Volume 5 1977

THE BANGLADESH JOURNAL OF PSYCHOLOGY

THE BANGLADESH JOURNAL OF PSYCHOLOGY

Vol. 5 1977

CONTENTS

Published by : The Bangladesh Psychological Association, C/o, Department of Psychology, University of Rajshahi, and Printed by : Md. Abdur Rashid of Popular Press Ranibazar, Rajshahi. Phone : 24 86

Bangladesh J. Psychol., Vol. 5, 1977.

Stereotypes about vasectomised men among the University students.

Nihar Ranjan Sorcar and Mahbubur Rahman.

Department of Psychology, University of Dacca

ABSTRCT

The purpose of the study was to investigate the stereotypes about vasectomised persons among the University students. A list of twenty-four adjectives was given to 85 students of the University of Dacca to describe a vasectomised person. The list contained an equal number of both positive and negative attributes from which a respondent had to choose any eight. About 62% of the respondents were found to have positive attitude towards vasectomy and the rest had negative attitude. The most frequently ascribed positive attributes to a vasectomised man were happiness, intelligence and foresightedness. The most commonly ascribed negative attributes were impotency, abnormality, depression, and rigidity. Some demographic and socio-economic variables were examined in relation to respondents' attitude. Sex, knowledge and residential status were found to be significantly associated with attitude. Relationship between parent's education, occupation and income were not, however. demonstrably significant.

Introduction

Sterlization operations, namely vasectomy and tubectomy, have been advocated by many people as the best method of fertility control. These methods are said to be economic, convenient and most effective of all methods of contraception. Despite all the advantages, these methods are not being widely accepted by the people of our country.

Several factors may be responsible for this low acceptibility of these surgical procedures. The most important one is the fear of undesirable after-effects which may follow the operations. Many people in underdeveloped countries report of physical weakness, impotency and weakened sexual desire as after-effects of sterilization operations. On the contrary, most people in developed countries report of improved health and increased sexual satisfaction after the operation (Ali, M. R., 1978). This difference

in the reported after-effects may be due to differences in the health status of the people of the developed and developing countries or may be due to the beliefs and attitudes towards sterilization operations of the people of these countries which are culturally different.

Attitude of the people towards vasectomy is an important factor for its double effects. First of all, attitudes towards such operations, like any other attitudes, determine whether somebody will accept or reject the procedure. Secondly, attitudes determine the reaction patterns that follow the surgical procedure. It has been observed that undesirable side effects of the operation are reported more frequently by people who have negative attitudes towards sterilization and have predispositions for certain reactions (Wig, N. N. et al, 1970).

The purpose of the present study was to determine the attitude of the educated youth in Bangladesh towards vasectomy and to investigate if certain factors associated with this attitude could be identified. In this study attitude was measured indirectly through finding out certain stereotypes that are prevalent in the educated youth. Since the youth are the potential users of the birth limiting methods in near future, an assessment of their attitudes towards vasectomy will help to estimate the number of prospective users of this procedure. It will also help us understand the behaviour of the educated youths towards this issue and help identify the negative stereotypes associated with this procedure which in turn will help us find out appropriate motivation-communication strategies to counteract the negative stereotypes.

Sample :

The study was conducted on a sample of 85 students of the University of Dacca. The sample was randomly drawn from all the honours and master degree classes of the University. There were 48 male and 37 female students of age ranging from 18 to 26 years, 22 years being the modal age.

Method and procedure :

The subjects were provided with a list of twenty four adjectives that could describe a vasectomised person. They were asked to choose any eight of the adjectives that, according to them, could best describe a vasectomised person.

The list of adjectives contained an equal number of positive and negative attributes. Frequency and percentage of responses for each of the adjectives chosen by the subjects were calculated. Analysis of response frequency showed that the median number of positive attributes chosen by all respondents was 6.5. But for facilitating further analysis and for computational advantage, 6 number of positive responses was taken as median value. All individuals giving 7 or more positive responses were considered as having positive attitude and all respondents giving less than 7 positive responses were categorised as having negative attitude towards vasectomy. Procedure for measuring other variables have been discussed under relevant headings.

RESULTS

1. Positive and Negative stereotypes :

Response frequency to each of the twenty-four adjectives was calculated to find out the positive and negative stereotypes present in the sample. An overwhelming majority of the students were found to have positive stereotypes about vasectomised man. About 62% students ascribed seven to eight positive or favourable attributes (out of eight possible responses) to the vasectomised persons. Table 1 shows the frequency of responses to the twenty-four adjectsves that were chosen by the subjects.

TABLE—1

Response frequency to 24 adjectives attributed to vasectomised person (N = 85).

Adjectives	Frequency of response	%	Adjectives	Frequency of response	%
Fortunate	56	65.89	Tolerant	38	44.71
Weak	16	18.83	Anemic	9	10.59
Flexible	18	21.18	Irritable	9	10.59
Entertaining	26	30.59	Enthusiastic	35	41.18
Moody	34	40.00	Amiable	26	30.59
Impotent	15	17.65	Happy	67	78,83
Wellbuilt	49	57.65	Feminine	4	4.41
Masculine	31	36.47	Abnormal	10	11.77
Unhappy	6	7.06	Strong	58	68.24
Withdrawn	6	7.06	Lethargic	6	5.89
Intelligent	67	78.83	Depressed	13	15.30
Rigid	12	20.00	Foresighted	61	71.77

It appears that the most commonly chosen positive attribute ascribed to the vasectomised men are happiness, (78.83%), intelligence (78.83%) and foresightedness (71.77%). The most commonly ascribed negative attributes are moodiness (40%) and rigidity (20%). Some people also think that a vasectomised person is impotent (17.65%), abnormal (11.77%) and depressed (15.30%). About 5% of the university students think that a vasectomised man becomes feminine. It must be mentioned here that describing a vasectomised person as impotent and feminine indicates very strong negative attitude towards vasectomy as a fertility control method.

