

**STUDY ON VARIOUS OFFENCES AND RISK
FACTORS FOR JUVENILE DELINQUENCY**

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CERTIFICATE

This is to certify that the dissertation titled “**STUDY ON VARIOUS OFFENCES AND RISK FACTORS FOR JUVENILE DELINQUENCY**” submitted by Dr.I,RATHINABALAN to the Faculty of pediatrics, The Tamilnadu Dr. M.G.R. Medical university, Chennai in partial fulfillment of the requirement for the award of M.D. Degree (Pediatrics) is a bonafide research work carried out by him under our direct supervision and guidance, during the academic year 2008-2011

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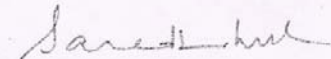
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INTRODUCTION

It may be idealistic to hope for a society free of crime and delinquency. Some degree of deviation in the form of crime and delinquency may be inevitable and part of the natural order of things in a free and democratic society. Furthermore, for the most part, crime and delinquency are not absolutes, but are highly determined by factors that change over time as a result of modifications in the law and changes in social customs.

The word adolescent means 'To Emerge'. It is the period of transition from childhood to adulthood. The emotional and psychological changes occurring during this period poses a unique challenge to the healthcare providers. Among the health problems of adolescents, mental health problems are second on the list next to the nutritional problems.

Antisocial behavior is inevitable in the course of development of children and is among the most common presenting complaints in the practice of child and adolescent psychiatry. Not all antisocial behavior is pathological. Normative risk-taking behavior and isolated incidents of antisocial behavior have to be delineated from syndromal clustering of behavior problems.

Antisocial behavior is a societal term, delinquency is a legal term and conduct disorder is a psychiatric diagnostic term from mental health perspective.

CONDUCT DISORDER (CD)

Conduct disorder is a disruptive behavioral disorder. It is characterized by a repetitive and persistent pattern of behavior that violates the basic rights of others or age-appropriate norms and rules of the society.

DSM - IV – TR Diagnostic Criteria

A. The presence of three (or more) of the following criteria in the past 12 months, with at least one criterion present in the 6 months:

Aggression to people and animals

1. Often bullies, threatens and intimidates others
2. Often initiates physical fights
3. Has used a weapon that can cause serious physical harm to others (e.g. knife, gun)
4. Has been physically cruel to people
5. Has been physically cruel to animals
6. Has stolen while confronting a victim (e.g. purse snatching, armed robbery).

7. Has forced someone into sexual activity.

Destruction of property

8. Has deliberately engaged in fire-setting with the intention of causing serious damage.
9. Has deliberately destroyed others' property (other than by fire-setting).

Deceitfulness or theft

10. Has broken into someone else's house, building, or car.
11. Often lies to obtain goods or favors or to avoid obligations (i.e. "cons" others).
12. Has stolen items of nontrivial value without confronting a victim (i.e. shoplifting, forgery).

Serious violations of rules

13. Often stays out at night despite parental prohibitions, beginning before age 13 years.
14. Has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period).
15. Is often truant from school, beginning before age 13 years.

B. The disturbance in behavior causes clinically significant impairment in social, academic or occupational functioning.

C. If the individual is age 18 years or older, criteria are not met for Anti-social personality disorder.

Specify type based on age at onset:

Childhood-onset type: onset of at least one criterion characteristic of conduct disorder prior to age 10 years.

Adolescent-onset type: absence of any criteria characteristic of conduct disorder prior to age 10 years.

Specify severity:

Mild: few if any conduct problems in excess of those required making the diagnosis and conducting problems cause only minor harm to others.

Moderate: number of conduct problems and effect on others intermediate between “mild” and “severe”.

Severe: many conduct problems in excess of those required to make the diagnosis or conduct problems cause considerable harm to others.

RISK FACTORS:

Current data on conduct disorder best fit a ‘Cumulative risk factor model’, where the likelihood of disruptive behavior increases as the risk accumulates.⁽¹⁾

Biologic factors:

Genetics:

It is unlikely that simple Mendelian inheritance or even a combination of genes can explain the complex behaviors of conduct disorder.

The Dopamine receptor DRD4 gene⁽²⁾, Catechol-O-methyltransferase and Tryptophan hydroxylase gene⁽³⁾ have been implicated.

Functional neuroanatomy:

Impairments in the function of amygdala and dysfunctional serotonergic projection to the prefrontal cortex are associated with impulsive violence.

Neurotransmitters:

Higher blood serotonin is associated with violence in adolescence ⁽⁴⁾. Low salivary cortisol level is associated with early onset and persistence of aggression in boys⁽⁵⁾ .

