A Study of Risk Factors in Recidivistic Criminals

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ABSTRACT

A study was carried out under the aegis of Indian Council of Medical Research, New Delhi with objectives to identify psychosocial, physical, psychiatric, anthropometric and psychometric risk factors in recidivistic criminals, which could predict a future recidivistic criminal. The paper presents study observations on 250 experimental, 250 control-1 and 250 control-2 subjects. Experimental and control-1 subjects were recruited from district jails of Uttar Pradesh and control-2 from the community. Pretested Semi-structured proformae, Verghese and Beig Symptoms Checklist, International Personality Disorder Examination module, Hostility and Direction of Hostility Questionnaire, Rorschach Ink Blot Test and Standard Anthropometric instruments were used to collect data on study probands. All the three groups were compared using Analysis of Variance and Chi-Square Test. The results highlight a number of psycho-social, psychiatric, psychometric and anthropometric factors which were found to have significant association with recidivistic criminal behaviour. The findings would not only help in identifying future recidivistic criminals but can also be used for legal, judicial, interventional and corrective purposes.

Key Words: Recidivist, Non-recidivist

Introduction

The belief that the criminal behaviour can be explained by some physical characteristics is an old one. Studies based on the concept of inheritance of physical characteristics have revealed strong predisposition as far as committing crime is concerned. But the notion of crime or criminality would be meaningless without the context of learning (HJ Eysenck, 1964). Evidence of last few decades shows that the criminal behaviour is a learned behaviour and more than one factor might be associated with crime or in the process of criminal behaviour. It turned to analysis of several factors such as physical, mental, psychological, psychosocial etc. To overcome this problem, a number of studies all over the world including India were carried out (Advani 1978, Tappen 1960, Bass et. al 1992, Quinsy 1995, Serin 1995 etc.) but failed to give the complete answer, probably because most of them were unit factor studies. Even if multiple factor approach was followed, the factors included were fewer. Even few scholars followed multiple factor approach but very few correlates were selected. Therefore, a multiple factor study was undertaken under the aegis of Indian Council of Medical Research with object to identify the risk factors which catalyse indulgence in professional criminal behaviour for profiling future habitual criminals.

Material and Methods

The sample consisted of 750 subjects, 250 in each group (i.e. experimental, control-I and control-II). Experimental and control-I sample was drawn from district jails of Lucknow, Barabanki, Kanpur, Unnao and Sitapur. Next door neighbors matched on socio-demographic variables living at the permanent address of the subjects in experimental group constituted the control-II subjects.

It was originally planned to include only ‘convicts’ in the experimental and control-I groups. However, when the jail inmates were screened in Lucknow and similar information was obtained from other jails, it emerged that the proportion of convicted prisoners was only between 1 to 2% in different jails. As a result, we approached Indian Council of Medical Research and with the approval the Council experts, the inclusion criteria was subsequently relaxed to

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include convicts as well as undertrials in the study groups. Thus the subjects in experimental, control-I and control-II groups were recruited based on the following modified and defined inclusion criteria. The experimental subjects were group matched for age, education, domicile, religion and economic status with control subjects. For the purpose of this study, the undertrial criminals have been addressed as criminals.

1. **Experimental** - Prisoners charge-sheeted for major offences under specified sections of I.P.C./Cr. P. C. (sections 302, 307, 368, 376, 392, 394, 498, 8/18, for example) for two or more than two times on different occasions and their cases have been admitted by the courts of law for trials, whether convicted or not.

2. **Control-I** - Prisoners charge-sheeted for less serious/minor offences under specified sections of I.P.C./Cr. P. C. (sections 122, 123, 353, 294, 363/366, 379, 379/411, 420 for example) for two or more than two times on different occasions and their cases have been admitted by the courts of law for trials, whether convicted or not.

3. **Control-II** - Neighbours of subjects in experimental group belonging to similar socio-demographic background and having no history or evidence, whatever, of criminal behaviour specified in I.P.C./Cr. P. C.