2. Knowledge about vasectomy and attitude

Knowledge is an important factor that determines the attitude of an individual. In the present study knowledge about vasectomy was examined through four true-false items. Two of the items referred to the subject of operation i.e. whether the subject is male or female ; two other items referred to the effect of operation i.e. whether the effect is temporary or permanent, when answer to both of the questions were wrong, the subject was given a score of zero. When any one was correct, the subject received a score of 1, and when both of the answers were correct, the subject was given a score of 2. The following disiribution of scores was obtained (Table 2) for the two groups categorised as having positive and negative attitude.

TABLE—2

Distribution of respondents according to knowledge and attitude

Knowledge score	Attitude		
	Positive	Negative	Total
0 (Both wrong)	2 28.57%)	5(71.43%)	7(100.00%)
1 (One correct)	10(55.55%)	8(44.45%)	18(100.00%)
2 (Both correct)	30 71.43%)	12(28.57%)	42(100.00%)
Total—	42(62.69%)	25(37.31%)	67(100.00%)*

* 18 cases were excluded from analysis because of inadequate data.

It is evident from the data that about 10·45 percent of the respondents are totally ignorant of whether vasectomy is a male or female method or whether it is a permanent or temporary method. About 27 percent of

the respondents have only partial knowledge of vasectomy. In all about 38 percent of the respondents have inadequate or incorrect knowledge about vasectomy. Analysis of data (Table 2) also suggests that a larger proportion of those having correct knowledge about vasectomy have positive attitude towards vasectomy. It can be concluded from the findings that negative attitude towards vasectomy is partially due to lack of proper knowledge about vasectomy.

3. Sex and attitude towards vasectomy

Males and females are found to differ in attitude towards vasectomy. A larger proportion of females in comparison to males are found to have positive attitude towards vasectomy (Table 3). Computation of χ^2 shows that sex and attitude are definitely associated, females favouring vasectomy more than males do.

TABLE—3

Distribution of respondents according to sex and attitude

Sex	Attitude		
	Positive	Negative	Total
Male	22	26	48
	(45.83%)	(54.17%)	(100.00%)
Female	30	7	37
	(81.08%)	(18.02%)	(100.00%)
Total	52	33	85

$\chi^2 = 10.92$, df = 1, significant at .05 level.

It is interesting to observe that women outnumber men in terms of positive attitude towards vasectomy. Probably there is a tendency of women to shift the responsibility of fertility control and the burden of the operation on to men. A similar inquiry about tubectomy might show that males have more favourable attitude towards tubectomy thus shifting the responsibility to women. Available statistics, however, show that the practice of sterilization is higher in males (Khan, M. R. 1977).

Residential status and attitude

Residential status of respondents were examined in relation to their attitude towards vasectomy. It was hypothesised that the area of residence should have some influence in determining the attitude of the respondents. The data show that urban residence is significantly associated with positive attitude towards vasectomy (Table 4).

TABLE—4

Distribution of respondents in terms of residential background and attitude

Attitude	Residental background: Rural	Semi-urban	Urban	Total
Positive	8	7	35	50
	(16.00%)	(14.00%)	(70.00%)	(100.00%)
Negative	15	7	9	31
	(48.09%)	(22.58%)	(29.03%)	
Total	23	14	44	81*

* 4 respondents did not report residence.

$\chi^2 = 13.76$, df 2, significant at .01 level.

This finding is quite expected because the urban residents are more exposed to the mass media and clinics propagating family planning information than the rural and semi urban residents.

5. Education of parents and attitude

Parental education is an important condition that goes to make up children's attitude and behaviour. Hence a positive relationship between these two variables was hypothesised. Total years of education of both father and mother of the respondent was added together to obtain the years of education of the parents. By calculating the mean years of education of the parents of the respondents, it is observed that parents of those having positive attitude towards vasectomy have, on the average about 1.50 more years of education than the parents of those who hold negative attitude. The holders of positive attitude, therefore, seem to come from parents with higher levels of education. The Chisquare test, of course, showed no association between education of parents and attitude

of the respondents (Table 5). But the relationship needs further investigation with a large sample drawn from a normal population.

TABLE—5

Distribution of respondents according to attitude and education of parents.

Attitude of the respondents	Years of education of parents					
	10-14	15-19	20-24	25-29	30+	Total
Positive	6	14	18	9	5	52
Negative	4	15	8	3	3	33
Total	10	29	26	12	8	85

$\chi^2 = 3.14$, df 4, not significant.

6. Occupation of parents and attitude

Parents of different occupational groups seem to mould the personality and behaviour of the children in different ways. The influence of father's occupation on children's intelligence has already been demonstrated (Burt, 1961). Hence, it is resonable to expect that occupation of the father will also influence the attitude of the children. Occupation in this study was categorised into four groups : Agriculture, service, profession (e g. doctor, lawyer etc.) and business. Computation of χ^2 did not show any significant relationship between father's occupation and the children's (the respondents') attitude towards vasectomy.

TABLE—6

Distribution of respondents according to attitude and father's occupation.

Father's occupation	Attitude of the respondents		
	Positive	Negative	Total
Agriculture	4(40%)	6(60%)	10 100.00%)
Service	29(70.73%)	12(24.26%)	41(100.00%)
Business	10(52.63%)	9(47.36%)	19(100.00%)
Professional	6(54.55%)	5(45.45%)	11(100.00%)
Total	49(62.68%)	32(37.32%)	81*(100.00%)

* 4 persons did not report father's occupation.

$\chi^2 = 4.20$, df 3, not significant.

Examination of the data, however, suggests that some occupational groups of parents foster negative attitude and some other occupational groups of parents foster positive attitude in the children towards vasectomy. Thus, the children of farmers tend to have negative attitude more frequently, but the children of service holders tend to be more frequent among those having positive attitude towards vasectomy.

7. Income of the family and attitude

The relationship between income of the family of the respondents and their attitude towards vasectomy was examined. Income of the family was supposed to include all sources like salary of the members of the family, house rent, agricultural income, etc. The table below (Table 7) shows the distribution of the respondents according to family level income and attitude of the respondents.

