

A comparative study of the inmates of Detention Home and slum children with respect to neuroticism, environmental and certain biographical factors¹

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This study aimed at investigating the association of delinquency with neuroticism and certain environmental and economical factors. One hundred and ninety-one delinquent boys and 184 delinquent girls of a Detention Home were compared with 200 slum boys and 200 slum girls without any crime history. A Neurotic Personality Inventory was applied to ascertain presence and degree of neuroticism. A Biographical Questionnaire was used to collect information on economical and environmental aspects. It was observed that: (a) The percentages of neurotics among delinquents and non-delinquents were not significantly different. (b) Some environmental factors were criminogenic as these had significantly higher incidences in delinquent groups. (c) A few environmental factors were significantly associated with neuroticism but were not simultaneously so, for all the groups. (d) Some of the results obtained were identical with those obtained in Western countries whereas some difference was also observed.

Key words: biographical factors, neuroticism, delinquency.

Modern attitude towards the individuals involved in antisocial activities is diagnostic, preventive and not punitive as in earlier days. Various studies have been undertaken to account for the antisocial behaviour of human beings; the results demonstrate that it cannot be explained by any simple cause and effective theory. Various environmental factors, diverse personality traits and their interactions influence the final outcome.

The roles of environment, family structure and certain personality traits upon the genesis of antisocial behaviour, have been investigated in details in Western countries (Bennett, 1960; Glueck & Glueck, 1966; Simey, 1949). It was thought that such an investigation should also be conducted in India as the family structure and social values etc., prevailing in this part of the world are markedly different from those of the Western countries. The present study was taken

up with this idea in view.

To start with, it was decided to limit the frame of reference to the adolescent groups only, as there is some scope for preventive as well as remedial measures. Instead of covering several personality traits at a time, it was thought proper to select one particular trait. Of the different personality traits neuroticism was taken into consideration as it was felt that it might have some relation with delinquency. Researchers like Freud, Friedlander, Gordon and others are of the opinion that neuroticism is a result of "moral conflict" psychologically internalized within the individual whereas delinquency is an acting-out behaviour of the conflict between the unsocialized individuals and the environment. But as such, neurotics and delinquents do not form mutually exclusive groups. There are some neurotic symptoms which often lead to deviant and antisocial behaviours. Actually delinquent acts may arise in many ways; it may be an outlet of aggression, it may be "a disguised and symbolic neurotic symptom, the motives of which

¹ Data were collected by Miss Sadhana Mitra, in connection with another study under the guidance of the authors.

are hidden through repression or it may solve emotional conflict" (Bennett, 1960, p. 23). This study, however, intended to focus on some of these points. Briefly the plan of this study was to investigate a group of delinquent children with reference to one important personality dimension i.e., neuroticism against the background of their home environment and social status and to compare the group at each stage, with a group of non-delinquent children to identify the points of difference. Along with this an attempt was also made to ascertain the relationship of the environmental factors with neuroticism among these groups of children and also to find out whether the nature of such influence, if any, varied from group to group.

Subjects

A brief description of the groups selected for the study is presented below.

Group-I: Adolescents who have committed acts defined as offences by the criminal codes, can be identified as delinquents. These young offenders are usually placed under the custody of a Detention Home set up by the Government until their cases are decided by the court. For the present study the inmates of such a Detention Home were selected to form the delinquent group which would be referred as HOD hereafter. Data were collected from 200 boys and 200 girls of the Home. But as cases of abandoned children kept under police custody had to be eliminated, data for 191 boys and 184 girls were finally available. The age range for the two sex groups was 13 to 18 years.

Group-II: The group of non-delinquent children consisted of 200 boys and 200 girls living in different slums in the city of Calcutta. This group was matched with the former one as far as age range, educational level, monthly income of the family, housing condition etc., were concerned. Most of them were found to be students of different night schools located

at the slum areas, but the academic level was quite low in comparison to their age. These children were considered to be non-delinquent in nature as neither the police nor the school authority had any charge against them for being involved in criminal activity.

Instruments Used

Two instruments were used here, one for measuring neuroticism and another for collection of biographical information.

