.

RESULTS

The data is schematically presented in a self explanatory tabulated form in Table 1.

As evident from the tabulated values the difference between authoritarian and non-authoritarian groups is significant across three out of ten dimensions of temperament, i.e. the "sociable", "accepting" and "responsible" dimensions of temperament, which are dominant in children of authoritarian fathers. The t-values of these dimensions were:- sociable: $t=2.64$, $P<.05$; accepting: $t=4.17$, $P<.05$; and responsible:$t=3.96$, $P<.05$ (Table-1).

However, no significant differences were found between the two groups on the 'ascendant', 'cheerful', 'placid', 'tough-minded', 'reflective', 'impulsive', and 'active' dimensions of temperament the t-values of which were 0.77, 0.32, 1.66, 0.89, 0.96, 1.64, & 0.8 respectively (P>.05).

TABLE 1

t=Ratio between authoritarian & non-authoritarian groups on Ten Dimensions of Temperament.

S.No.	Dimensions of Temperament	Mean-I*	Mean-II**	t-value	Level of Significance
1.	Sociable	-0.7	1.92	2.64	P<.05, P<.01
2.	Ascendant	2	1.20	0.77	Not Significant
3.	Cheerful	-1.5	-1.60	0.32	Not Significant
4.	Placid	-0.33	1.00	1.66	Not Significant
5.	Accepting	1.70	-2.14	4.17	P < .05, P < .01
6.	Tough minded	-1.70	-1.02	0.89	Not Significant
7.	Reflective	-0.66	0.08	0.96	Not Significant
8.	Impulsive	-1.73	0.18	1.64	Not Significant
9.	Active	-1.20	-1.90	0.80	Not Significant
10.	Responsible	3.46	-0.60	3.96	P < .05, P < .01

df = 78

* Mean I= Mean Score of Authoritarian Group against each Dimension

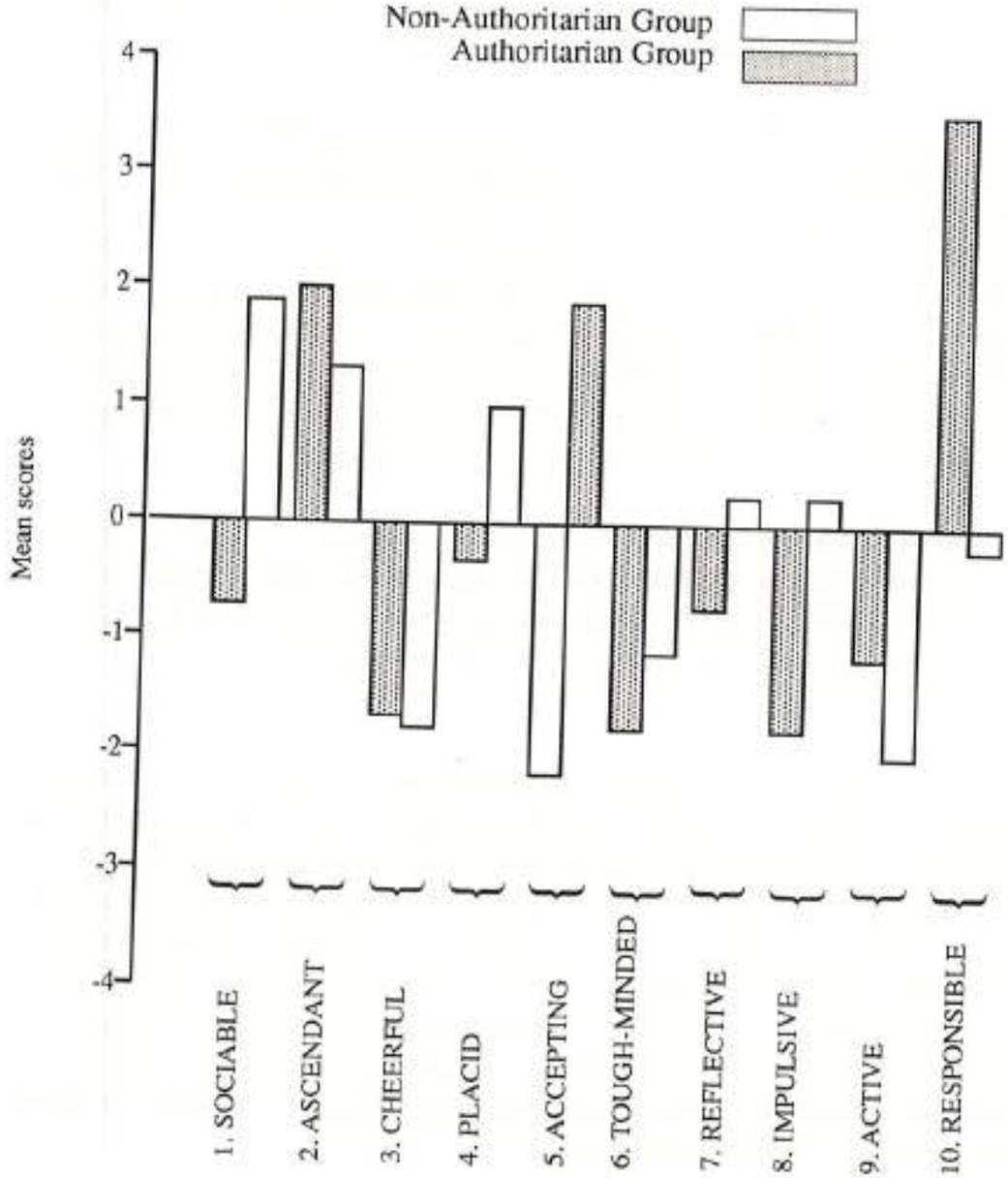
** Mean II= Mean Score of Non-authoritarian Group against each Dimension

DISCUSSION

The idea behind the present study was to investigate the effect of the authoritarianism of fathers on the temperament patterning of their children.

GRAPH NO.1

Mean scores of authoritarian and non-authoritarian groups on Ten Dimensions of Temperament.



The hypothesis for the present study was that "The authoritarianism of fathers has no effect on the temperament patterning of their children". As results indicate on seven out of ten dimensions of temperament no significant difference was revealed which implies authoritarianism of fathers has no effect on the overall patterning of temperament. However, some effect, as on the dimensions of sociability, acceptance, and responsibility, cannot be ignored. The t-test revealed significant differences on these three dimensions of temperament between the children of authoritarian and non-authoritarian fathers.