TABLE—7

Distribution of respondents according to monthly income of the family and attitude.

Attitude of the respondents	Monthly income of the family (in Taka)				
	500-1000	1100-1500	1600-2000	2100+	Total
Positive	14	10	7	20	51
Negative	9	6	4	13	32
Total	23	16	11	33	83*

* Two did not report income.

$\chi^2 = .01$, df 1, ** not significant.

** Some degrees of freedom were lost owing to merging of groups for computational purpose.

Computation of Chisquare did not show any significant relationship between father's income and respondent's attitude. Lack of any association between income of the family and the attitude of the respondents should be interpreted with caution. A few facts need be mentioned in this connection. First of all, the income data may not be expected to be highly reliable because many respondents are quite ignorant of the actual income of the family and must have relied on guesswork. Secondly, the

university students generally come from upper and middle class families of the society and represent a more or less homogeneous income group. Hence significant variation in terms of income of the families and attitude of the respondents can hardly be expected of this sample of subjects.

8. Number of siblings and attitude

It is observed that those having negative attitude towards vasectomy tend to have larger number of siblings than those having positive attitude. The median number of siblings for the former group is 7, but for the latter group the median number of siblings is 6. The following table (Table 8) shows the distribution of two groups of respondents.

TABLE—8

Distribution of respondents according to attitude and number of siblings

Attitude	Numder of siblings										
	1	2	3	4	5	6	7	8	9	10+	Total
Positive	0	0	2	1	7	5	4	8	3	3	33
Negative	2	2	3	7	8	5	6	8	7	4	52
Tatal	2	2	5	7	15	10	10	16	10	7	85

It can be pointed out that the parents of the students of honours and masters classes of the University, as represented in the sample, belong to relatively older age group who have completed their ultimate family size. They also represent a generation when family planning was largely unknown and birth control technology was not as developed as today. Hence large variation among those people in terms of number of children cannot be expected. In view of the above considerations, the difference in the median number of siblings of those having positive and those having negative attitude seem to be significant. The conclusion which becomes eventual is that those coming from larger families tend to have negative attitude towards vasectomy. Parental attitude favouring large family and opposing family planning may have influenced the formation of negative attitude towards vasectomy in the respondents. Further research along this line may establish the relationship suggested above.

Discussion and conclusion :

Results of the study show that majority of the university students (62%) hold positive attitude towards vasectomy, though a considerable proportion (38%) also have negative attitude. The most common negative stereotypes associated with vasectomy, are moodiness, (40%), rigidity (20%), impotency (17.65%), depressivity (15.30%) and abnormality (11.77%). The most common favourable attributes associated with vasectomy are happiness (78.83%), intelligence (78.83%) and foresightedness (17.77%). But ascribing only a single negative attribute along with a number of other positive attitudes to a vasectomised person is sufficient to indicate aversion of the procedure by the respondent.

The present study examined the relationship of attitude towards vasectomy with a number of socio-economic and demographic variables. It has been observed that knowledge about the procedure is an important determinant of attitude towards the procedure. Hence a modification in the existing knowledge about vasectomy may be expected to produce a change in the attitude pattern of the respondents.

Sex has also been found to be associated with attitude towards vasectomy. Female respondents have been more frequent among those having positive attitude towards vasectomy, thus shifting the responsibility of fertility control to males. Educational programmes for females, aimed at learning to share equal responsibility of fertiliiy control with the males, may improve the situation.

Residential status of the subjects have also been found to be an important variable associated with attitude towards vasectomy. Rural residence seem to favour negative attitude. Hence, for a desired change in the attitude of the rural residents, mass media programmes should be more rural oriented.

Other socio-economic variables like parents' occupation, education, income and number of children (i.e. siblings of the respondents) do not seem to make reliable difference in the attitude of the respondents towards vasectomy. Though some occupational groups of parents and particular levels of education has been found to favour positive attitude in the respondents, such relationships do not stand the test of statistical significance. There is need of further research in this area.

Reference :

1. Ali, M. R. Psycho-sexual aftereffects of vasectomy and tubal ligation : A research proposal. Paper presented at the seminar on voluntary sterilization, BAVS, Dacca, January 21-22, 1978.

2. Burt, C. Intelligence and social mobility, Birt. Statist. Psychol., 1961, 14, 3-24.

3. Khan, M. R., Bangladesh Fertility Survey, Draft report No. 1 (Unpublished), Directorate of Population Control and Family Planning, Government of Bangladesh, Dacca, 1977, 7, 1-8.

4. Wig, N. N., Singh, S., Shasi, G. Issacc. Psychiatric Symptoms following vasectomy, Indian J. Psychiat., 1970, 12, 169-176.

Bangladesh J. Psychol., Vol. 5, 1977.

A study of the correlation between the Non-Language Test of Mental Ability (NLTMA) and Terman's Non-Language Multi-Mental Test (NLMMT).

Amzad Hossain Shah

Department of Psychology, Rajshahi University

ABSTRACT

It has been experimentally observed that individuals brought up in different cultural environments react differentially to tests of mental ability considered to be culture-fair. The non-language test of mental ability (NLTMA) was constructed by the author at the University of Rajshahi with due regard for the cultural environment of individuals of this country. The present paper reports an attempt to investigate if our subjects will do significantly better on NLTMA than on Terman's NLMMT (Form A) and if the former will correlate with the latter. For the purpose of the present study a random sampte of 67 students of Class X drawn from three High Schools of Rajshahi Town was used as subjects. These two tests were applied to them with an interval of two days between the sessions. Our subjects showed significantly better performance on NLTMA than on NLMMT. These tests were found to be positively correlated. Reasons have been advanced to show that these tests cannot be considered to be parallel.