Instrument Used to Measure Neuroticism

Neuroticism is a state of mind due to which the individual suffers from unusual feeling of insecurity and/or anxiety, depression, fear, obsession. Against these he develops some protective devices which, both quantitatively or qualitatively, differ from the culturally accepted norms and these lead to conflicts which he is unable to solve. The degree of deviation from the socially accepted norms of behaviour, determines the level of neuroticism and thus there are slightly neurotic, moderately neurotic and highly neurotic individuals.

The tools available for measuring neuroticism range all the way from techniques like test of reminiscence, figural-after-effect etc., to devices like rating scale, questionnaire and inventories. For the present study, however, an inventory was used and of the available inventories, the Kundu's Neurotic Personality Inventory (KNPI) was selected (Kundu, 1964), as it well satisfied the requirements of the groups under consideration. The KNPI was modelled after the scale for neuroticism of the Bernreuter's Personality Inventory (Buros, 1953). It consists of 66 statements describing behaviour which may be identified as neurotic. Some of these deal with anxiety, some with nervousness and insecurity feeling, compulsion, phobia, emotional disturbances etc. For each statement the respondent indicates whether he feels or behaves as indicated in the statement almost always, or frequently or oc-

Table 1
Percentages of neurotics in the four groups and the corresponding critical ratios

Boys $n=391$			Girls $n=384$			Critical ratio	
Percentage		Critical ratio	Percentage		Critical ratio	HOD	Slum
HOD† $n=191$	Slum $n=200$	HOD×Slum	HOD $n=184$	Slum $n=200$	HOD×Slum	Boys×Girls	Boys×Girls
48	38	1.94	53	45	1.64	1.00	1.43

†HOD indicates house of detention.

asionally or rarely or never. The total score is computed by putting different weights for different categories of responses. The scoring key was prepared on the basis of judgement given by groups of psychiatrists, psychologists and psychoanalysts. As per the norm recommended for the KNPI, an individual is considered as normal if his score is below 182. The score range of slightly neurotic is 182 to 215 and that for moderately neurotic is 216 to 240. An individual is marked as highly neurotic if his score is 241 or above that. The inventory is in English and it was, however, translated and adapted into the local language (Mitra, 1970).

The Biographical Questionnaire

An unstructured Biographical Questionnaire was prepared to collect information about the subject, his home, parents etc. The numbers of questions under different broad heads were as follows: (a) Self-10, (b) Parents-8, (c) Brothers and Sisters-2, (d) Economic Status-3, (e) Emotional Association-4, (f) Home Environment-5, and (g) Crime History-3.

All these 35 questions along with the responses given by the subjects are presented in Table 2.

Collection of Data

As the educational level of the subjects was very low, the data were collected by direct interview. The statements of the

KNPI and the questions of the Biographical Questionnaire were read out to each subject separately providing proper attention and explanation whenever needed. The responses given were recorded by the investigator.

Analysis of Data

Initially the KNPI scores were analysed. Instead of considering levels of neuroticism separately, a subject was classified as neurotic if the score was higher than or equal to 182 as otherwise further subclassification would result in too few cases in each category to obtain stable statistics. The percentages of neurotics among the House of Detention (HOD) inmates and slum adolescents calculated separately for both the sex groups are presented in Table 1, along with the Critical Ratios (Garrett, 1965, pp. 235-236) indicating the significance of the differences between the comparable percentages.

The results in Table 1 reveal that the percentage of neurotics among the HOD inmates was higher than that among the slum living subjects. But this difference was not significant for both the sex groups. The result was somewhat different from that obtained by Glueck and Glueck (1966, p. 214) though it supported those of Aichhorn (1951), Pati (1966), Rajangam (1957), Shanmugam and Sundari (1962). The obtained difference may be due to the fact that for certain cases, on-set of delinquency had its roots in neuroticism

too (Bennett, 1960, p. 25) and inclusion of such cases in the HOD groups inflated the percentage of neurotics.

It may be noted that the percentage of neurotics among the girls was higher than that among the boys for both HOD and slum groups but the difference was not significant.