The children of authoritarian fathers are less sociable (Mean=0.7; $t = 2.64$, $P < .05$) as compared with children of non-authoritarian fathers (Mean = 1.92). Thus if the father is non-authoritarian and more friendly towards his children the children feel more free and confident in mixing with other people and more so with their peers. They enjoy doing things in groups rather than by themselves, going to parties, etc. However if a father has strict control and tends to exercise his authority over his children the children are apt to be less sociable. Such a child prefers to be by himself, reads or engages in other kinds of solitary activities, or in other words he will tend to be somewhat isolated from his social surroundings.

The t-value of the "acceptance" dimension of temperament also indicates a significant difference between authoritarian and non-authoritarian groups ($t=4.17$, $P < .05$). The results show the children of authoritarian fathers (Mean=1.70) are more accepting as compared to the children of non-authoritarian (Mean = -2.14) fathers.

Thus children of authoritarian fathers will tend to accept people at face value or in other words they will be more conforming and yielding. We may infer that due to the authoritarian control of their fathers they learn to conform to other people more readily and become more accepting, perhaps, because they have learned to obey orders and "do it without question". So they do not tend to question people's motives but accept them without any criticism. In contrast to them the children of non-authoritarian fathers are apt to be less accepting. They are more critical and tend to question people's motives before accepting them. Without any fear of authority or punishment on questioning they learn to question and criticize others motives instead of blindly accepting them.

A third significant difference between the children of authoritarian and non-authoritarian fathers was found in the "responsible" dimension of temperament ($t=3.96$, $P < .05$). Mean values of the two groups indicate that the children of authoritarian fathers are groomed to be more responsible (Mean = 3.96) as compared to children of non-authoritarian fathers (Mean=-0.60).

Authoritarian control is advantageous in that it tends to inculcate a sense of responsibility which is regulated by a fear of authority. The children of such fathers learn to complete their tasks on time. They are more careful about performing their duties with full responsibility. Due to the strict control of the father they learn to be more punctual and responsible. On the other hand children of non-authoritarian fathers tend to be more casual and careless in their routine life. In general life they are often late with their commitments and rush to meet deadlines at the eleventh hour. Research findings indicate that either extreme on the control scale is associated with some undesirable behaviour.

Warm restrictive discipline is related to politeness, neatness and conformity. However it is also related to immaturity, dependency, blind acceptance of authority, social withdrawal and low creativity. At the other extreme, warm permissive parents have self indulgent children who have little impulse control and low achievement standards. Although low achievement and impulse control are also associated with hostile permissive parents, in these families they are often accompanied by antisocial aggressive behaviour in and out of their homes. The combination of high hostility and restrictiveness is the most devastating to the child's development of a sense of competence. The child sees himself as controlled by powerful malignant external forces over which he has little influence. The child admires but fears authority and when he reaches adulthood he tends to express his hostility in a devious manner by holding repressive political beliefs, by discriminating against minority groups and by advocating harsh but socially accepted forms of aggression such as capital punishment or maximum sentences for minor legal transgressions.

In general warm parents who are moderately restrictive and use consistent love-oriented discipline practices, such as explanations, reasoning and withdrawal of affection, have children who exhibit many behaviours regarded as socially desirable such as adaptability, self esteem, competence, self control and popularity

with peers.

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DEPRESSIVE MOOD COPING STRATEGIES OF UNIVERSITY STUDENTS.

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ABSTRACT

The present study was aimed at comparing depressive mood coping strategies of University students classified as depressed and non-depressed. Beck Depression Inventory (BDI) and the Depression Coping Questionnaire (DCQ) were administered to a sample of 71 male and 84 female students. The Pearson Product Coefficient of Correlation was computed for each statement of DCQ with BDI scores. DCQ items with the highest and lowest rates of endorsement by both the depressed and nondepressed groups were discussed in the context of their general functioning and mood coping strategies.

INTRODUCTION

The essential feature of depression is either a dysphoric mood or loss of interest or pleasure in all or almost all usual activities and pastimes. This disturbance is prominent, relatively persistent and associated with other symptoms of the depressive syndrome. These symptoms include appetite disturbance, change in weight , sleep disturbance, psychomotor agitation or retardation, decreased energy, feelings of worthlessness or guilt, difficulty concentrating or thinking, and thoughts of death or suicide or suicidal attempts (Diagnostic and Statistical Manual-III, 1980).

The cognitive model of depression states that the depressed person develops, probably in childhood, a negative view of the self, the world, and the future that affects subsequent judgments about the person's interaction with the world(Coleman and Beck, 1981).

The observations of the consistency of responses suggest each person has a set of general rules that guide how he reacts to specific situations. These rules not only guide his overt actions, but also form the basis for his specific interpretations, his expectancies, and his self-instructions. Furthermore, rules provide the standards by which he judges the efficacy and appropriateness of his actions and evaluates his worth and attractiveness. He uses rules in order to achieve his goals, to protect himself from physical or psychological injury, and to maintain stable relations with others (Beck,1979).

Consistency in a depressed person may be a feature of a cycle in which he tends to appraise situations as concerning loss and threat of further loss, cope ineffectively, face distressing circumstances, and in turn approach new situations burdened by this. The problems of depressed persons are thus not based merely in their cognitions or perceptions of their circumstances, but in their transactions with their environments (Coyne, 1981; Strack and Coyne, 1981).

Lewinsohn (1974) and his colleagues have provided evidence that depressed patients may suffer social skills deficits and thereby may be basing their conclusions on a limited database. They have found that in social situations, depressed patients initiate fewer social acts toward others and are less adept at timing the social responses they do make. As a result, the actions of depressed patients have less favourable social impacts on others. There is evidence to suggest that in both interpersonal settings (Gotlib and Asarnow, 1979) and achievement settings (Abramson et al., 1978) depressed patients may be deficient in generating alternatives to solve problems. Consequently, depressed patients currently expecting that they cannot control outcomes may have failed to consider many potentially effective means for controlling relevant outcomes.

Coyne (1976a, 1976b) has emphasized the interpersonal dimension of depression. He has suggested that depressed people display distress and solicit

support from others in a way that stimulates a depressive social process.

Schaefer, Coyne and Lazarus (1981) found that depression was associated with perceptions of lower emotional and tangible support from others, both concurrently and prospectively. Pearlin and Schooler (1978, 1979) argue that help seeking and help getting are quite different phenomena and that help seeking tends to be ineffective in buffering stress. Beck, Rush, Shaw, and Emery (1979) have noted that difficulty in making decisions in often a presenting problem to depressed persons. According to Beck et al., when depressed persons are faced with decisions, they ruminate believing that they must have absolute certainty of the correctness of a decision before committing themselves.