INTRODUCTION

A critical survey of the literature on studies in respect of the culture-fairness of non-language tests of mental ability shows that, for almost all tests of this kind, conclusive, experimental evidences in support of their culture-fairness are two meagre to rely on (Anastasi, 1963 ; Butcher, 1968 ; Freeman, 1960 ; Hunt, 1961 ; Guilford, 1967). In other words, individuals brought up in different cultural environments have been found to differ rather significantly in their mean performances on non-language tests of mental ability which are considered to be culture-fair. The non-language test of mental ability (NLTMA) referred to in this paper was developed by the author at the University of Rajshahi with due considerations for the cultural environments of individuals of this country (Shah,

1974). In view of this fact it may be theoretically expected that our subjects will do significantly better on NLTMA than on any similar test developed abroad to which the former may bear some correlation.

The present study was undertaken to investigate experimentally to what extent the aforesaid theoretical expectations would come true or not. For this purpose Terman's Non-Language Multi-Mental Test was chosen inasmuch as the test differs but little from the NLTMA in respect of its contents.

The following hypotheses were tested :

(1) Our sibjects will do significantly better on NLTMA than on Terman's NLMMT Form A.

(2) The NLTMA will have little correlation with the NLMMT Form A.

METHOD

Subjects :

A sample of 67 students of class X was drawn randomly by means of a table of random numbers (Dixon et. al., 1951) from the population of students of class X in 3 High Schools of Rajshahi Town in Bangladesh. The sample consisted of 65.67% boys, 34.33% girls, 38.81% Science and 61.19% Humanities students.

Tests used :

Non-Language Test of Mental Ability (NLTMA) and Terman's Non-Language Multi-Mental Test Form A (NLMMT).

Procedure :

After an interval of two days, the NLMMT Form A was administered to the same group of subjects on which NLTMA was previously applied. Subjects were seated one behind another in a room suited for the purpose. Care was taken to see that they felt at home and enjoyed the testing situation. They were praised and encouraged to have them motivated. They were asked to take all the time they needed and not to make haste. They were asked not to omit any item. When all the subjects finished answering

the items in the manner suggested, the answer sheets were taken back. The scoring was performed as usual (Terman et al., 1942). The significance of the difference between the mean performances on NLTMA and NLMMT Form A was statistically tested (t-test). The SE_D was estimated by using formula,

$$SE_D = \sqrt{\sigma^2 M_1 + \sigma^2 M_2 - 2r_{12}\sigma M_1 \sigma M_2}$$

The correlation between NLMMT and NLTMA scores was calculated by formula,

$$r = \frac{\frac{\Sigma x'y'}{N} - C_x C_y}{\sigma' x \sigma' y}$$

(Garrett, 1960 ; Guilford, 1965).

RESULTS

The raw scores obtained on NLTMA and NLMMT were translated into frequency distributions as given in Tables 1 and 2.

TABLE—1

Frequency Distribution of NLTMA Scores.

Group X-values	f	Smoothed f
70 and above	0	1.67
65—69	5	6.00
60—64	13	14.00
55—59	24	15.33
50—54	9	12.67
45—49	5	6.00
40—44	4	3.33
35—39	1	3.33
30—34	5	2.33
25—29	1	2.00
24 and below	0	0.33
	N=67	

TABLE—2

Frequency Distribution of NLMMT Form A Scores

Group X-values	f	Smoothed f
42 and above	0	0.34
38—41	1	0.67
34—37	1	2.33
30—33	5	9.67
26—29	25	15.33
22—25	18	19.00
18—21	16	11.67
14—17	1	6.33
10—13	2	1.00
9 and below	0	1.33
	N=67	

TABLE—3

Comparison Between Mean Performances on NLTMA and NLMMT Form A.

	Mean	SD	Variance	N	t-ratio
NLTMA	53.80	9.60	92.16	67	30.26
NLMMT Form A	27.47	4.88	23.81		

The PM correlation between NLTMA and NLMMT Form A scores was estimated to be 0.64, a significant ($P<0.01$) positive correlation.

DISCUSSION

While comparing the mean performances of our subjects on NLTMA and NLMMT (Form A), it was found that t equaled 30.26. Referring to the table of t distribution, we find that t reads approximately 2.00 and 2.65 at 0.05 and 0.01 levels respectively for 66 df. The obtained t of 30.26 far exceeds those values and is, therefore, significant ($P<0.01$). It, therefore, appears reasonable to think that there is every likelihood on the part of our subjects to do significantly better on NLTMA than on NLMMT.

The PM correlation between NLTMA Form A scores was found to be moderately high (0.64). This correlation coefficient was found to be significant beyound 0.01 level for 65 df ($P < 0.01$).

Because of the significant correlation between NLMMT and NLTMA, a question may be raised as to whether these two tests can be treated as parallel. But for the reasons put forward below, these two tests cannot be taken as parallel. First, the obtained correlation coefficient is not as high as 0.90 or more. Most of the authors of standard intelligence tests report reliability coefficients of at least 0.90 between the parallel forms of their tests (Garrett, 1960). The obtained correlation between NLTMA and NLMMT falls far short of that value. Secondly, Ferguson (1971) speaks of parallel tests as having similar test contents, types of items, instructions for administering and the like for different forms. He also maintains that the parallel forms of tests should have approximately equal means, equal standard deviations and equal intercorrelations. Gulliksen (1950) says that the parallel tests have equal means, equal variances and equal intercorrelations with one another. Anastasi (1963) comments that the parallel-form tests should contain the same number of items, and such items should be expressed in the same form and should cover the same type of content. She further maintains that the range and difficulty level of the items likewise be equal and that instructions, time limits, illustrative examples, format, and all other aspects of the tests need to be checked for comparability.

Judged by any criterion of parallel tests mentioned above, NLTMA and NLMMT Form A cannot be considered to be parallel.

REFERENCE

1. Anastasi, Anne. Psychological Testing. New York : Macmillan, 1963.
2. Anstey, E. Psychological Tests. London : Nelson, 1966.
3. Butcher, H. J. Human Intelligence. London : Methuen, 1968.
4. Dixon, W. J. and Massey, F. J. Jr. Introduction to Statistical Analysis. New York : McGraw-Hill, 1951.
5. Ferguson, G. A. Statistical Analysis in Psychology and Education. New York : McGraw-Hill, 1971.