Next, data obtained through Biographical Questionnaire were analysed. As this was an unstructured questionnaire, the responses obtained for each question were firstly categorised, then the percentage incidences for HOD and slum groups in these categories were computed. Critical Ratios were obtained to test the significance of the difference between the comparable percentages and these values are presented in Table 2.

It is observed that the HOD inmates and slum adolescents varied widely so far as percentage distributions were concerned to almost all the factors considered except one, i.e., "father's income". For factors like "presence of step-father or step-mother in the family", "number of brothers and sisters", "the most loved child of the parents" etc., the difference in percentages between two groups of girls was significant while this was not so for the boys. On the other hand, with respect to aspects like "willingness to get some job or training" and "persons instigating addiction", the two girls' groups had no difference, while the boys' groups differed significantly.

The important points revealed through the comparisons are presented below:

(1) Most of the delinquents were not studying and were not even interested in study, i.e., they were apathetic to academic environment. Sixty-one per cent of the HOD boys and 30 per cent of the HOD girls were engaged in some job or other at the time of arrest. Such a trend was not observed among slum children though socially and economically they formed compara-

ble groups. It might be that due to non-submissive nature, the inmates wanted to be economically independent and started earning their own livelihood. This result corroborated with the findings of some other study conducted in India (Baskaran & Muthayya, 1964). A large proportion of the HOD boys were interested in taking up honest profession in future. A high per cent of them did not participate in games, spent their leisure aimlessly and had no friends.

- (2) A large portion of the HOD inmates were brought up in families where parents were absent, whereas the reverse condition prevailed in case of slum children. A significantly larger percentage of the HOD girls than the slum girls had either step-father or step-mother and were brought up by someone other than parents. About 70 per cent of the HOD inmates were deprived of their mother's care due to facts like "mother works outside" or "mother was dead or absent from home". Moreover, a considerable number of delinquents had no connection with their family. All these however, are similar to the results obtained in Western countries (Aichhorn, 1951; Bennett, 1960; Glueck & Glueck, 1950, 1966).
- (3) Though the difference between the two groups was not so marked with respect to the number of brothers and sisters but it was significantly so regarding their whereabouts.
- (4) So far as the economic condition of the family was concerned there was not much difference except in the category like "no fixed income" and "subject earns his own livelihood". It supports what is observed through different studies that the economic condition of the family is not the main cause of delinquency of the

Table 2

Different questions, response categories and the critical ratios (C. R.) indicating the significance of the difference between the percentage incidences in comparable groups

Questions related to self and the response categories	Critical ratio		Questions related to self and the response categories	Critical ratio	
	HOD×Slum			HOD×Slum	
	Boys	Girls		Boys	Girls
1. Do you study?			(b) Yes-tea, cigarette, etc.	7.17**	2.19*
(a) Yes	13.35**	13.28**	(c) Yes-ganja, wine, etc.	5.29**	0.36
(b) No-lack of interest	6.87**	6.25**	8. Who led you to addiction?		
(c) No-shortage of money	8.36**	8.69**	(a) No addiction	9.59**	1.74
2. Do you wish to undergo any professional training?			(b) Someone from home	2.36*	1.58
(a) Yes	7.20**	1.94	(c) Friends	5.84**	0.65
(b) Yes-any training	2.08*	0.06	(d) None particularly	7.22**	1.26
(c) Yes-factory training	3.87**	1.75	(e) No response	1.63	2.20*
(d) Yes-not manual	0.93	0.57	9. How many close friends do you have?		
(e) Already employed	2.13*	2.47*	(a) No one	3.98**	4.82**
3. Are you employed?			(b) One	1.49	1.56
(a) No	8.21**	2.23*	(c) More than one	4.40**	5.10**
(b) Yes-domestic servant	2.94**	0.00	10. What do your friends do?		
(c) Yes-other type of work	7.48**	3.76**	(a) Everyone studies	7.53**	7.62**
(d) Undergoing training	2.20*	1.80	(b) Some study, others work	0.00	0.00
4. What is your plan for future?			(c) Everyone works	6.10**	4.32**
(a) Honourable profession	0.00	3.78**	(d) Do nothing	3.57**	3.35**
(b) Honest profession	5.08**	1.30	(e) Has no friend	3.76**	4.87**
(c) As per gurdian's wish	2.43*	1.48	(f) No response	4.32**	3.64**
(d) Be engaged in household work	0.98	2.90**			
(e) To continue study	3.62**	3.82**	Questions related to parents and the response categories	Critical ratio	
(f) No definite plan	6.19**	1.42		HOD×Slum	
5. Do you play games?				Boys	Girls
(a) No	5.11**	7.02**	11. Are your parents alive and do they stay together?		
(b) Rarely	1.89	3.82**	(a) Both alive, stay together	5.44**	6.24**
(c) Yes-outdoor games	4.48**	2.85**	(b) One is missing or fled	3.63**	3.26**
(d) Yes-indoor games	2.16*	3.47**	(c) Both are missing or fled	1.45	2.35*
(e) Yes-all types	1.86	1.89	(d) Both are dead	0.93	3.56**
6. How do you spend your leisure?			(e) One is dead	3.52**	2.66**
(a) Educative work	4.93**	3.95**	(f) Unknown	0.00	2.10*
(b) Non-educative work	8.73**	5.26**	12. When did your father die?		
(c) Playing games	2.03*	4.41**	(a) Father is alive	2.54*	3.34**
(d) Work to help family	0.84	2.26*	(b) Father died before subject was 6 years old	0.07	1.32
(e) Nothing definite	3.91**	0.13			
7. Do you have addiction?					
(a) No	9.59**	2.22*			