**Tools of Investigation**

The following instruments were used to elicit the data:

1. Three specially designed semi-structured proformae were used to identify risk factors, including the profile of demographic, familial, educational, economical, political, religious and socio-cultural background as well as overall adjustment and personality characteristics, prior to the onset of criminal behaviour.

2. Verghese and Beig Mental Health Symptom Checklist to screen subjects suspected to be suffering from psychiatric illness and subsequently ‘Standard Psychiatric Assessment’ of suspects. (Verghese and Beig, 1973).

3. International Personality Disorder Examination (IPDE) module, a screening questionnaire of WHO to identify subjects with personality disorder. (Loranger et al. IPDE, 1998).

4. Hostility and Direction of Hostility Questionnaire (HDHQ) to assess extent of hostility and its direction. (Caine, T.M., et al,1967)

5. Rorschach inkblot test to evaluate personality profile of subjects. (Rorschach, H,1942)

6. Anthropometric assessments through specified instruments (Anthropometer, Rod compass, Sliding caliper, Spreading caliper, Glass plate and Roller). These instruments are standard instruments for carrying out anthropometric measures.

**Procedure**

After obtaining permission from I.G. prison and ensuring cooperation from jail authorities, included jails were visited to identify ‘possible in’ subjects in experimental and control-I groups from the records of jail inmates. Subjects fulfilling inclusion criteria were personally contacted and the purpose of investigation was explained to them. Subjects giving informed consent were finally included in the study. There were no refusals to participate in the study, though initial cooperatorial difficulties were encountered in case of few subjects, particularly for dermatoglyphic impressions. Later, all subjects cooperated. After inclusion, the research members of the team administered the instruments on the included subjects, who were the only source of information for obtaining data on all the research instruments. The experimental, control-I and control-II group subjects were also interviewed about the members of their family. The members of the family were defined as those from paternal or maternal side with whom the incumbent has been in close physical or psychological proximity for an appreciably longer time.

After collecting the data from the jail inmates, the concerned community was visited to identify control-II subjects (i.e. neighbour of subjects in the experimental group). The screening of the neighbourhood (preferably the next door neighbours) was done to identify subjects matching on demographic variables and fulfilling the inclusion criteria for control-II group. The above research instruments were also administered on these included subjects after obtaining their informed consent. Most of the information was obtained by interviewing subjects in all the three groups and, thus, the data collected is retrospective in nature. The positive information reported by the subjects about personality traits in childhood was taken as valid and reliable information, though the information was retrospective in nature.

For anthropometric measurements, data were gathered on the characteristics of the individuals under three heads: Somatoscopic - (such as head hair form, hair limit, forehead,
eyebrow, general body built); Body marks - (such as moles, scars, tattoo marks) and Somatometric - (such as maximum head length, maximum head breadth, maximum head height, minimum frontal breadth, bizygomatic breadth, bignional breadth, morphological upper facial height, morphological total facial height, physiognomic upper facial height, physiognomic total facial height, nasal length, nasal breadth, nasal depth, mouth breadth, height of the lower face, physiognomic ear length, physiognomic ear breadth, height vertex, sitting height vertex, height acromion, height ilioocristale, height suprasternale, biacromial breadth, bicornial breadth). The glossary of the terms has been appended as appendix-1.

No coooperational difficulties were encountered in the recruitment of subjects in control –II group. Analysis of variance and multi comparison tests were used to compare the three groups on continuous variables. The chi-square test and associated contingency tables were applied for comparing the groups on discrete variables.

Results

The three groups were comparable across socio – demographic variables. Majority in the present sample were male (95.6%), in an age range of 18-33 years (79.6%), belonged to rural areas (52%) and mostly were engaged in agricultural works (39.6%) Most of them were illiterates (48.8%) or less educated. For purposes of tabulation and analysis of data, the categories of males and females were merged.

Numerous statistically significant differences between the hardened criminals, petty criminals and normals were found. It was noticed that multiple factors were associated with criminal behaviour. Some specific indicators of repeated criminal behaviour, which could be taken as the risk factors of recidivism, are being presented and discussed.