6. Fisher, R. A. Statistical Methods for Research workers. London : Oliver and Boyd, 1967.

7. Freeman, F. S. Theory and Practice of Psychological Testing (Revised Edition). New York : Holt, Rinehart and Winston, 1960.

8. Garrett, H. E. Statistics in Psychology and Education. London : Longmans, 1960.

9. Ghiselli, E. E. Theory of Psychological Measurement. New York : McGraw-Hill, 1964.

10. Guilford, J. P. Psychometric Methods. New York : McGraw-Hill, 1954.

11. Guilford, J. P. Fundamental Statistics in Psychology and Education. New York : McGraw-Hill, 1965.

12. Guilford, J. P. The Nature of Human Intelligence. New York : McGraw-Hill, 1967.

13. Gulliksen, H. Theory of Mental Tests. New York : Willy, 1950.

14. Hunt, J. McV. Intelligence and Experience. New York : Ronald, 1961.

15. Shah, A. H. The Construction and Standardization of a Non-Language Test of Mental Ability for secondary school students (Class IX-X). Unpublished Ph. D. Dissertation, 1974.

16. Terman, E. L. McCall, W. A. and Lorge, I. Non-Language Multi-Mental Test. Columbia University Teachers' College, 1942.

Bangladesh J. Psychol. Vol. 5, 1977.

Anxiety, Intelligence and Sholastic Achievement in Secondary School Children

Sukumar Bose and Amiya Kumar Basu

Department of Applied Psychology, Calcutta University.

ABSTRACT

The reactions among manifest anxiety, intelligence, and school achievement of children in grades—five, six and seven—were investigated. Correlations between anxiety and intelligence were negative, with only that for seventh grade girls being significant. All the correlations between school achievement results and intelligence were significant. Most correlations between anxiety and school achievement results were negative, but only seventh-grade girls showed a consistent pattern. An attempt to increase the efficiency of predicting scholastic attainment using anxiety and intelligence as predictor variables led to some improvement for seventh-grade girls and sixth-grade boys only. As increased efficiency was demonstrated only in relatively highly anxious groups, use of manifest anxiety as a predictor variable does not appear economical for secondary school children in general.

INTRODUCTION

The divergence between potential and performance has been of considerable interest to personality theorists and educators. They maintain the view that personality attributes, particularly anxiety, are significant factors in predicting this divergence. Many studies have been made for comparing performance of high and low anxious Ss on a variety of experimental and academic tasks. (Broen, 1959 ; Castaneda et al., 1956 ; McCandless and Castaneda, 1956 ; Morgan et al., 1960 ; Palermo et al., 1956 ; Patterson et al., 1960 ; Phillips et al., 1959 ; Tarason et al., 1960 ; and Waite et al., 1958). From a theoretical basis formulated by Hull (1952) several deductions were made by Spence (1953), one being that if the learning situation is a simple one involving a single or dominant response, anxious Ss will show superior performance because of their drive

level, but if the learning situation is complex, a number of response tendencies would be aroused, and if the dominant response is not correct, high drive level will impede performance.

This formulation may be generalised to the relationship between anxiety and scholastic performance, particularly in children. Sarason and others (1960) have worked intensively with situational or test anxiety in children which, they assume, has significant effort to the understanding of anxiety, in general. Little systematic research has been done concerning relation between children's anxiety, as measured by a general manifest anxiety scale, and school achievement results (McCandless & others, 1956). But the researches that were done so far in this direction showed negligible consistent patterns and the majority of relationships were of a non-significant, low manitude. McCandless and Castaneda (1956) suggested that the anxiety score might be useful when considered with intelligence in predicting school achievement. Thus, the study of the relations among these variables over an expanded grade-sex range seemed worthwhile.

This study was aimed at investigating the relations among anxiety, intelligence, and school achievement of the secondary school children and exploring the use of statistical combination of intelligence and anxiety in an effort to increase the efficiency of predicting scholastic performance.

METHOD

Subjects :

Ss were all fifth, sixth, and seventh-grade boys and girls in secondary schools of Calcutta city, for whom data were available for the three variables. Homes were predominantly upper, lower and middle class.

Tools used :

The study was carried on with the help of Children's Manifest Anxiety Scale (CMAS) developed by Castaneda and others (1956) and adapted in Bengali (Basu, 1975) Wechsler-Bellevue Intelligence test and school achievement results of the annual examinations in different grades of the schools chosen as such.

Proredure :

Tests were administered with the regular standard instructions within a period of four months with the assistance of the class teachers, school achievement results of the annual examinations of all the selected subjects in different grades were recorded from all the schools chosen for this investigation, and the results were converted into standard scores for ensuring bias-free estimation.

RESULTS AND DISCUSSION

Table 1 presents the product-moment correlations between IQ and anxiety scores by sex and grade groups. The only significant one is that for seventh-grade girls, indicating that high anxiety is associated with low IQ. This relation is similar to that found by McCandless and Castaneda (1956) for sixth-grade girls ($r = -.43$); by Hafner and Kaplan (1959) ($r = -.21$ between Otis IQ's and anxiety, as measured by the CMAS) for fifth-grade boys ($r = -.22$ between anxtety test-scores and school achievement scores).

TABLE—1

Correlation between IQ and CMAS scores (N = 270)

	Fifth Grade		Sixth Crade		Seventh Grade	
	Boys	Girls	Boys	Girls	Boys	Girls
n	38	34	58	53	45	42
r	−.09	−.25	−.30	−.08	−.34	−.56*

*P < .01

Correlations by grade and sex for anxiety and IQ with school achievement results are presented in Table 2.