Continued . . .

Table 2 Continued.

Questions related to parents and the response categories	Critical ratio		Questions related to parents and the response categories	Critical ratio	
	HOD×Slum			HOD×Slum	
	Boys	Girls		Boys	Girls
(c) Father died after subject was 6 years old	0.67	1.00	(b) One of the parents	2.53*	3.32**
(d) Father is missing or unknown	3.50**	2.66**	(c) Someone other than parents	0.83	6.79**
13. When did your mother die?			(d) Unknown	1.78	2.10*
(a) Mother is alive	4.35**	7.63**	Questions related to other members of home and the response categories	Critical ratio	
(b) Mother died before subject was 6 years old	1.40	2.70**		HOD×Slum	
(c) Mother died after subject was 6 years old	3.00**	4.66**		Boys	Girls
(d) Mother is missing or unknown	4.00**	4.58**	19. How many brothers and sisters do you have?		
14. Do you have step-father or step-mother?			(a) No brothers or sisters	0.07	2.33*
(a) No	1.97*	4.54**	(b) Number is within 1 to 5	1.09	0.75
(b) Yes-step-father	1.12	3.22**	(c) Number is above 5	1.40	2.00*
(c) Yes-step-mother	1.05	2.98**	(d) Unknown	0.00	2.10*
(d) Not known	1.78	1.26	20. What do your brothers and sisters do?		
15. What is the occupation of your father?			(a) Everyone studies	1.84	3.69**
(a) Cultivator	1.70	3.90**	(b) Some study, some work	4.61**	0.25
(b) Businessman	0.63	1.62	(c) Everyone works except children	2.49*	4.78**
(c) Labourer	0.00	3.48**	(d) No response	5.96**	1.49
(d) Office worker	4.47**	4.17**	(e) No brothers & sisters	0.07	2.33*
(e) Miscellaneous work	1.08	1.41	(f) Unknown	2.52*	2.57**
(f) Unemployed	0.32	0.82	Questions related to economic condition and the response categories	Critical ratio	
(g) No response	1.64	2.00*		HOD×Slum	
(h) Dead or absent	2.20*	2.66**		Boys	Girls
(i) Unknown	1.20	2.57**	21. What is the monthly income of your father?		
16. Is your mother employed?			(a) Below Rs. 350/-	0.48	1.18
(a) No	7.00**	7.20**	(b) Rs. 350/- & above	1.50	1.00
(b) Yes	4.75**	1.30	(c) No fixed income	0.66	0.97
(c) Dead or absent	4.46**	7.18**	(d) Unemployed	0.00	0.33
(d) Unknown	1.02	2.57**	(e) Father dead or absent	2.50*	3.50**
17. Do you stay with your parents?			(f) Unknown	2.00*	2.33*
(a) With both the parents	6.38**	8.34**	22. What is the monthly income of your family?		
(b) With one of the parents	3.00*	0.91	(a) Below Rs. 400/-	0.75	1.25
(c) With someone else	0.82	1.38	(b) Rs. 400/- & above	1.33	1.67
(d) Live alone	1.70	2.10*			
(e) Has no connection with the parents	5.29**	7.54**			
18. Who reared you up?					
(a) Both the parents	3.55**	5.79**			

Continued . . .