Under arousal of autonomic nervous system:

Increased fearfulness, reduced vagal tone, lower baseline heart rate, lower skin conductance and reduced noradrenergic functioning are frequently observed findings in delinquents.

Prenatal & perinatal factors:

Parental substance abuse and maternal smoking during pregnancy have been found to predict conduct disorder ⁽⁶⁾ , including an onset before puberty⁽⁷⁾ .

Functional factors:

Neuropsychological functioning:

Deficits in verbal IQ, language abilities and executive functions are common in children and adolescents with conduct problems^(8,9).

Intelligence & academic problems:

IQ scores of children with conduct disorder are on average 8 points lower than those of nondelinquent children. But, in studies controlling ADHD, the CD – IQ relationship is often reduced to nonsignificance. Moreover very young girls with conduct problems tend to have high IQ scores ⁽¹⁰⁾.

Reading problems:

For boys, disruptive behavior is a risk for later reading problems, but not vice versa ⁽¹¹⁾. For girls, early reading problems are predictive of teenage disruptive behavior ⁽¹¹⁾.

Temperament:

Negative emotionality, intense & reactive responding and inflexibility are predictive of externalizing behavior problems by late childhood⁽¹²⁾.

Attachment:

Although a link between attachment and conduct disorder is of interest to many, strong evidence supporting a link between attachment and CD is lacking ⁽⁹⁾.

Social skills:

Boys with CD demonstrate a bias to attribute hostile intentions to others. They adopt an egocentric bias in describing their peers⁽¹³⁾.

Puberty:

Early physical maturation is associated with increased problem behavior in girls, but not in boys.

Psychosocial factors:

Parenting:

Both the parental psychopathology and the parenting behavior contribute to CD, but the former is a stronger determinant. Coercive parenting behaviors appear to lead to aggressive behavior in young girls as well as in boys⁽¹⁴⁾.

Child abuse:

Childhood victimization of boys and girls, all categories such as emotional, physical and sexual abuse, as well as maltreatment and neglect, is predictive of criminality and violence.

Peer effects:

Peer relationships influence the growth of problem behavior in youth. It influences the development and maintenance of CD symptoms.

Neighborhood and socio-economic factors:

Community disorganization, availability of drugs, and the presence of neighborhood adults involved in crime ⁽¹⁵⁾, as well as poverty, exposure to racial prejudice are found to be predictive of CD. Families characterized by social isolation, broken homes, sparse networks, poor social ties are much more likely to physically abuse the children, increasing their risk for aggression ⁽¹⁶⁾.

PROTECTIVE FACTORS:

The Risk Resilience Model posits that it is the gradual accumulation of risk as well as absence or weakness of protective factors and their interaction that ultimately lead to CD rather than single risk factors operating in isolation.

Protective factors are not simply the absence or opposite of risk factors. Protective factors are best defined as those variables that affect the core aspects of functioning in the presence risk factors. Research, however has largely ignored these in favor of elucidating risk.

It is quite likely that more emphasis on these variables could significantly influence practice and policy.

High IQ, the ability to relate well to others, areas of competence outside school, positive social orientation, resilient temperament, anxiety^(17,18) and a good relationship with at least one parent or other important adult offer protection against antisocial behaviors and delinquency in the presence of risk.

Being female may be protective via different parenting or socialization patterns. Also, girls mature and acquire skills more quickly.

Prosocial peers and a school atmosphere that fosters success, responsibility and self-discipline also emerge as protective factors.

The role of parenting is important through school-age years, but seems to decline from mid-adolescence onwards as internal psychological structures develop and become more important for self-regulation than parenting.

TREATMENT:

CD is a severe and complex form of psychopathology, presenting with multiple deficits in a range of domains of functioning. Psychiatric interventions can be successful only if they are carefully coordinated, aimed at multiple domains of dysfunction, and delivered during extended periods of time.

The interventions should be multimodal and should address the developmental needs of the child. Early intervention is better and prevention is better than cure.

The various aspects include, contingency management treatment, parent management training, functional family therapy, cognitive behavioral skills training and more importantly Multisystemic therapy.

Drugs like mood stabilizers, antipsychotics, stimulants, antidepressants, alpha 2 agonists and beta blockers are best looked on as adjuncts in the treatment of uncomplicated CD, and may be useful for crisis management and short-term intervention.

INDIAN LAW AND JUVENILE DELINQUENCY:

Government of India is committed to the care of the children and juveniles. It has enacted an act – Juvenile justice (care and protection of children) act – 2000, amended on 2006, to deal with the juvenile delinquency. According to this act NO JUVENILE should be sentenced to death or imprisonment. This act has the following definitions,

Juvenile or Child – a person who has not completed eighteenth year of age.