As expected, r's between school achievement and intelligence were significant. showing a fairly strong, positive relationship. It may be noted that only 7 of the 18 correlations between anxiety and school achievement were negative and significant, those for sixth—and seventh-grade girls accounting for 3 in both the cases. These two groups showed a consistent pattern. One of the significant correlations was found for fifth-grade boys. There was some departure from the findings as revealed by the study of McCandless and Castaneda (1956). Their findings found 13 of

TABLE—2

Correlations of Anxiety and IQ with School Achievement Results (N=270)

Grade	Sex Group	N	School Achievement Results: Language CMAS	Language IQ	Mathematics CMAS	Mathematics IQ	Science CMAS	Science IQ
V	Boys	38	−.16	.42**	−.26**	.46**	−.16	.55**
	Girls	34	−.05	.49**	−.21	.55**	−.09	.49**
VI	Boys	58	−.08	.45**	−.09	.62**	−.17	.57**
	Girls	53	−.40**	.65**	−.29**	.59**	−.38**	.48**
VII	Boys	45	−.06	.67**	−.18	.63**	−.19	.76**
	Girls	43	−.43*	.69**	−.42**	.67**	−.41**	.58**

*P<.05 **P<.01

30 correlations to be significant, and exhibited the most consistent patterning for the sixth-grade girls. But in this study seventh-grade girls scored highest on the anxiety scale of the group tested (M=19.56), with sixth-grade girls next highest (M=18.47) and fifth-grade boys in the order of hierarchy (M=17.13). The fact that the seventh-grade girls had the highest anxiety scores and consistent significant negative correlations between anxiety and school achievement suggests that high anxiety may interfere with scholastic performance. The more parsimonious interpretation may be that high manifest anxiety simply interferes with effective task-taking behaviour.

The seventh-grade girls were divided into high and low anxious groups at the mean and t-tests were computed to check the posibility that high anxious girls do in fact score lower on the achievement tests than low anxious girls. These girls did not differ significantly on intelligence test scores (MS=111.5, 115.6 ; t=1.8). Significant ts (P<.02) were obtained for Language and Mathematics (t=2.17 & 2.18 respectively) indicating that high anxious girls scored lower on the school achievement results than the low anxious girls. For the school achievement scores on science t was less than 1.00.

Clear inspection of the seventh-grade girls' coefficients in Table 2 reveals that the highest negative relationships were found for Language which seem relatively less complex and cognitively demanding than

Mathematics and science for which lower negative relationships were found. This finding is contrary to the theoritical notion that high anxiety interferes more with complex, difficult tasks and may even facilitate less complex ones. This result is consistent with that of Phillips, King and McGuire (1959), who could not support the hypothesis that anxiety differentially affects performance on psychometric tests differing in difficulty and complexity for seventh-grade boys and girls.

Multiple correlations were computed to evaluate the increased efficiency in predicting school achievement by combining anxiety and intelligence scores. The resulting coefficients (R) as shown in Table 3 indicate some improvement for seventh-grade girls and fifth-grade boys only, but, as these are the two most anxious groups tested, improvement

TABLE—8

Multiple correlations (R) for school achievement results with CMAS scores and IQ (N=270)

Grade	Sex Group	N	School Achievement Results		
			Language	Mathematics	Science
V	Boys	38	.52***	.50***	.51***
	Girls	34	.57**	.69***	.53***
VI	Boys	58	.49*	.62***	.59***
	Girls	53	.50*	.56***	.66***
VII	Boys	45	.69***	.68***	.73***
	Girls	42	.72***	.69***	.62***

*P<.05. **P<.01. ***P<.001.

may be made only where the anxiety rises above some relatively high point and tends to interfere with school achievement results regardless of task complexity. The consideration of anxiety, as measured by the CMAS, for predicting school achievement results in the secondary school grades does not appear economical, except perhaps for high anxious Ss like seventh-grade girls.

REFERENCE

Broen, W. E. Jr. Anxtety, intelligence and achivement. Psychol. Rev., 1959, 5, 701-704.

Castaneda, A, McCandless, B. R., & Palermo, D. S. The children's form of the Manifest Anxiety Scale. Child Developmt., 1956, 27, 317-326.

Castaneda, A, McCandless, B. R., & Palermo, D. S. Complex learning and performance as a function of anxiety in children and task difficulty. Child Developmt., 1956, 27, 328-332.

Hafner, A. J. & Kaplan, A. M. Children's manifest anxiety and intelligence. Child Developmt., 1959, 30, 269-271.

Hull, C. L. A Behaviour System. New Haven : Yale Univer. Press, 1952.

McCandless, B. R., & Castaneda, A. Anxiety in children, School achievement, and intelligence. Child Developmt., 1956, 27, 379-382.

Morgan, E., Lutton-Smith, B., Rosenberg, B. G. Age changes in the relation betwean anxiety and achievement. Child Developmt., 1960, 31. 515-519.

Palprmo, D. S., Castaneda, A., & McCandless, B. R. The relationship of anxiety in children to performance in a complex learning task. Child Developmt., 1956, 27, 333-337.

Patterson, G. R., Helper, M. E. & Wilcott, R. C. Anxiety and verbal conditioning in children. Child Developmt., 1960, 31, 253-259.

Phillips, B. N., King, F. J., & McGuire, C. Studies on anxiety : 1. Anxiety and performance on psychometric tests varying in complexity. Child Developmt., 1959, 30, 253-259.

Sarason, S. B., Davidson, K. S., Lighthall, F. F., Waite, R.R., & Ruebush, B. K., Test anxiety in elementary school children : a report or research. New York ; Wiley, 1960.

Spence, K. W. In symposium on relationships among learning theory, personality theory, and clinical research. New York : Wiley, 1953, pp. 1-21.

Waite, R. R., Sarason, S. B., Lighthall, F. F., & Davidson, R. S. A study of anxiety and learning in children. J. Abnorm. Soc. Psychol., 1958, 57, 267-270.

Bangladesh J. Psychol., Vol. 5, 1977.

A study of cross-cultural differences in Extreme Response Style

Ramanath Kundu
Department of Psychology, Calcutta University
and
P. K. Chakrabarti
Nagaland College of Education, Kohima

ABSTRACT

Cross-cultural differences in Extreme Response Style (ERS) in attitude scales were studied with the help of two scales and between six groups of subjects (Viz., Marwari, Gujrati, Bengalee, Punjabi, Hindusthani and South Indian). Differences in the item standard diviations were taken as the measure of intergroup difference in ERS. Results showed marked intergroup difference. The specific conclusions are : (1) In some cases differences are more marked for the negatively stated items than positively stated ones. (2) The differences depend, to some extent, on the content and style of statement of the items.