Table 2 Continued.

Questions related to economic condition and the response categories	Critical ratio		Questions related to emotional association at home and the response categories	Critical ratio	
	HOD × Slum			HOD × Slum	
	Boys	Girls		Boys	Girls
(c) No fixed income	4.25**	2.03*	(g) Other	2.50*	3.50**
(d) Not known	3.40**	2.42*	27. If you do not like to stay at home, where else do you prefer to stay?		
(e) Subject lives alone and earns his livelihood	2.52*	4.22**	(a) Like to come about	5.60**	4.75**
(f) Disconnected from family	2.73**	3.66**	(b) Like to stay elsewhere	1.38	1.00
23. Where do you live in?			(c) Like to stay in working place	4.07**	4.55**
(a) Own house	0.25	0.50	(d) Have no home	2.43*	5.34**
(b) Rented house	2.03*	2.32*	(e) Like to stay at home	8.00**	9.44**
(c) Foot-path	4.09**	5.47**	28. How is the nature of discipline at your home?		
Questions related to emotional association at home and the response categories	Critical ratio		(a) Rigid	5.75**	5.12**
	HOD × Slum		(b) Neither rigid nor relaxed	3.40**	3.13**
	Boys	Girls	(c) Relaxed	8.72**	5.87**
			(d) Other	1.18	4.50**
24. Whom do you like best among your family members?			29. Do your parents fall in bad terms frequently?		
(a) Parents (one or both)	8.03**	4.40**	(a) Yes	0.00	1.08
(b) Everyone	0.00	1.66	(b) No	5.02**	7.33**
(c) Some relative	5.21**	0.21	(c) No response or does not arise	5.11**	6.87**
(d) None	11.00**	9.00**	30. What is the mutual relation between your parents?		
(e) Other	2.52*	4.22**	(a) Good	5.39**	6.29**
25. Who is the best loved child of your parents?			(b) So-so	0.25	0.54
(a) None	1.34	1.01	(c) Bad	1.23	0.89
(b) The subject himself	0.64	1.75	(d) No response or does not arise	5.57**	6.65**
(c) Everyone	1.66	5.14**	31. Do you have any neurotic or psychotic relatives?		
(d) One of the children (not the subject)	0.21	0.00	(a) Yes	4.09**	2.89**
(e) Other	1.11	6.49**	(b) No	3.30**	4.57**
26. Do you like to stay at home?			(c) Not known	0.31	3.38**
(a) Yes	8.19**	9.12**	32. Do you have any relative who is or was imprisoned?		
(b) No-no definite reason	1.97*	2.66**	(a) Yes	5.46**	6.46**
(c) No-reason poverty	0.63	2.88**	(b) No	4.99**	7.40**
(d) No-reason none loves	1.20	2.28*	(c) Not known	0.59	2.50*
(e) No-reason ill-treatment	6.49**	5.81**			
(f) No-reason no facility for training	1.40	1.18			

* Significant at the 5% level. ** Significant at the 1% level.

Table 3
 Questions related to crime history, response categories and
 the percentage distributions of HOD inmates

Questions related to crime history and response categories	Per cent in HOD		Questions related to crime history and response categories	Per cent in HOD	
	Boys	Girls		Boys	Girls
33. What offences did bring you here?			(c) Instigated by friend	8	12
(a) Theft	32	17	(d) For ill-treatment received	3	18
(b) Cheating	2	4	(e) For adventure	1	2
(c) Travelling without ticket	17	39	(f) No definite reason	38	33
(d) Keeping or selling stolen article	13	8	35. Did you commit such an offence in the past?		
(e) Carrying and selling contraband article	8	10	(a) No	54	51
(f) Hooliganism	17	11	(b) Yes-but escaped	27	29
(g) Sex offences	4	8	(c) Yes-caught but got exemption	2	0
(h) Keeping explosive	7	3	(d) Yes-stayed in HOD	3	3
34. Why did you commit such offences?			(e) Yes-stayed in reformatory school	1	3
(a) For poverty	42	29	(f) No definite response	13	14
(b) To take revenge	8	6			

children; lack of stability, discipline, moral standard, love etc., induce delinquency among the children to a great extent. It is worth noting that about ten per cent of the HOD inmates had no home and they stayed in footpath.