Juvenile in conflict with law – a juvenile who is alleged to have committed an offence.

Offence – an offence punishable under law, for the time being, in force.

Observation homes – homes meant for the temporary reception of any juvenile in conflict with the law during pendency of any inquiry regarding them.

Special homes – homes meant for the reception and rehabilitation of juvenile in conflict with the law.

This act is designed for the care, protection, development and rehabilitation of juvenile in conflict with law, and children in need of

care and protection, as well as the adjudication and disposition of matters related to them.

JUVENILE JUSTICE BOARD:

This act has set up a 'Juvenile justice board', which is a body that deals exclusively and sympathetically with all the legal proceedings relating to children who are in conflict with law, is functioning in the juvenile homes.

The other bodies that have been set up by this act include, Child welfare committee, Juvenile police unit and Juvenile probation service.

PROGRAMME FOR JUVENILE JUSTICE:

The Ministry of Social Justice and Empowerment is implementing a programme called 'A Programme for Juvenile Justice'.

Objectives:

1. To extend help to state governments to bear the cost of infrastructure and services development under the juvenile justice act. The purpose is to see that under no circumstances the child in conflict with law is lodged in regular prison.

2. To ensure minimum quality standards in the juvenile justice services.
3. To provide adequate services for prevention of social maladjustment and rehabilitation of socially maladjusted juveniles.
4. To ensure participation of community and other organizations into the care and protection of children in conflict with law who are perhaps more vulnerable than other group of children.

Under the scheme, the ministry provides fifty percent assistance to the state governments and union territories for establishment and maintenance of various levels institutions for juvenile delinquents.

JUVENILE DELINQUENCY – GLOBAL SCENARIO:

There is a widespread increase in the incidence of juvenile delinquency worldwide. Violence perpetrated by the juveniles is no less serious or lethal than violence committed by adults.

In the US, 2% of children between 7 and 17 years attend juvenile courts⁽¹⁹⁾.

The type of offence differs considerably in various regions in the world. Gang violence and school shooting are common in western countries due to the free availability of firearms. These offences are rarely reported in countries like India.

JUVENILE DELINQUENCY – INDIAN SCENARIO:

Juvenile delinquency is on the increase in India during the past two to three decades due to changes in the cultural pattern, urbanization and industrialization ⁽¹⁹⁾.The highest incidence is found in children aged 15 years and above ⁽¹⁹⁾.The incidence in boys is 4 to 5 times higher than the incidence among girls ⁽¹⁹⁾.

In the year 2008, Madhyapradesh reported the highest incidence followed by Maharastra ⁽²⁰⁾.

Juvenile delinquency is least in states like Jammu&Kashmir, Sikkim and Tripura with incidence in Manipur and Nagaland being nil in 2008 ⁽²⁰⁾.

Tamilnadu reported a total of 858 cases in 2008⁽²⁰⁾. Theft is the most common offence followed by Hurt ⁽²⁰⁾.

Table showing juvenile crimes under Indian penal code ⁽²⁰⁾.

Year	Juvenile crimes	Total cognizable crimes	Percentage	Mid-year population (in lakhs)	Rate (per lakh population)
1995	9766	1695696	0.6	9160	1.1
1996	10024	1709576	0.6	9319	1.1
1997	7909	1719820	0.5	9552	0.8
1998	9352	1778815	0.5	9709	1.0
1999	8888	1764629	0.5	9866	0.9
2000	9267	1771084	0.5	10021	0.9
2001	16509	1769308	0.9	10270	1.6
2002	18560	1780330	1	10506	1.8
2003	17819	1716120	1	10682	1.7
2004	19229	1832015	1	10856	1.8
2005	18939	1822602	1	10028	1.7
2006	21088	1878293	1.1	11198	1.9
2007	22865	1989673	1.2	11366	2.0
2008	24535	2093379	1.3	11531	2.1

Table showing age-wise distribution of crimes among delinquents ⁽²⁰⁾.

Year	7-12 yrs of age	%	12-16 yrs of age	%	16-18 yrs of age	%	Total
1998	3336	17.6	11548	61	4039	21.3	18923
1999	4039	21.9	10311	55.9	4110	22.3	18460
2000	3292	18.3	11389	63.3	3301	18.4	17982
2001	3696	11	12729	37.9	17203	51.2	33628
2002	4488	12.5	13864	38.7	17427	48.7	35779
2003	3584	10.8	11687	35.1	18049	54.2	33320
2004	2107	6.8	12415	40.1	16421	53.1	30943
2005	1645	5	13090	40.1	17946	54.9	32681
2006	1595	5	12535	39	18015	56	32145
2007	1460	4.2	12114	35.1	20953	60.7	34527
2008	1281	3.7	12272	35.6	20954	60.7	34507

Table showing sex-wise distribution of crimes among delinquents ⁽²⁰⁾.