Table: 1-a

| Immoral/illegal behaviour of Family members: | Present (n=250) | Con-I (n=250) | Con-II (n=250) | Chi-square (among the groups) | p value |
|--------------------------------------------|----------------|---------------|----------------|-------------------------------|---------|
| Yes                                       | 89 35.6 50 | 20.0 43 | 17.2 27.78 | <0.01 | |
| No                                        | 161 64.4 200 | 80.0 207 | 82.8 | |

Among the groups: p<.01 (Sig)
Between the groups:
Exp vs con-1: X²=15.16 p<.01 (Sig)
Exp vs con-2: X²=21.78 p<.01 (Sig)
Con-1 vs. Con-2: X²=0.65 p>.42 (NS)

The involvement of family members in immoral/illegal activities prohibited by legal or moral code of conduct was observed to be maximum in experimental group (35.6%) followed by control-1 (20.0%) and control-2 (17.2%) groups in descending order. While control-I and control-II did not differ significantly, the presence of pathological activities among family members of hardened criminals were significantly more.

Table: 1-b

| Family member’s involvement in Criminal activites | Present (n=250) | Con-I (n=250) | Con-II (n=250) | Chi-square (among the groups) | p value |
|------------------------------------------------|----------------|---------------|----------------|-------------------------------|---------|
| Yes                                           | 154 61.6 120 | 48.0 23 | 9.2 154.7 | <0.01 | |
| No                                            | 96 38.4 130 | 52.0 227 | 90.8 | |

Among the groups: P<.01 (Sig)
Between the groups :
Exp vs Con-1 : X²=9.33 p<.01 (Sig)
Exp vs Con-2 : X²=150.8 p<.01 (Sig)
Con-1 vs Con-2 : X²=92.15 p<.01 (Sig)

Significantly higher number of family members in experimental group (61.6%) were reported to be involved in criminal activities as compared to Control-1 (48%) and Control-2 (9.2%) subjects.

Table: 1-c

| Temper Tantrums during Childhood | Present (n=250) | Con-I (n=250) | Con-II (n=250) | Chi-square (among the groups) | p value |
|----------------------------------|----------------|---------------|----------------|-------------------------------|---------|
| Yes                              | 31 12.4 13 | 5.2 16 | 6.4 10.1 | <.01 | |
| No                               | 219 87.6 237 | 94.8 234 | 93.6 | |

Among the groups: p<.01 (Sig)
Between the groups :
Exp vs con-1 : X²=8.07 p<.01 (Sig)
Exp vs con-2 : X²=5.28 p<.02 (Sig)
Con-1 vs con-2 : X²=0.33 p>.57 (NS)

Significantly much higher prevalence of temper tantrums during childhood (12.4%) was reported by the subjects in experimental group as against the subjects in Con-I & Con-2, being 5.2% & 6.4% respectively. (Table-1d near here)

Similarly, hardened criminals (16%) reported higher prevalence of anxiety traits during childhood as compared to control-I (9.2%) and control-II (5.6%) group. No significant difference was found between control-I and control-II groups.
Majority of the hardened criminals (71.2%) were brought up in joint families in comparison to petty criminals (61.6%) as well as control-2 (61.2%). However, no significant difference was observed between petty criminals and normal controls with regard to nature of family to which they belonged.

| Table: 1-d | Anxiety Trait during Childhood |
|------------|--------------------------------|
| Present    | Exp (n=250) | Con-I (n=250) | Con-II (n=250) | Chi-square (among the groups) | p value |
| N %        | N %         | N %           | N %           |                               |
| Yes        | 40 16.0     | 23 9.2        | 14 5.6        | 15.3                         | <.01    |
| No         | 210 84.0    | 227 90.8      | 236 94.4      |                               |