A signal detection analysis of the laboratory task performance of depressed persons has suggested that a greater requirement for certainty contributes to their failure to make appropriate responses (Miller and Lewis, 1977). Coyne and his associates (Coyne, Metalksy, and Lavelle, 1980; Lavelle, Metalksy, and Coyne, 1979) have produced evidence for the performance deficits typically observed in laboratory helplessness studies on depressives. Abramson, Seligman, and Teasdale (1978) interpret the poor anagram performance of depressed persons as evidence of a general tendency to perform ineptly that results from their negative expectancies, inability to perceive the connection between response and outcome and low response initiation.

Gong-Guy and Hammen (1980) and Hammen, Krantz, and Cochran (1981) examined whether depressed persons blamed themselves for stressful events in their lives and both found that depressed and nondepressed persons generally did not differ in causal attributions. Coyne, Aldwin and Lazarus (1981) compared strategies for coping with depression that were reported by 15 depressed and 72 nondepressed adults in a community sample. Overall, the coping of depressed persons was characterized by the seeking of emotional and informational support and by wishful thinking, but they did not differ from nondepressed persons in amount of problem-focused coping or self-blame.

Weissman and Paykel (1974) found that depressed women were more distressed about their performance in various social roles than they were actually

impaired. Nonetheless, they tended to be moderately impaired as wives, mothers, workers, and members of the community. In particular, their close relationships were characterized by friction, poor communication, and increased hostility.

Blatt, D'Afflitti and Quinlan (1976) from their findings concluded that normal adults experience depression along similar dimensions as do hospitalized psychiatric patients.

Depression coping strategies of college men and college women are also known to differ (Funabiki et al., 1980; Hammen and Padesky,1977; Kleinke, Staneski, and Mason, 1982; Padesky and Hammen, 1981). Depressed students were less likely than nondepressed students to make adaptive responses (Funabiki, Bologna, Pepping, and Fitzgerald, 1980).

Kleinke (1984) identified three significant functions by a discriminant analysis that compared depression coping strategies reported by 43 Schizophrenic men and 200 depressed and non depressed college men and 200 women. Function 1 was characterized by cigarette smoking and use of tranquilizers and little physical activity. This function appeared to follow a continuum of "pathology" with highest endorsement by schizophrenic men and lowest endorsement by nondepressed college men and women. Function 2 was identified as a sex-role dimension characterized by high levels of crying, self-confrontation, and creative activity reported by depressed and nondepressed college women and exceptionally low amounts of these behaviours reported by schizophrenic men. Function 3 was associated with self-blame, which appears to be particularly characteristic of depressed college students.

The aim of the present study is to compare depressive mood coping strategies of university students of Karachi classified as depressed and nondepressed because there is considerable speculation as to how depressed persons cope with everyday difficulties and what sets them apart in terms of their coping strategies from non-depressed persons.

METHOD

Sample:

A total of 71 University of Karachi male students and 84 female students served as the sample for the present study. The mean age of this group was 24.02 years.

Procedure:

Subjects voluntarily and anonymously completed a four-page questionnaire that consisted of the Depression Coping Questionnaire (DCQ) stapled on top of the Beck Depression Inventory (BDI). Instructions for the DCQ asked subjects to report "what they did when they were depressed". Instructions for the BDI asked subjects to "report how they were feeling today". Students with BDI scores of 13 and above were categorized as Depressed and students with BDI scores of less than 13 as Non-Depressed.

The Pearson Product coefficient of correlation was then computed for each of the 29 statements of DCQ with the BDI scores for the 60 Depressed and 95 Nondepressed students obtained through the classification procedure described above.

RESULTS

TABLE I

MEAN AGES AND BDI SCORES OF THE TWO GROUPS

	AGE		B.D.I. SCORES	
	MEAN	ST. DEV.	MEAN	ST. DEV
DEPRESSED	24.10	6.83	20.15	5.74
NON-DEPRESSED	23.95	7.22	6.51	3.42

Graph 1

MEAN BDI SCORES OF DEPRESSED AND
NON-DEPRESSED UNIVERSITY STUDENTS.