INTRODUCTION

As early as 1946 Cronbach recognized Extreme Response Stytle (ERS)* as a major response set, and he suggested a reduction of Likert-type scales to a two-choice format as a means of controlling its effect. Triandis and Triandis (1962) (Chun et al., 1974) found ERS differences between U. S. and Greek student samples. Brengelmann (1959) (Chun et al., 1974) compared the ERS effect between German and English samples, and Triandis, Malpass and Davidson (1972) mentioned the study by Zax and Takahashi (1967) comparing U. S. and Japanese samples.

These studies did not discuss systematically the implications of their results. Triandis (1972), however, recognized ERS differences as a problem in cross-cultural research. The consequences of ERS may be manifold. First, thc ERS differences can produce differences in group means that

---

* Foot Note :- By the term Extreme Response Style it is meant the tendency to endorse extreme response categories in a multiple response category format, for example, "Strongly agree/Strongly disagree" rather than less extreme response like "Agree/Disagree" or "Undecided".

would be uniterpretable. Secondly, they may affect the level of item inter-correlations within a measure, thus spuriously raising or lowering the index of internal consistency and also the magnitude of correlations between measures may be affected by ERS. Finally, the ERS differences could influence the analysis of underlying dimensions (i.e., factor or cluster analysis).

In the simplest case where there is only one item in the measure, if the groups under comparison are homogeneous in the direction of answering, then the group with a stronger ERS would have higher score than with a weaker ERS. If the scale consists of several items that are phrased and scored in one direction, the difference between the groups would be the sum of such differences contributed by individual items, and the resulting inflated and deflated components may, at best, cancel out producing no group difference. If the said components do not cancel out, observed differences would be uninterpretable.

On the other hand, the groups whose memders display stronger ERS would have a larger variance on indidual item than the weaker ERS group. This fact would affect the item inter-correlation lowering the internal consistency of the items for the weaker ERS group.

Again, since ERS could affect the size of item intercorrelations, it is capable of introducing complications in factor or cluster analyses. It is, therefore, important to study the ERS particularly when the sample is likely to be multinational or at least a multi-community, so as to be cautious against the above difficulties.

The present investigation attempts to study the feauture of ERS keeping in view the following fundamental questions :

Does the ERS depend on the format or content of the item concerned ? If it is so, is it possible to eliminate such contents or format from the measuse so that inter-group differences in the ERS may be minimized ?

METHOD

The Tests :

Two attitude inventories, one measuring attitude towards liberalism and another towards analytical mindedness (Shaw and Wright, 1967) were administered. All the items in both the inventories were to

be responded to on a 5 point category from "Strongly agree" to "Strongly disagree" or from "Always" to "Never".

Items in the first scale, which numbered 26, were framed in the form of general statements regarding various aspects of the social systems, customs, policy of the government, principles, ideals etc. 13 items, in this scale, were in the positive direction and 13 were in the reverse direction.

The number of items in the second inventory was 20 and in this scale items were given in the form of personal confession. Here also, 10 items were in the positive direction and 10 were in the negative direction.

The Sample :

The sample consisted of six groups of people belonging to the different states of Indian Union, viz., Marwari (from Rajasthan), Gujrati (from Gujrat), Hindusthani (from Bihar), Bengalee (from West Bengal), Pujabi (from the Punjab and Haryana and South India (from Tamil Nadu, Kerala and Andhra). The number of cases in each group is given below.

Category		No.	Category		No.
Marwari	(M)	58	Bengalee	(B)	68
Gujrati	(G)	64	Hindusthani	(H)	77
Punjabi	(P)	57	South Indian	(S)	66
		Total :			390

In selecting individual cases in each sample, the undernoted variables were controlled.

Age :

The age varied from 18-21 years and the mean age for all the groups taken together was 19.3 years.

Sex :

Only male subjects were tested.

Education :

All the testees passed the Higher Secondary Examination of the West Bengal Board of Secondary Education and were taking the Bachelor of Commerce course of the Calcutta University in the same college.

Socio-economic status :

All the individuals belonged, more or less, to the affluent class of the society.

Residence :

All thc individuals tested were residing at Calcutta for at least 17 years, i.e., from very early childhood or since birth.

Thus the only important variable was that the different groups hailed from different communities. Testing condition was, however, controlled by conducting the testing on the same day in different sessions group by group, each group comprising of all the population varieties. Instructions were given orally and the operation was conducted by the same person.

Analysis :

Item means and item standard deviation for each group were computed separately. Since the standard deviation of a given item reflects the degree of extreme responses for that item, cross-example differences in standard deviations of individual items have been taken as a measure of the differential degree of ERS among the samples (Chun, Campbell and Yoo, 1974). Since the response endorsements in each item by each group of samples are uncorrelated, the cross example differences of item standard deviation were tested by the formulla :

$$t = \frac{\sigma_1 \sim \sigma_2}{\sqrt{\sigma_1^2 + \sigma_2^2}}$$ (Guilford, 1950)

[Since $r_{12} = 0$]

RESULTS AND DISCUSSION

Results show marked intergroup differences in ERS. In the first attitude scale (i.e., attitude towards liberalism), items which were framed from the negative direction showed greater intergroup variation in ERS in comparison to the items which were worded in the positive direction. Table 1 presents evidences in favour of this statement.

TABLE—1

Extent of intergroup differences in ERS.

First Scale

	No. showing intergroup difference	No. of items in the scale	Percentage
Positively stated items	3	13	23.07
Negatively stated items	6	13	46.15
Total	9	26	34.62

The range of items standard deviations was .98—2.15, for the items framed as the positive statements while the same range for the items having negative statements was .91—2.07. Thus the ranges were found to be more or less similar.