Among the groups: P<.01 (Sig)  
Between the groups:  
Exp vs con-1: X²=5.25 p<.02 (Sig)  
Exp vs con-2: X²=14.03 p<.0 (Sig)  
Con 1 vs con-2: X²=2.36 p>.12 (NS)

| Table: 1-e | Joint Family Structure during Childhood |
|------------|-----------------------------------------|
| Present    | Exp (n=250) | Con-I (n=250) | Con-II (n=250) | Chi-square (among the groups) | p value |
| N %        | N %         | N %           | N %           |                               |
| Yes        | 178 71.2    | 154 61.6      | 153 61.2      | 7.02                          | <.02    |
| No         | 72 28.8     | 96 38.4       | 97 38.8       |                               |

Among the groups: p<.02 (Sig)  
Between the groups:  
Exp vs con-1: X²=5.16 p<.02 (Sig)  
Exp vs con-2: X²=5.59 p<.02 (Sig)  
Con 1 vs con-2: X²=.01 p>.93 (NS)

Significantly more family members of criminal group families were reported to be involved in political activities as compared individually with control-2 families (30.8%). However, no significant difference between the family members in the two groups of criminals was observed in respect of their involvement in political activities.

| Table: 1-f | Involvement in Political activities by Family Members |
|------------|------------------------------------------------------|
| Present    | Exp (n=250) | Con-I (n=250) | Con-II (n=250) | Chi-square (among the groups) | p value |
| N %        | N %         | N %           | N %           |                               |
| Yes        | 136 54.4    | 119 47.6      | 77 30.8       | 29.8                          | <.01    |
| No         | 114 45.6    | 131 52.4      | 173 69.2      |                               |

Among the groups: p<.02 (Sig)  
Between the groups:  
Exp vs con-1: X²=5.16 p<.02 (Sig)  
Exp vs con-2: X²=5.59 p<.02 (Sig)  
Con 1 vs con-2: X²=.01 p>.93 (NS)

Significantly more family members of criminal group families were reported to be involved in political activities as compared individually with control-2 families (30.8%). However, no significant difference between the family members in the two groups of criminals was observed in respect of their involvement in political activities.

| Table: 1-g | Frequency of Alcohol Consumption |
|------------|----------------------------------|
| Daily / Regular Consumption | Exp (n=174) | Con-I (n=101) | Con-II (n=79) | Chi-square (among the groups) | p value |
| N %        | N %         | N %           | N %           |                               |
| Regular    | 115 66.1    | 141 33.9      | 10 12.7       | 103.3                         | <.01    |
| Irregular  | 59 33.9     | 87 66.1       | 69 87.3       |                               |

Among the groups: p<.01 (Sig)  
Between groups:  
Exp vs Con-1: X²=70.00 p<.01(Sig)  
Exp vs Con-2: X²=62.06 p<.01(Sig)  
Con-1 vs Con-2: X²=.06 p>.81 (NS)

Risk Factors in Recidivistic Criminals
Petty Criminals (13.9%) and normal controls (12.7%) did not differ significantly in respect of the frequency of alcohol consumption, while experimental group (66.1%) differed significantly with the other two groups.

Recidivistic group (62.0%) had a significantly higher prevalence of the features of paranoid personality disorder as against control-I (32.0%) but this difference was not found to be significant when compared with probands in control-II. Control group probands amongst themselves did not differ significantly in this regard.

Similarly, experimental group (56.1%) had higher prevalence of impulsive traits in comparison to con-I (28.1%) and con-II (25.0%) group. No significant difference was found between control groups.

A significant difference was observed in respect of morphological total facial height index: hypereuryprosopic type when it was compared with the rest of categories pooled together. It was significantly lesser in recidivists, (18.87%) as against the subjects in control –I (27.04%) and control-II (87.20%) groups. With regards to the comparison of other total facial height types individually vs the rest, no significant difference was found.