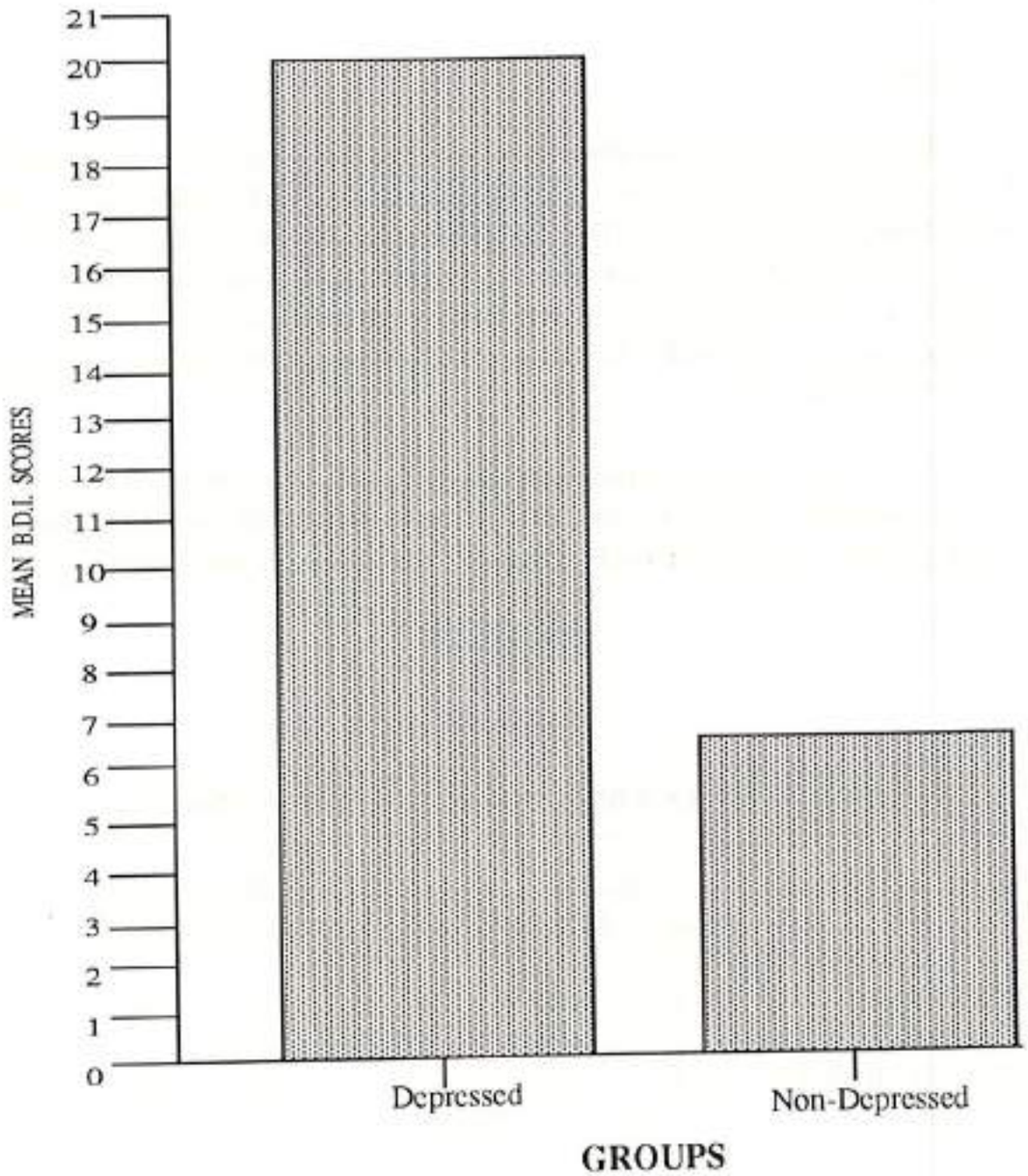

TABLE II

CORRELATIONS BETWEEN BDI SCORES AND DCQ ITEMS.

ITEM NO.	STATEMENTS	DEPRESSED	NON DEPRESSED
1	I SEEK OUT GROUPS OF FRIENDS OR CLOSE PEOPLE.	-0.283	0.841
2	I EAT A LOT.	-0.144	0.085
3	I BECOME AGGRESSIVE AND FEEL LIKE FIGHTING.	0.002	0.154
4	I SMOKE CIGARETTES.	0.112	-0.078
5	I MEDITATE OR DO OTHER THINGS TO RELAX MYSELF.	-0.017	0.422
6	I WATCH T.V.	-0.254	-0.027
7	I DRINK MORE TEA OR COFFEE.	-0.001	0.058
8	I CRY.	0.055	-0.071
9	I SLEEP A LOT.	-0.049	0.081
10	I SPEND TIME ALONE.	0.002	0.008
11	I IGNORE THE PROBLEM AND THINK ABOUT OTHER THINGS.	-0.088	-0.031
12	I SMOKE MARIJUANA.	0.755	0.112
13	I GO FOR A WALK OR SHORT TRIP.	0.160	-0.098
14	I DAYDREAM AND FANTASIZE.	-0.074	-0.002
15	I TAKE STIMULATING DRUGS (LIKE AMPHETAMINES).	-0.025	0.129
16	I WORK WITH MYSELF AND TRY TO WORK OUT A PLAN TO MAKE MYSELF FEEL BETTER.	-0.238	0.001
17	I GET TOGETHER WITH ONE VERY CLOSE PERSON OR FRIEND.	-0.158	-0.832
18	I TAKE TRANQUILIZERS (LIKE VALIUM).	0.709	0.123

(TABLE II CONTINUED)

ITEM NO.	STATEMENTS	DEPRESSED	NON DEPRESSED
19	I ENGAGE IN PHYSICAL ACTIVITIES LIKE SPORTS, DANCING OR JOGGING.	-0.132	-0.043
20	SHORT-TEMPERED.	-0.029	0.048
21	I CUT DOWN ON MY OTHER RESPONSIBILITIES FOR A WHILE.	0.123	0.641
22	I BLAME MYSELF FOR FEELING DEPRESSED.	0.045	0.164
23	I ENGAGE IN SEXUAL BEHAVIOUR (OF ANY KIND).	-0.007	-0.124
24	I CONFRONT MY FEELINGS AND TRY TO FIGURE OUT WHAT IS BOTHERING ME.	-0.128	0.170
25	I ENGAGE IN SOME SORT OF CREATIVE ACTIVITY LIKE WRITING, READING, DRAWING, PLAYING, MUSIC OR WORKING ON PROJECTS.	-0.100	-0.007
26	I GO TO PLACES WHERE THERE ARE LOTS OF PEOPLE LIKE CLUBS OR DANCES.	0.048	0.008
27	I TALK WITH OTHER PEOPLE AND TRY TO WORK OUT A PLAN TO MAKE MYSELF FEEL BETTER.	0.495	-0.023
28	I DRINK ALCOHOLIC BEVERAGES.	0.070	0.099
29	I LAUGH AND FIND HUMOUR IN MY SITUATION.	-0.053	0.113

DISCUSSION

In order to determine the coping strategies used by depressed and non-depressed university students, Pearson r was applied.

It is clear from Table II that for the depressed the 2 DCQ items which have the highest negative correlations with BDI scores are 'I seek out groups of friends' (r= -.283) and 'I watch T.V.' (r= -.254); items which have the most significant positive correlations are 'I smoke marijuana' (r= .755), 'I take tranquilizers'(r= .709), and 'I talk with other people and try to work out a plan to make myself feel better' (r=.495).

For the nondepressed the only DCQ item which has a significant negative correlation with BDI scores is 'I get together with one very close person or friend'(r= -.832). The items with significantly positive correlations for the nondepressed are 'I seek out groups of friends or close people'(r=.841), 'I cut down on my other responsibilities for a while' (r=.641), and 'I meditate or do other things to relax myself ' (r=.422).

The pronounced tendencies among depressed students to smoke marijuana and take tranquilizers may be understood as strategies that they resort to in order to cope with their depression. The immediacy of the effects of hashish and tranquilizers in altering mood make them attractive alternatives. Also they are "easy" ways out as compared to bringing about concrete and positive changes in lifestyles and attitudes, assuming greater responsibility for one's own life, etc. Talking with other people and trying to work out a plan to make themselves feel better appears another in their repertoire of depression coping strategies. Depressives are obviously disturbed by their dysphoric affect and it appears that they see themselves making efforts to overcome their depressive feelings as well as maintaining a certain level of social contact.