- (5) A significantly higher percentage of the slum children than the HOD inmates loved their parents whereas a high percentage of the HOD boys had more attachment with someone other than their parents. It should be noted that a large proportion of the delinquent children did not like to stay at home due to "ill treatment received" or "lack of affection" but such an attitude was not marked among the slum groups. About 30 per cent of the HOD inmates expressed their desire to roam about aimlessly; more than 40 per cent of them indicated "lack of discipline" at their homes while the corresponding figures of the slum adolescents were quite low. Significantly less per cent of delin-

quents than that of slum living subjects indicated compatible relation between their parents. More than 20 per cent of the HOD inmates informed that they had neurotic and/or psychotic relatives and also had relatives who were imprisoned. All these indicated that the family environment of HOD inmates was, in some way or other different from that of the slum children.

All the above observations regarding family structure, absence or death of parents, home discipline, attitude towards home etc., were typical of the delinquent groups investigated elsewhere (Glueck & Glueck, 1950, 1966).

The percentage distributions of offences among HOD boys and girls are presented in Table 3; it shows that theft, travelling without ticket, keeping or selling forbidden or stolen articles accounted for large portion of cases. Similar result was also obtained by Govindarajan (1966) in India. Though a portion of the inmates reported that poverty was the cause behind their anti-social behaviour yet some 30 per

Table 4
Chi-square values indicating significant relation between neuroticism and
six factors along with degrees of freedom

Biographical question number	Chi-square			
	HOD Boys	Slum Boys	HOD Girls	Slum Girls
1	0.13 <i>2df</i>	2.15 <i>2df</i>	0.94 <i>2df</i>	8.35* <i>2df</i>
3	1.37 <i>2df</i>	7.78 <i>3df</i>	1.29 <i>3df</i>	8.95* <i>3df</i>
18	0.90 <i>3df</i>	1.30 <i>2df</i>	15.33** <i>3df</i>	1.74 <i>2df</i>
21	6.34 <i>5df</i>	3.72 <i>5df</i>	12.00* <i>5df</i>	5.84 <i>5df</i>
25	11.14* <i>4df</i>	6.58 <i>4df</i>	2.54 <i>4df</i>	7.60 <i>5df</i>
27	1.20 <i>4df</i>	9.64* <i>4df</i>	3.81 <i>4df</i>	5.64 <i>3df</i>

* Significant at the 5% level. ** Significant at the 1% level.

cent of them failed to provide any definite reason. Half of them intimated that they had committed such offences in the past which further confirmed their delinquent nature.

In order to probe the situation further, it was decided to investigate to what extent and by which manner the family environmental and other factors considered here were related to neuroticism observed among the subjects. Glueck and Glueck also observed that some social factors contributed significantly to the development of neuroticism and hence they concluded that "neuroticism must be considered as closer to the conditioned than to the genetic pole of the biosocial continuum" (Glueck & Glueck, 1966, p. 90). The percentages of neurotics in the categories of each biographical and environmental factors were computed for each of the four groups and to test the significance of the relation between neuroticism and the categories, the appropriate Chi-squares were calculated (Crammer, 1954, p. 443), which are presented in Table 4. The results revealed that out of the 32 factors only six had significant relation with

neuroticism but not simultaneously in all the groups.

The family structure, home environment, parent's employment status etc., were not significantly related with neuroticism. Of the six related factors, two were linked with status of the subject, three were connected with family structure, attachment with parents and home and the last one was connected with economic status. However, these factors were somewhat different from those found to be contributing to neuroticism by Glueck and Glueck (1966, p. 90). The percentages of neurotics in the categories connected with these six factors are presented in Table 5.