### Table: 2-b

| Personality | Personality Disorder Category (Impulsive Type) |
|-------------|-----------------------------------------------|
| No. of Traits positive in the category | Tentatively classifiable | Exp | Con-I | Con-II | Chi square (among the groups) | p value |
| <4 | | 209 | 218 | 234 | | |
| >4 | | 41 | 32 | 16 | | |
| ≥4 | Yes | 23 | 56.1 | 9 | 28.1 | 4 | 25.0 | 7.77 | <0.05 |
| No | | 18 | 43.9 | 23 | 71.9 | 12 | 75.0 |

Among the groups: P<.05 (Sig)
Between the groups:
Exp. vs. control-I : \(X^2=2.13\) p<.02 (Sig)
Exp. vs. control-II : \(X^2=4.46\) p<.05 (NS)
Control-I vs. control-I : \(X^2=0.01\) p>0.90 (NS)

### Table: 3-a

| Types of Morphological or total facial height categories | Exp (n=197) | Con-I (n=194) | Con-II (n=218) | Chi-Square (among the groups) | p value |
|------------------------------------------------------|------------|--------------|---------------|-------------------------------|---------|
| N % | N % | N % | N % | 20.33 | <.01 |
| Hypereuryprosopic | 37 | 18.87 | 52 | 27.04 | 78 | 87.20 |
| Euryprosopic | 67 | 34.17 | 65 | 33.80 | 68 | 31.20 |
| Mesoprosopic | 55 | 28.05 | 48 | 24.96 | 42 | 19.30 |
| Leptoprosopic | 36 | 18.36 | 25 | 13.00 | 24 | 11.00 |
| Hyperleptoprosopic | 2 | 1.02 | 4 | 1.80 | 6 | 2.70 |

Among the groups: p<.01 (Sig)
Between the groups:
Exp. vs. control-I : \(X^2=3.58\) p>.05 (NS)
Exp. vs. control-II : \(X^2=14.93\) p<.01 (Sig)
Control-I vs. control-II : \(X^2=3.83\) p>.05 (NS)

In respect of morphological upper facial height index on the variable “euryene”, experimental group (37.6%) differed significantly with control-I (52.6%) and control-II (51.4%). while control groups amongst themselves did not differ significantly. This was also found on the “mesene” variable, where the experimental group (47.2%) differed significantly both with the control-I (26.8%) and control – II (23.8%) groups, and the control groups amongst themselves did not differ significantly.
The table 4-a gives the mean and standard deviation on the variables hostility, direction of hostility and its components among the three study groups. The groups differed significantly in respect of these studied variables as detailed in table 4a-1 below.

Table: 4-a

| Hostility, Direction of Hostility & Its Components |
|--------------------------------------------------|
| Types of Groups                                  | Exp. (n=242) | Con-I (n=250) | Con-II (n=250) | F-Values | p values |
| Mean     | SD         | Mean     | SD         | Mean     | SD         |
|----------|------------|----------|------------|----------|------------|
| Total Hostility      | 21.50      | 6.40     | 18.97      | 6.35     | 14.40      | 6.60     | 76.54 | <.01 |
| Direction          | -7.52      | 4.87     | -5.81      | 4.93     | -2.27      | 4.09     | 81.92 | <.01 |
| AH                | 4.30       | 2.16     | 3.56       | 1.94     | 2.97       | 1.75     | 28.39 | <.01 |
| CO                | 5.51       | 2.05     | 4.86       | 1.86     | 4.17       | 1.92     | 29.04 | <.01 |
| PH                | 6.32       | 2.09     | 5.41       | 2.04     | 2.62       | 1.81     | 231.58 | <.01 |

The psychometric assessment revealed that recidivistic group had higher prevalence of heightened hostility (P<.05-table 4.a-1). With regard to direction of hostility, it was expressed in negative direction (manifested overtly) in all the three study groups. It was found significantly more in experimental groups (P<.05-table 4.a-1). Similarly, the components of hostility (i.e. AH, CO & PH) were also found to be significantly more in comparison to control-I and control-II group (P<.05-table 4.a-1).