The depressed are, however, disinclined to seek out groups of friends or close people. This is not surprising in view of the well-known poor interpersonal relationships that are characteristic of depressives. Low levels of sociability in depressives may be the result of social skills deficits (Lewinsohn et al., 1974).Thus, poor social skills may result in such individuals making unsatisfying contacts with others. Being reinforced, in a sense, for avoiding social contacts their social skills levels deteriorate and they are, in effect, trapped in a cycle in which they get increasingly smaller levels of social reinforcement that contribute to the development of depressive thoughts and feelings. The disinclination to watch T.V. may be part of a wider loss of interest or pleasure in many usual activities that is

characteristic of depression (DSM-III, 1980). However, this result must be interpreted with caution since there was an absence of any kind of significant relationship between T.V. viewing and BDI scores for the nondepressed.(r= -.027).

Nondepressed individuals, on the other hand, are very strongly inclined to "seek out groups of friends or close people". This is, in fact, the behavioral dimension on which depressed and nondepressed appear most diametrically opposed. Nondepressed individuals had the highest positive correlation and depressed individuals the highest negative correlation on this DCQ item. Also, interestingly, the nondepressed were almost equally strongly disinclined to get together with one very close person or friend. It appears characteristic of the nondepressed students to satisfy their social needs through contact with several friends rather than a single close friend. Only further research could tell whether this is characteristic of the age group studied or cuts across other age groups as well.

Other clues to the nondepressed's functioning are their tendencies to 'cut down on other responsibilities' and to 'meditate or do other things to relax' themselves. These are clearly useful coping strategies (which do not appear to be used in any consistent sort of manner by the depressed). The strategies suggest that the nondepressed deliberately performs certain important tension reducing activities that probably play a significant role in their more adaptive functioning as compared to the depressed. The latter group, it will be noted, does appear to attempt to 'work out plans to make (themselves) feel better'; however, in the absence of concrete and adaptive coping strategies (as used by the nondepressed), the "plans" may be vague and abstract and are evidently not helpful in alleviating their depression.

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WORKERS' ATTITUDES TOWARDS MUSIC

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INTRODUCTION

The productivity of a man is determined very largely by the way he feels about his job, the other employees with whom he works, and by his attitude towards the company that employs him. Maier (1933) found that workers with positive job attitudes showed higher productivity than those with negative attitudes. There are several factors which can influence a worker's attitude towards his job. Incentives in general play a particularly important role in shaping workers' attitudes.

According to Smith and Wakely (1972), a man works only to satisfy his needs. Some needs are satisfied without work. Some needs are satisfied by the work itself. He may like what he is doing so much that he works for the sake of working. The critical conditions for need satisfactions, however, are those that sometimes are not provided. In general, incentive is any condition that will satisfy a need. More specifically, it is any critical condition that causes a man to behave in a certain way. The physical environment under which we attempt to accomplish something can greatly influence the efficiency and rapidity of our efforts. Whether we are trying to study, read, change a tyre, or work on an assembly line, the immediate environment affects our motivation to perform the task as well as our actual ability. The physical work environment includes everything from the parking facilities outside the plant and the location and design of the building to the amount of light, temperature, noise and hours of work etc. impinging on an individual's desk or work space. These conditions may facilitate or hinder workers in the performance

of their jobs. When a work setting is made more pleasant and comfortable productivity usually increases.

Music has been used to counteract the monotony of mass production work. A study by Tindall (1937) reported that the use of music resulted in increased production and improved employee attitude, morale, pacifies labour unrest, creates goodwill, lessens labour turnover, and reduces errors. According to Benson (1945), majority of the people like music during work and thought that it would make them happier and more productive.

Some of the best experiments in this field have been done by Kerr. In a 1945 study he found that music increases net worker output in monotonous operations. In another study, Kerr (1946), found that workers want music to be played most of the time and also that female workers prefer music more than male workers.

The influence of an industrial music programme which systematically varied the amount, type, and distribution of music played was studied by Smith (1947) in a plant of approximately 1000 employees over a 12 week period. The results showed that music during working hours generally improved production where the workers were involved in repetitive work. It also increased worker satisfaction. Thus, music probably produces its major direct effect when the individual's capacity for attention is not absorbed by his work; in this situation music appears to direct attention from brooding, talking or off-time job activities.

McGehee and Gardner (1949) studied the effect of music on production by comparing the amount of production on days on which music was played with the amount of production on no music days. The results indicated no favourable or unfavourable effect upon the production. Further, a questionnaire was administered, first, to know workers' reaction to the music program and second to determine how they felt music affected their work. The results of this study indicated clearly that the workers were in favour of music. Fifty nine percent of the workers said they got more work done with music.

The situation is different with complex and demanding work. There is no evidence that music will increase production on a difficult job for one very good

reason. The complexity of the work, according to Uhrbrock (1961), demands full attention and concentration, and music could become distracting and interfering. He also found that young, inexperienced employees engaged in simple, repetitive, monotonous tasks increased their output when stimulated by music, whereas experienced factory operators whose work patterns are stabilized, do not increase their production when music is played, particularly when performing complex tasks.

Fox(1971) & Wokoun (1963) also found that music may increase productivity on jobs that are reasonably simple, repetitive, and involve units of very short duration such as assembly line work.

A recent study done by Barclay (1984), found that music is more stimulating at midmorning and mid afternoon.

Schultz and Schultz (1986) also found that music is most likely to be beneficial for work that is of short cycle and highly repetitive in nature. Such work does not utilize enough of the employee's abilities. His attention is not absorbed by the task, and the employee may experience very little personal satisfaction. In such circumstances, music may increase productivity and the worker's satisfaction. It is pleasantly diverting and may make time appear to move more rapidly.

Thus music has been found to have a favourable effect in relieving boredom and in increasing efficiency. Music seems to act as a "tonic", reinvigorating the worker who has become bored by the monotony of a repetitive task (Smither, 1988). Attitudinally, the majority of factory workers surveyed prefer working where music is played, but not all workers feel so positively and some are annoyed by it.

The manner in which music is introduced in a work setting is important and may be a source of problems. Some employers introduce music in an informal way by encouraging their employees to sing. In this connection a sad humorous experience was called to the attention of Blum (1956) by an employer. This man had serious doubts about the advisability of music in industry; he said that there had been bedlam in his plant ever since be allowed his employees to sing. Blum visited the factory where the girls worked at a series of long work tables in relative silence.

The employees comprised two minority groups. Suddenly one girl began singing a native song, and was joined by others in her group. Then the other group started singing their own native songs. From then on each group began competing with the other, the volume increased and chaos ensued. Needless to say, this is not the way to use music in industry. In another factory that manufactured radio tubes the management had to prohibit playing the radio during lunch hour because of the excessive arguing among the employees as to what type of program they should listen to.