Year	Boys	Girls	Total	% of girls
1995	14542	4251	18793	22.6
1996	14068	5030	19098	26.3
1997	14282	3514	17796	19.7
1998	13974	4949	18923	26.2
1999	13088	5372	18460	29.1
2000	13854	4128	17982	23.0
2001	31295	2333	33628	6.9
2002	35551	2228	35779	6.2
2003	30985	2335	33320	7.0
2004	28878	2065	30943	6.7
2005	30606	2075	32681	6.3
2006	30375	1770	32145	5.5
2007	32671	1856	34527	5.4
2008	32795	1712	34507	5.0

Table showing Juvenile delinquents under different crime heads⁽²⁰⁾.

Year	Theft	Murder	Hurt
1995	2845	253	791
2000	2388	267	1497
2001	3196	531	3234
2002	3361	531	4137
2003	3680	465	3074
2004	4554	472	3226
2005	4846	522	2979
2006	5316	605	3585
2007	5606	672	3810
2008	5615	743	4257

LITERATURE REVIEW

STUDY 1: A Study of some aspects of psychosocial pathology of juvenile delinquency⁽²¹⁾.

Authors: Jayashankarappa, Prasada rao,

Place: Juvenile homes in Pondicherry.

Sample size: 30.

Study design: Case Control study.

Conclusion: Socially and morally unfit behavior of parents and lack of affection and understanding were triggering factors.

STUDY 2: Delinquency in India – A comparative analysis⁽²²⁾.

Authors: C A Hartgen, S Priyadarshini

Place: Chennai, Thamaraiikulam.

Sample size: 306.

Study design: Case Control study.

Conclusion: Delinquency was more prevalent among low socioeconomic status adolescents. Rates were similar among rural and urban boys.

STUDY 3: Family dysfunction in adolescents with suicidal behavior and in adolescents with conduct disorder ⁽²³⁾.

Authors: Svetlana et al

Place: Center for child & adolescent psychiatry in Novi sad.

Period: 2002 – 2004.

Method: Prospective study.

Results: Most adolescents with conduct disorder were from single parent household. These adolescents passed into adolescence with little reason to feel that they could rely on their parents for support or on their home as a place of sanctuary.

Published in : Medcinski pregled. 58(5-6):240-4.

STUDY 4: Risk factors for conduct disorder among Navajo Indian men and women ⁽²⁴⁾.

Authors: S J Kunitz et al.

Objective: To describe the risk factors for conduct disorder before age 15 among Navajo Indians.

Conclusion: Physical and sexual abuse in childhood, abusive maternal drinking, younger age and being a male rather than female are significantly associated with conduct disorder. Social status and religion did not show any significant association.

Published in: Social psychiatry & psychiatric epidemiology, 01/05/1999; 34(4):180-9.

STUDY 5: Familial risks, conduct disorder & violence: A Finnish study of 278 adolescent boys and girls ⁽²⁵⁾.

Authors: Essi ilomeki et al.

Objective: To investigate the impact of familial risk factors on the development of violent behavior and conduct disorder.

Period: April 2001 – January 2004.

Sample size: 278.

Conclusion: Domestic violence and broken family increases the risk in girls. Among boys no association found between familial risk factors and conduct disorders.

Published in: European child & adolescent psychiatry
03/2006;15(1):46-51.

STUDY 6: Conduct disorder in seven-year-old children – results of ELSPAC study .2. Risk factors ⁽²⁶⁾.

Authors: Kukla L et al.

Results: Mothers of children with conduct problems had more often lower education, smoked and had psychological problems in childhood and as adults. Fathers of children with conduct problems had more often conflicts with law.

Published in: Caropis lekasu ceskych, 01/02/2008;147(6):311-8.

STUDY 7: Maternal smoking during pregnancy and severe antisocial behavior in offspring: a review ⁽²⁷⁾.

Authors: Lauren S wakschlag et al.

Objective: To review the evidence of causality between maternal smoking during pregnancy and delinquency.

Conclusion: Existing evidence provides consistent support for, but not proof of, an etiological role.

Published in: American journal of public health.

01/07/2002;92(6):966-74.