Table: 4.a-1

| Pairs by Their Significance of Difference on Hostility, Direction of Hostility & its Components |
|-----------------------------------------------------------------------------------------------|
| Variable                       | Exp. – Con-I | Exp.-Con-II | Con-I-Con-II |
|--------------------------------|--------------|-------------|--------------|
| Total Hostility     *            | *            | *           |              |
| Direction          *            | *            | *           |              |
| AH                *            | *            | *           |              |
| CO                *            | *            | *           |              |
| PH                *            | *            | *           |              |

*Significant difference at .05 level
Table: 4-b

| Indices | Exp (n=239) | Con-I (n=249) | Con-II (n=248) | F-Values | p values |
|---------|-------------|---------------|---------------|----------|----------|
|         | Mean | SD | Mean | SD | Mean | SD |        |          |
| C       | .33  | .71 | .20  | .53 | .04  | .21 | 80.58  | <.01     |
| CF      | .57  | .84 | .34  | .63 | .08  | .29 | 36.43  | <.01     |
| FC      | .15  | .51 | .44  | .79 | 1.58 | 1.50 | 132.56 | <.01     |
| Dd      | .8   | 1.4 | .3   | .6 | .3   | .7 | 21.7   | <.01     |
| FY      | .6   | 1.1 | .3   | .7 | .2   | .5 | 12.8   | <.01     |
| FV      | .7   | 1.3 | .4   | .9 | .2   | .6 | 12.6   | <.01     |

Table: 4-b.1

| Variable | Exp. – Con-I | Exp.-Con-II | Con-I-Con-II |
|----------|--------------|-------------|--------------|
| C        | *            | *           | *            |
| CF       | *            | *           | *            |
| FC       | *            | *           | *            |
| Dd       | *            | *           | *            |
| FY       | *            | *           | *            |
| FV       | *            | *           | *            |

*Significant difference at .05 level
- Not significant (NS)

With regards to emotional make up of the subjects, the Rorschach test revealed that subjects in recidivistic (experimental) group were highly impulsive in nature (C and CF) as compared to non-recidivistic (control-I group) and normal group (P<.05: table: 4-b.1). On the contrary, normal group was significantly less impulsive (FC) in comparison to jail mates (P<.05 table: 4-b.1). An obsessive thinking pattern (Dd) appeared more significantly pronounced in recidivistic group in comparison to non-recidivistic group and normal group (P<.05 – table: 4-b.1). However, no significant difference was found between control-I and control-II (P>.05 – table: 4-b.1) in respect of obsessive pattern of thinking, feelings of inferiority and anxiety. Similarly the recidivistic group had significantly more feeling of inferiority (FV) and more anxiety (FY) in comparison to control groups (P<.05 table: 4-b.1).

Discussion- The results of studied sample of criminals & non-criminals are suggestive of a number of typifying characteristic features of recidivistic criminals. For purpose of homogeneity and convenience, these features are presented and discussed under the headings: personal characteristics and milieu characteristics. The constituent elements of personal characteristics include the constitutional, behaviour pathologies & personality characteristics, while the constituent elements of milieu characteristics include familial & social characteristics.

Personal Characteristics

Constitutional characteristics- Earliest reference in literature to anthropometric correlates of behaviour pathologies is seen in the writings of Lombroso (1911) & Hooton (1939), who hypothesized that certain anthropometric indices could predict behaviour pathologies. These observations did not, however, attract much attention of social scientists & clinicians. In recent years, study of anthropometric indices as predictors of behaviour pathologies is gaining momentum. In the present study, standard anthropometric assessment of the study probands revealed significant differences between the study groups. It shows a highly significant difference in respect of facial height. Morphological upper facial height index “euryene” was significantly less and “mesene” was more in recidivists while, morphological total facial height index - hypereuryprosopic was found lesser in recidivistic group.
The observations are being cross-validated among convicted hardcore criminals drawn from representative geographical regions of the country.

**Behavioural pathologies**: The neurotic features were present significantly more in recidivists. Most of them were anxious, emotionally disturbed and showed a high prevalence of temper tantrums during childhood. On Rorschach test, the recidivistic group was found to be significantly more anxious (FY) in comparison to control groups. Donald (1986) and Bess (1992) too found higher prevalence of neurotic features in his study sample of criminals but Sheldon et al (1959) reported higher prevalence of neurotic features among non-delinquents.