From various studies it appears that the effect of music on industrial production and worker satisfaction is unclear. The present study was conducted to inquire into the possibility of the relationship between music and productivity particularly in a culture different from Western culture such as ours. It may be noted that there has been no work done in this area in Pakistan.

METHOD

Sample:

The sample consisted of two groups of workers, 40 in each group (Table 1 for demographic information on both groups).

TABLE 1

Demographic Information about Workers

GROUP OF WORKERS	MEDIAN AGE	MEDIAN INCOME	NO. OF MALES	NO. OF FEMALES
MONOTONOUS	32.5 years	Rupees: 1100	25	15
MENTAL	32.5 years	Rupees: 2110	30	10

One group (the Mental group) was composed of workers whose work required concentration, thinking and alertness such as managerial work, accountancy, research, management, etc. The sample for the first group was randomly chosen from various private industries and offices situated in Karachi. The data for the second group (the Monotonous group) which comprised of workers doing manual work, such as in assembly lines, was collected from various private industries.

Procedure:

A questionnaire was used which was made in accordance with the format of the questionnaire used by Kerr (1946) in studying the attitude of workers towards scheduling of "Industrial Music". The questionnaire was translated into Urdu.

The subjects were required to mark the statements which were most acceptable to them or which they preferred most. Questionnaires which were not filled in completely were discarded.

RESULTS AND DISCUSSION

Chi square was computed to find out the difference between the two groups. It was found that the group involved in simple monotonous work likes music significantly more than those involved in mental work (Chi sq.= 12.66, df 1, $P < .01$). This result is also shown in Table 2 and Graph Nos.1 & 2. After comparing both the groups it was found that significantly more of the workers belonging to monotonous group think that music will increase their performance (Chi sq.=10.3,df 1, $P < .01$). This result is represented in Table 3 and Graph Nos. 3 & 4. Further it was found that significantly more of the monotonous group of workers wanted music to be played all the time (Chi sq.=6.83, df 1, $P < .01$). This result is shown in Table 4 and Graph Nos. 5 & 6.

TABLE 2

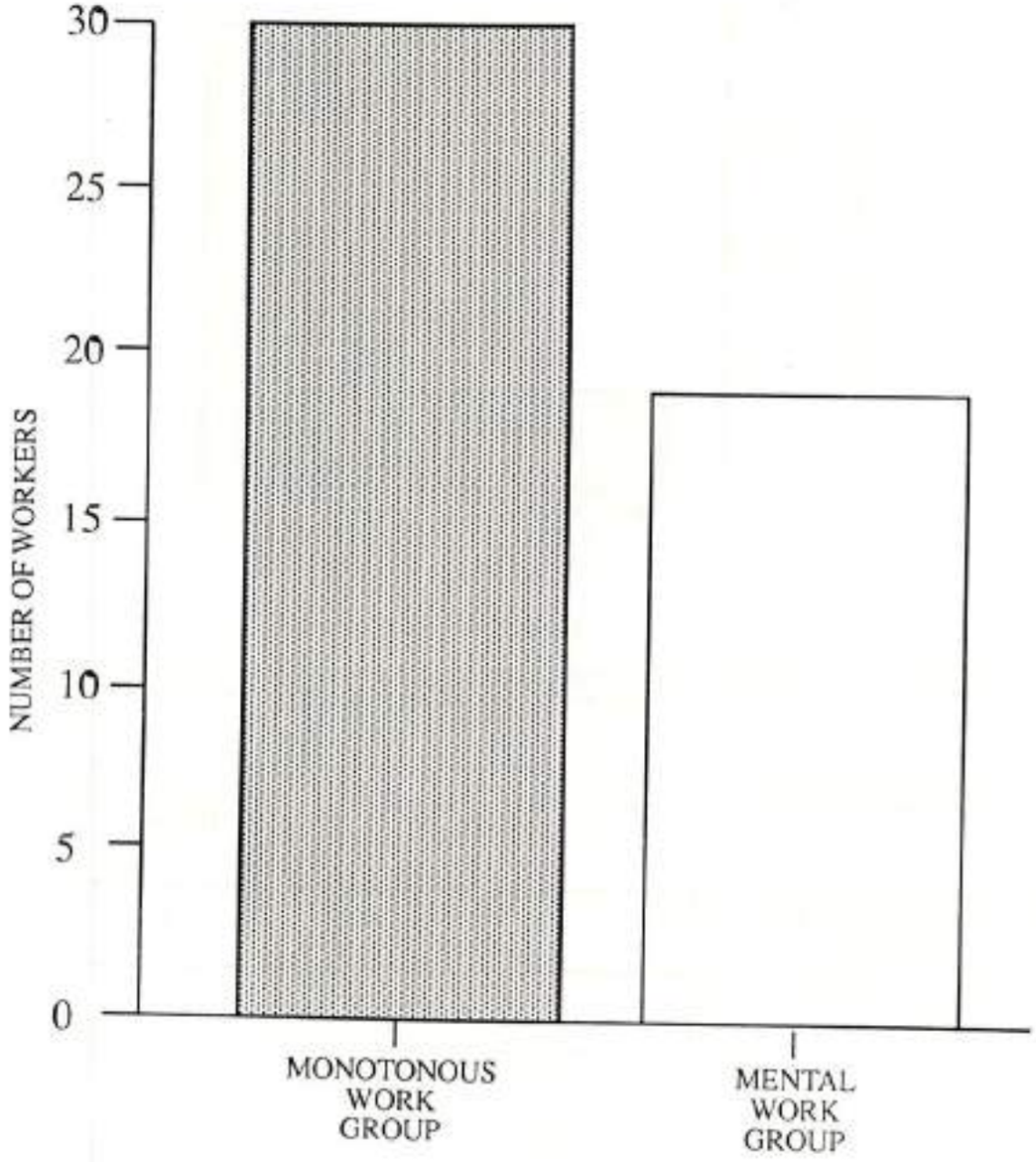
COMPARISON OF WORKERS WHO LIKE MUSIC AND WHO DO NOT LIKE MUSIC

RESPONSES * (N=40)	MONOTONOUS WORK GROUP	MENTAL WORK GROUP
LIKE MUSIC	30	18
DO NOT LIKE MUSIC	4	19
Chisq: $\frac{(Fo - Fe)^2}{Fe} = 12.66$ df = 1 $P < 0.01$		