The important results revealed here are as follows:

- (1) In the group of slum girls, more neurotics were found among those who were studying than among those who were not studying. In the same group, there were significantly less number of neurotics among those who were employed specially as maid servant, than among those who were employed in other ways. The nature of such work was not clarified by the

Table 5

Percentages of neurotics in response categories for HOD inmates and slum children and Chi-square values indicating significance of difference in sequences of these percentages

Question No. and response categories	Percentage neurotic		Chi-square	Question No. and response categories	Percentage neurotic		Chi-square
	HOD Girls	Slum Girls			HOD Boys	Slum Boys	
1. (a)	50	50	0.00	25. (a)	56	50	0.09
(b)	48	25	2.74	(b)	64	45	4.76*
(c)	56	26	7.69**	(c)	47	27	1.69
		Total	10.43*	(d)	37	30	0.75
			3df	(e)	39	50	0.67
3. (a)	53	49	0.45			Total	7.96
(b)	50	21	4.26*				5df
(c)	56	50	0.13	27. (a)	46	53	0.29
(d)	0	17	0.20	(b)	42	0	6.42*
		Total	5.04	(c)	44	50	0.07
			4df	(d)	60	50	0.07
18. (a)	60	47	4.83*	(e)	51	39	3.12
(b)	51	32	1.86			Total	9.97
(c)	23	33	0.14				5df
(d)	—	—	—				
		Total	6.83				
			3df				
21. (a)	59	45	3.47				
(b)	75	57	0.36				
(c)	26	47	1.62				
(d)	75	65	0.42				
(e)	48	34	1.49				
(f)	38	37	0.00				
		Total	7.36				
			6df				

* Significant at the 5% level. ** Significant at the 1% level.

- subject. In HOD girls' group this difference was not significant.
- (2) In HOD girls' group, occurrence of neuroticism was more frequent among those who were brought up by both the parents than among those who were reared by someone else. In the same group, the percentage of neurotics increased with the increase of "father's income" or "father unemployed". Similar trend, though insignificant, was observed among the slum girls.
- (3) Among the HOD boys the percentage of neurotics was higher for those who were "most loved by their parents" than that for those boys who were not much cared by them. This trend was not marked among the slum boys.
- (4) More neurotics were detected among those slum boys who did not like to stay at their home but to roam about here and there, than among those who did not desire so. This was not true in case of HOD boys.

Now as some of the factors were found to be related to neuroticism, it was decided to find out whether the sequences of percentages of neurotics in the different categories observed in the two comparable groups were significantly different or the difference in percentages occurred only in some particular category. In order to test this, the Chi-square suggested by Crammer (1954, p. 449) was computed. For each of the categories one Chi-square was obtained which had one degree of freedom. It indicates whether the significant difference in percentages occurred in that category or not. The total of these Chi-square values also follows a Chi-square distribution with the degrees of freedom equal to the number of categories involved. It provides the test for the hypothesis that there was no difference in the sequences of percentages obtained for the two groups. This analysis was done only for the factors where the percentages of neurotics varied significantly with the categories observed.

The Chi-square values thus obtained are presented in Table 5. A scrutiny of the results reveals that, (a) for most of the factors, the sequences of percentages of neurotics obtained in two comparable groups, did not differ significantly. (b) For the remaining factors, the two percentages differed significantly only in one of the categories. These cases, however, have already been discussed.

Conclusions

The results obtained through this investigation may be summarised as follows:

- (1) The percentages of neurotics observed among the delinquents and the non-delinquents were not significantly different.
- (2) Some of the environmental factors considered here were criminogenic in nature because the number of incidences of these factors among the delinquents was higher than that among the non-delinquents.
- (3) Most of the environmental factors considered here had no significant relation with neuroticism as observed in both the delinquent and the non-delinquent group. However, even for those few environmental factors where significant relationship was established, it was not simultaneously so in all the groups studied here.
- (4) Some of the results obtained through the study were identical to those obtained in Western countries and some difference was also observed.

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(Received Aug. 13, 1979; accepted July 4, 1981)