**Personality characteristics**: In terms of the psychiatric status of recidivists, none of them was found to be suffering from classifiable psychiatric pathology, though there are several studies in literature (Malmquist 1995, Edward 1994, Klimecki 1994 etc) to suggest that hardcore criminals do have much higher prevalence of classifiable psychiatric pathology. Thus, the deviant behaviour in them may be better explained not on the basis of their psychiatric status but on the basis of prevalence of abnormal personality characteristics. Significantly more recidivists had features of mixed personality disorder (I.C.D.X category F61.0), prominent among them being the features of paranoid and emotionally unstable personality disorder-impulsive type. These features are further substantiated by Rorschach findings. Recidivistic group were more impulsive (C and CF) in nature in comparison to control group, while normal group was relatively more emotionally stable in comparison to jail inmates. This poor control of emotion and impulsive nature of recidivists propels them towards the crime. Wood et al. (2000) in their sample of criminals, however, found that most of them were suffering from emotionally unstable personality disorder but of ‘Borderline type’. Sheldon (1959) too observed that delinquents showed less dependency needs, more impulsivity, extraversion, hostility, destructiveness, suspiciousness and less of masochism.

**Milieu Characteristics**

**Familial** – Most studies in literature are suggestive of the enduring impact of home atmosphere in the choice of the career of criminality. Healy & Browner, 1926; Reckless, 1961; Donald, 1986 etc found that the criminal behaviour was the outcome of over-strict & disciplinary joint and large families. The findings of the present study as well as most others cited above also demonstrated that demoralized home conditions (such as presence of immoral/illegal/anti-social code of conduct, substance abuse) are some of the associated significant features of criminal behaviour.

**Social**: Though there are several studies in literature (Reckless. 1961; Bess et. al, 1992; Hale 1994 etc), which strongly focus the impact of social milieu in the making of a criminal, in the present study no such relationship was found evident probably because by study design the recidivistic criminals and normal controls were drawn from the same milieu.

**Conclusion**: The present study provides indices of recidivistic criminals which may be utilized in identifying recidivistic criminals, formulating interventional and rehabilitative strategies along with providing guidelines to judiciary, jail, police authorities for deciding issues of bail and parole. The typifying features of recidivistic criminals are:

1. Recidivistic criminal behaviour is the outcome of demoralized homes (immoral/illegal behaviour of family members).
2. The traits of paranoid and impulsive personality disorder are more frequent among recidivists.
3. Short height and eyebrow connection are prominently present among recidivists.
4. Morphological total facial height index-hypereuryprosopic- as well as morphological upper facial height index-euryene-was lesser while mesene was more among recidivists.
5. Recidivists have more inferiority and anxiety feelings.
6. Heightened impulsivity, increased hostility, lack of guilt, cohort affect, obsessive thinking, poor ego control and feelings of insecurity are the significant features of recidivistic criminals.

Since the sample belonged to restricted geographically defined area, the results may not be generalized. To achieve this, a detailed in-depth investigation may be carried out in different jails in different areas of the country to arrive at definite conclusions.

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*The three sets of specially designed semi-structured proformae may be obtained from the principal author.*
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APPENDIX