* Workers "indifferent to music" were excluded from the statistical calculations

GRAPH NO. 1

NUMBER OF WORKERS WHO LIKE MUSIC



GRAPH NO. 2

NUMBER OF WORKERS WHO DO NOT LIKE MUSIC

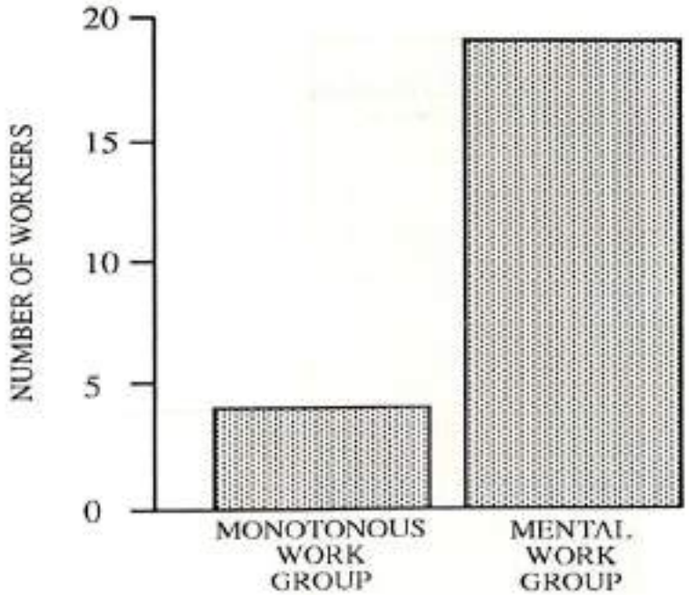


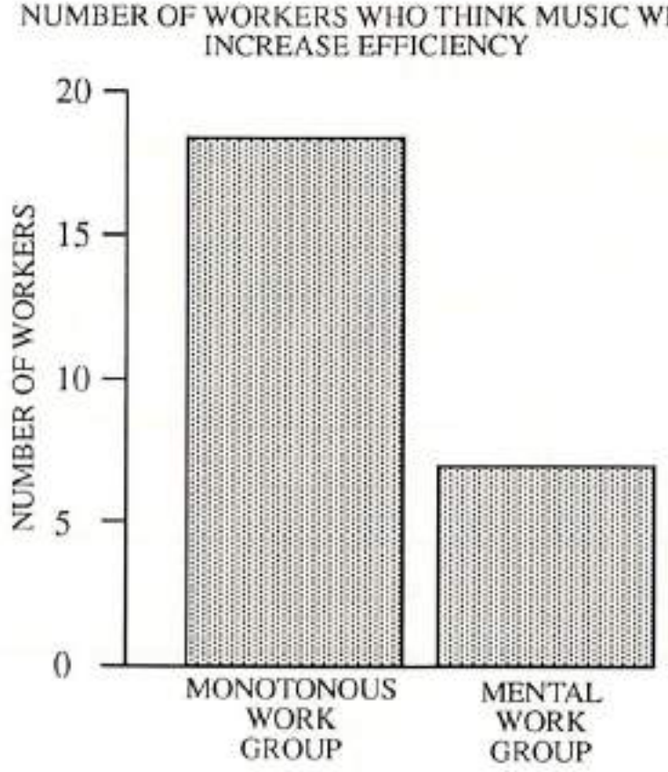
TABLE 3

COMPARISON OF WORKERS WHO THINK MUSIC WILL INCREASE THEIR PERFORMANCE AND THOSE WHO THINK MUSIC WILL NOT INCREASE THEIR PERFORMANCE

RESPONSES * (N=40)	MONOTONOUS WORK GROUP	MENTAL WORK GROUP
Music will Increase Performance	17	7
Music will Decrease Performance	3	10
Chisq: $\frac{(Fo - Fe)^2}{Fe} = 10.3$ df = 1 $P < 0.01$		

* Workers who think music "will not have any effect on their performance" were excluded from the statistical calculations

GRAPH NO.3



GRAPH NO.4

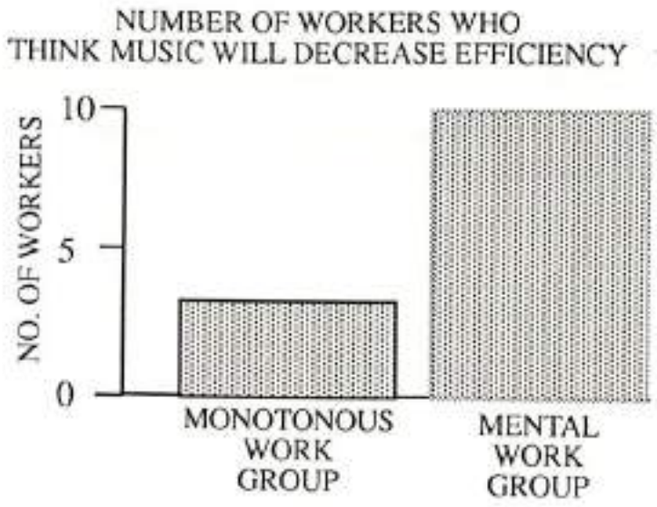


TABLE 4

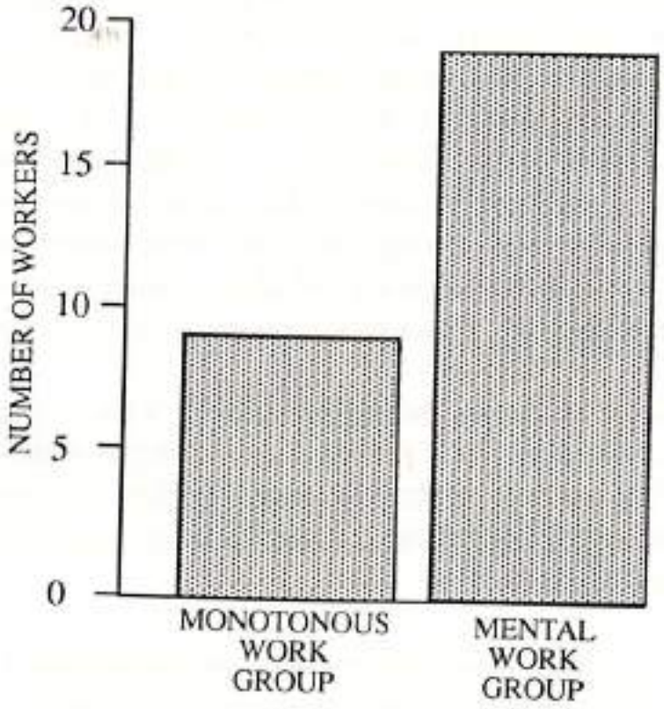
COMPARISON OF WORKERS WHO WNAT MUSIC BEING PLAYED ALL THE TIME AND THOSE WHO NEVER WANT MUSIC

RESPONSES * (N=40)	MONOTONOUS WORK GROUP	MENTAL WORK GROUP
Like music all the time	8	2
Never want music	9	19
Chisq: $\frac{(Fo-Fe)^2}{Fe} = 6.83$ df = 1 $P < 0.01$		

* Workers who marked the intermediate categories on the questionnaire were excluded from the statistical calculations.