In the following table the extent of intergroup differences in the ERS for the second attitude scale have been presented.

TABLE—2

Extent of intergroup differnces in ERS.

Second Scale

	No. showing intergroup difference	No. of items in the scale	Percentage
Positively stated items	3	10	30
Negatively stated items	4	10	40
Total	7	20	35

In this scale no marked difference in ERS for the positively and negatively worded items can be noticed. The magnitude of the differences in the various items may be noted in the following tables.

TABLE—3

Magnitude of Intergroup differences in ERS.

First Scale

(t-ratio)

Item No.		G	B	H	P	S
1	M	1.50	2.16*	1·11	1.93	2.18*
	G		2.33*	1.73	1.44	1.82
	B			3.11**	2.18*	2.07*
	H				1.66	2.41*
	P					1.12
2	M	.41	.86	1.12	1.99*	1.97*
	G		2.05*	.42	.83	.48
	B			.68	1.12	.19
	H				.96	1.72
	P					2.11*
7	M	1.68	1.92	2.11*	3.61**	1.21
	G		2.14	1.41	2.18*	1.62
	B			.38	1.25	2.18*
	H				1.12	2.15*
	P					1.43
12	M	1.14	2.13*	3.16**	2.79*	1.73
	G		1.43	1.33	1.98*	1.21
	B			1.12	.98	1.03
	H				2.05*	1.66
	P					.90
16	M	1.34	.21	.48	1.96	1.03
	G		1.73	2.25	2.18	1.16
	B			2.10	3.41	2.01
	H				2.14	1.41
	P					.91

Contd...

TABLE—3 (Contd.)

Item No.		G	B	H	P	S
18	M	1.01	1.93	3.12**	4.33**	1·66
	G		1.18	2.10*	3.01**	.59
	B			1.82	1.23	1.32
	H				2.41*	1.73
	P					1.51
19	M	1.41	2.13*	4.11**	3.12**	1.68
	G		1.32	1.42	3.10*	1.18
	B			.96	1.33	1.42
	H				.42	1.60
	P					1.16
23	M	1.28	1.18	.49	.62	1.16
	G		2.52*	2.31*	1.82	.96
	B			.21	2.28*	1.43
	H				3.41**	1.12
	P					1.73
26	M	3.11**	2.10*	1.43	1.57	1.43
	G		2.16*	3.19**	2.55*	1.71
	B			1.68	3.12**	2.09*
	H				1.60	1.53
	P					1.72

Note : Items showing no intergroup difference in ERS have been omitted.

*P .05

**P .01

TABLE—4

Magnitude of Intergroup differences in ERS.

Second Scale

(t ratio)

Item No.		G	B	H	P	S
27	M	2.16*	1.19	1.34	2.41*	1.63
	G		2.13*	1.42	.95	1.33
	B			1.01	2.12*	1.49
	H				1.73	.88
	P					.75
29	M	1.43	1.66	1.73	1.43	1.01
	G		2.15*	1.87	2.18*	1.41
	B			1.22	1.68	1.15
	H				1.34	.78
	P					2.16*
32	M	1.24	1.43	2.91**	1.83	2.00*
	G		.68	1.19	2.51*	1.96*
	B			2.11*	1.92	.78
	H				1.73	1.46
	P					1.55
36	M	.93	2.41*	1.31	2.48*	1.91
	G		1.38	1.73	1.43	1.29
	B			1.33	1.67	1.58
	H				2.31*	2.18*
	P					2.01*
40	M	1.28	1.33	1.43	1.68	1.18
	G		2.11*	1.41	1.33	1.91
	B			.94	.89	1.73
	H				1.51	1.82
	P					2.10*

Contd...

TABLE—4 (Contd.)

Item No.		G	B	H	P	S
44	M	2.16*	2.11*	1.63	1.43	1.21
	G		.97	1.13	1.01	.96
	B			.48	1.83	1.32
	H				1.43	1·21
	P					.81
46	M	.64	1.43	2.55*	1.41	1.63
	G		.73	1.43	1.99*	1.38
	B			.60	.43	1.03
	H				1.23	2.05*
	P					1.39

Note : Items showing no intergroup differences in ERS were omitted.

* p .05

** p .01

It is evident from these tables that distinctly different trend in the ERS can be noticed among the groups, But it varies from item to item, so that nothing specific can be said out of this trend.

Again, so far as the content is concerned, items having some statement concerning religion (items 1, 7, 23) showed intergroup difference in ERS. Similar other contents showing intergroup differences in ERS are rights and previlleges of trade and business (items 2, 16, 18, 19), inherited racial character (item 12) and equal right for natural wealth (item 26). Nothing specific can be noted in the contents of the items showing intergroup difference in ERS in the second scale of attitude used.

CONCLUSIONS

The results lead to the following conclusions :

(a) Different communities differ in the extreme Response Style in multiple—choice Likert-type scales.

(b) The differences, in many cases, depend on the style of statement and content of the items.

It appears possible that with more precise experimentation specific contents can be identified which are responsible for producing differences in ERS. This identification will help to eliminate such contents from the scales in order to minimise differences in ERS in cross-cultural situations.

REFERENCES

Chun, K. T., Campbell, J. B., and YOO, J. H. Extreme Response Sytle in Cross-Cultural Research, J.Cross-Cultural Psychol. 1974, 5, 465-480.

Cronbach, L. J. Response sets and test validity, Educ. Psychol. Measmt., 1946, 6, 475-494.

Guilford, J. P. Fundamental Statistics in Psychology and Education, New York : McGraw-Hill, 1950.

Shaw, M. E. and Wright, J. M. Scales for the measurement of attitudes. New York : McGraw-Hill, 1967.

Triandis, H. C. The Analysis of subjective Culture. New York : Wiley, 1972.

Triandis, H. C., Malpass, R. S. and Davidson A. R. Cross-cultural Psychology. In B. J. Siegel (ed), Biennial Review of Anthropology, California : Stanford University, 1972, pp. 1-84.