GLOSSARY

MAXIMUM HEAD LENGTH (g-op) :
The straight distance from glabella to the opisthocranion.
Glabella (g):
The most prominent point between the eyebrow in the mid-sagittal line above the nasal root.
Opisthocranion(op):
The most distant point from the glabella on the posterior protuberance of the head in the mid–sagittal plane.
MAXIMUM HEAD BREADTH (eu-eu):
The straight distance between the two-euryon points.
Euryon (eu):
The most laterally projecting point on the parietal sides of the head.
MAXIMUM HEAD HEIGHT (v-t):
The projective distance between the vertex and the tragion
Vertex(v):
The highest point on the head in the mid-sagittal plane.
Tragion(t):
The points just above the upper margin of the tragus of the ear.
MINIMUM FRONTAL BREADTH (ft-ft):
The straight distance between the two frontotemporal points.
Frontotemporal (ft):
The most medial point on the temporal line on the temporal bone.
BIZYGOMATIC BREADTH (zy-zy):
The straight distance between the two zygion points.
Zygion(zy):
The most laterally projecting point on the zygomatic arch.
BIGONIAL BREADTH (go-go):
The straight distance between the two gonion points.
Gonion(go):
The most lateral point on the posterior-inferior angle of the lower jaw.
MORPHOLOGICAL UPPER FACIAL HEIGHT (n-pr):
The straight distance from the nasion to the prosthion.
Nasion (n):
The point on the root of the nose in the mid-sagittal plane.
Prosthion(pr):
The lowest on the margin of the gum of the upper jaw between the two middle incisors in the mid sagittal plane.
MORPHOLOGICAL TOTAL FACIAL HEIGHT (n-gn):
The straight distance from the nasion to the gnathion.
Nasion (n):
The point on the root of the nose in the mid-sagittal plane.
Gnathion(gn):
The lowest point on the lower border of the jaw in the mid sagittal plane.
PHYSIOGNOMIC TOTAL FACIAL HEIGHT (tr-gn):
The straight distance between the trichion and gnathion.
Trichion(tr):
The mid point of the anterior border of the hair line on the fore head.
Gnathion(gn):
The lowest point on the lower border of the jaw in the mid sagittal plane.
PHYSIOGNOMIC UPPER FACIAL HEIGHT:
NASAL LENGTH (n-sn):
The straight distance from the nasion to the sub nasal
Nasion (n):
The point on the root of the nose in the mid-sagittal plane.

Sub-nasal(sn):
The point were the lower margin of the nasal septum meets the upper lip.

NASAL BREADTH (al-al):
The straight distance between the two-alare points.

Alare (al):
The most laterally projecting points on the nasal wings.

NASAL DEPTH (prn-sn):
The projective distance from the pronasale to subnasale.

Pro-nasale(prn):
The most distal point at the tip of the nose in the mid sagittal plane.

Sub-nasal(sn):
The point were the lower margin of the nasal septum meets the upper lip.

MOUTH BREADTH (ch-ch):
The straight distance between the two chelion points.

Chelion (ch):
The point at the corner of the mouth.

HEIGHT OF THE LOWER FACE:
The Straight distance between the prosthion and the gnathion.

Prosthion(pr):
The lowest on the margin of the gum of the upper jaw between the two middle incisors in the mid sagittal plane.

Gnathion(gn):
The lowest point on the lower border of the jaw in the mid sagittal plane.

PHYSIOGNOMIC EAR LENGTH (sa-sba):
The straight distance from the superaurale to the subaural.

Subaural (sba):
The lower most point on the lower margin of the ear lobe.

Superaural(sa):
The upper most point on the upper margin of the helix of the ear.

PHYSIOGNOMIC EAR BREADTH (pa-pra):
The straight distance the preaurale and the postaurale.

Preaurale(pra):
The meeting point of the base of the aurale of a straight line drawn perpendicular from the post aurale to the long axis of the aurale.

Postaurale (pa):
The lateral most point on the posterior margin of the hole of the ear.

HEIGHT VERTEX OR STATURE (v-floor):
The vertical distance between the vertex and the floor.

Vertex (v):
The highest point on the head in the mid sagittal plane.

HEIGHT ACROMION (a-floor):
The vertical distance between the acromion and the floor.

Acromion (a):
The most distal and superior point on the lateral margin of the acromion process of the scapula.

HEIGHT ILOOCRISTALE (ic-floor):
The vertical distance between the iliocristale and the floor.

Iliocristale (ic):
The most lateral point on the lateral border of the upper margin of the crest of the ilium.

SITTING HEIGHT VERTEX (v-sitting surface):
The vertical distance from the vertex to the plane where the subject is sitting.

Vertex (v):
The highest point on the head in the mid sagittal plane.

BIACRONIAL BREADTH (a-a):
The straight distance between the two acromion points.

Acromion (a):
The most distal and superior point on the lateral margin of the acromion process of the scapula.

BICRISTAL BREADTH (ic-ic):
The straight distance between the two-iliocristale point.

Iliocristale (ic):
The most lateral point on the lateral border of the upper margin of the crest of the ilium.