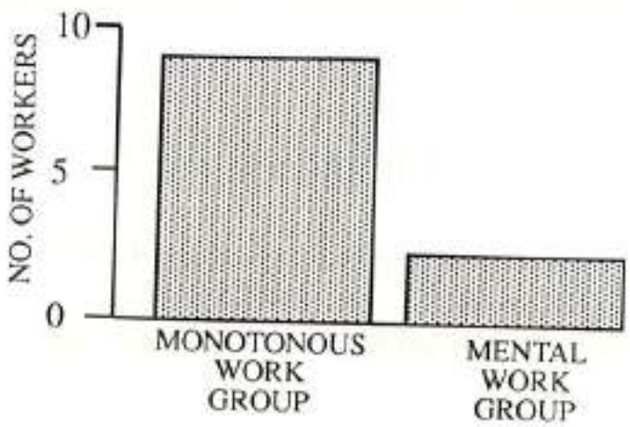
GRAPH NO.5

NUMBER OF WORKERS WHO NEVER WANT MUSIC



GRAPH NO.6

NUMBER OF WORKERS WHO PREFER MUSIC ALL THE TIME



The present study was conducted to investigate the attitude towards music of workers doing monotonous work and workers involved in mental work. There is a significant difference in the attitudes of workers of both the groups towards music. It can be said that workers doing monotonous work do not have to concentrate on their job. They need to pay minimal attention as the nature of the work they do is routine and repetitive. Studies (Mathewson, 1931; Smith, 1947; Fox, 1971; Wokoun, 1963) have shown that by introducing music workers experience their time passing quickly, they feel less bored and less tired and their productivity level also increases. On the other hand with workers involved in mental work which demands full attention and concentration (Uhrbrock, 1961) music tends to be distracting and causes their level of efficiency to decrease.

Similar results were found in the present study i.e. workers doing monotonous work think that with music their performance will improve and production will also increase. They will also feel happy whereas workers doing mental work think that music will decrease their efficiency. It will be more a source of distraction than helpful in increasing production.

Further analysis also showed that more of the monotonous work group preferred music to be played all the time as compared to the mental work group. On the other hand, more of the mental work group do not want music to be played at all as compared to the monotonous work group.

Thus for introducing music there should be more research done as this is a new field in Pakistan. There should also be rules developed, which should be strictly followed to reduce or eliminate any chaos which may be produced because of poor planning.

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CASE HISTORY AND TREATMENT OF A CASE OF PSYCHOPHYSIOLOGIC DISORDER

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Introduction :

Miss Zahida was a 29 year old school teacher who came to the author for treatment with the presenting complaints of eczema all over her body. She had been suffering from eczema for the past several years. She had been treated for eczema by many of the dermatologists of Karachi but the eczema kept on deteriorating to the extent that it had spread all over the body and began to get highly septic and infectious.

Case History:

Miss Zahida was the youngest in a family of 5 siblings. Her father died when she was about 7 years old. She hailed from a lower middle class family of old Karachi. Her eldest sister was uneducated and about 20 years older than the patient. This sister was unmarried because a suitable match could not be found for her in the family. The brother next in line was educated and was a shopkeeper. The third, also a brother, was a confirmed moderately psychotic case and hence had limited education. He was under the treatment of a psychiatrist and used to come for psychotherapy intermittently. Zahida's mother being a widow, also found it difficult to afford giving an education to her children but when her eldest son became economically sound he gave a good education to the two younger sisters with the result that sibling number four became a medical doctor. She was also married and practising as a general practitioner.

Zahida became a graduate and acquired the additional degree of B.Ed. and

received training to teach in schools. She became a dedicated school teacher. After she entered the teaching profession she began to have symptoms of eczema at the age of 22 years.

The patient was shown to various skin specialists. She temporarily responded to the drugs but the symptoms used to reemerge as she used to scratch her body during the night. Her condition worsened to the extent that her hands were tied up at night on the instructions of her physician.

Treatment:

When Zahida came to the author she was given various psychological tests which indicated emotional stress complicated by feelings of guilt. She was put on psychoanalytically oriented psychotherapy and was asked to come for psychotherapy every day. During free association it was found that she was very depressed and hesitant in talking about herself. After about one month of the commencement of the treatment she developed confidence and began to talk about herself freely. One day while talking about herself during probing she narrated an incident and began to cry bitterly after the narration.

The incident was as follows: When Zahida was about 18 years old she was saying her prayers ('Namaaz') in her house one day, when suddenly her eldest sister pounced at her and asked her to stop praying because she saw her praying during her menstrual cycle. The eldest sister was furious and abused the patient profusely. She accused the patient of committing a sin inspite of her education and knowledge of prohibition of prayers during menstruation. She threatened her about the punishment of being sent to Hell by God Almighty where she would burn forever.

After the narration of this incident the interpretation was made by the therapist about the possibility of a connection between her urge to scratch herself and the time when she heard the threatening remarks of her sister as it produced a sense of guilt in her which was not there earlier due to her ignorance of the fact that she should not have prayed during menstruation—especially since the incident really did produce a sensation of being burnt in her. Hence it was proposed that

the patient had begun to scratch her body all the time as she felt a burning sensation i.e. the fire of hell. This interpretation was resisted in the beginning by the patient but with persistent working through she began to accept the fact and reality. She admitted to herself that this incident actually did trigger off her symptoms. The therapist then consoled her and told her about her innocence and the merciful quality of "God Almighty" who is all merciful and benificient. She was also re-educated about the Islamic concepts of punishment and reward and she eventually realized that no one would be punished in such a severe manner by God for a small mistake like praying while menstruating specially since it occurred due to the ignorance of the patient. Besides, the merciful qualities of God were highlighted time after time in therapy.

After developing insight into the causes of her eczema and having an abreaction of the incident that triggered off her complaint Zahida began to respond to the treatment of the dermatologist and within a period of 1-1/2 years she was rid of her eczema completely. Today, 5 years later, she is still teaching in a school and is now happily married with two children.