JUSTIFICATION

As already cited, juvenile delinquency is on the increase in India. Indian literature on juvenile delinquency is scarce. For rational planning and effective implementation of preventive strategies, we need more information on the risk factors. Hence we proceeded with the study.

OBJECTIVE

To assess the common offences and the risk factors for juvenile delinquency under our conditions.

SUBJECTS AND METHODS

1.METHODOLOGY

Study design:

Case Control study.

Study place:

Special juvenile home, Kellys, Chennai and a Corporation
school in Chennai.

Period:

January 2009 to November 2010.

Study Subjects:

Cases:

Children and adolescents retained at the Special juvenile
home in Kellys, Chennai, by judicial order.

Control:

Boys and Girls of 10, 11, and 12 standards, who did not get indulged in mischievous behavior, in a corporation school in Chennai.

Inclusion criteria:

Juveniles and school children who were willing to participate in the study.

Exclusion criteria:

Cases - None.

Controls – Children who were misbehaving.

Sample size:

Cases – 60, Controls – 120.

2.MANEUVER:

Permission from The Director, Department of Social Defenses, Government of Tamilnadu was obtained to visit the Special home in Kelley's, Chennai. Special home was visited on weekdays between 2pm and 4pm. Interview was carried out without disturbing their daily routine. Privacy was maintained during interview. Juveniles were interviewed one by one. Adequate time was spent with each juvenile to

establish a good rapport, before proceeding to the interview. Minor health check-ups were done and health tips were given to win their confidence, as needed.

All the juveniles participated in the study with interest. Their responses were recorded in the questionnaire, which was formulated in the local language. Doubtful parts of the questionnaire were explained in detail to them before recording the response. As no informants were available, we could interview only the juveniles to gather the information.

Controls were selected from a corporation school in Chennai which is catering to students of lower socioeconomic status. After obtaining permission from the school Headmistress, both boys and girls of 10, 11 and 12 standard students were interviewed in the same manner described above. All of them participated with enthusiasm. Same questionnaire was used in both.

The questionnaire (annexure – I) consisted of five parts. Each part had several items. We have given the definition of each factor when they will be considered as a risk factor for delinquency in parentheses near each item, except for the self-explanatory ones.

The first part consisted of **demographic details** like name, age (>15 years), sex (male), residence (urban), educational qualification (<8

std), if previously employed or not, father's age (>50 years), mother's age (>50 years), father's educational qualification (< 8 std), mother's educational qualification (<8std), father's occupation (laborer or not working), mother's occupation(laborer), family size (>4), socioeconomic status according to the updated Kuppusamy scale (lower class i.e. class 4&5) and the type of offense they committed and the number of times they had been present in the special home.

The second part consisted of **personal factors** like eating habits (nonvegetarianism), frequency of visits to place of worship like temple/mosque/church (< 1 visit per week), whether a smoker (daily), whether an alcohol user (at least once a week), whether using substances other than alcohol (at least once), whether differently abled, whether an epileptic (should be on long term anticonvulsant medication), whether suffering from any chronic illness, whether attempted suicide ever before and whether got treated in a temple/mosque/church ever before (at least once).

The third part consisted of **family factors** like whether any of the family members had attempted or committed suicide (at least once), whether anybody got treated in temple/mosque/church (at least once), whether anybody took alcohol daily, whether anybody suffered from mental disorder, whether parents used to quarrel or fight with each other

(severe enough to cause an impact on the child), whether parents were divorced or living separately (for at least 6 months), whether any of the parent had died, favorite family member (should be an adult), whether any of the sibling had similar legal problems (already on special home or undergoing trial), punitive parenthood, whether sexually abused by any of the family members (even once), whether father was a smoker (daily) or an alcohol user (at least once in a week) or using any other substance (at least once) or ever imprisoned before (at least once), whether mother was a smoker (daily) or an alcohol user (at least once a week) or using any other substance or ever imprisoned before (at least once), and whether the parents were loving and caring ones.

The fourth part consisted of **school factors** like whether willingly attending school with interest and motivation, what they don't like about their school, whether school truant, aim during schooling, whether participated in school competitions (at least once in a year), whether suspended (at least once) or dismissed from school, and corporal punishment.

The fifth part consisted of **social factors** like whether their family migrated from a rural to an urban area, friendly neighborhood, whether had friends with similar behaviors and whether sexually abused by any family friends, neighbors or any other person known or unknown.

3. STATISTICAL ANALYSIS

The variables were expressed in frequencies with their percentage. The data collected were subjected to univariate analysis using CHI-SQUARE test and a 'p' value of <0.05 was considered significant. Those factors which were found to be statistically significant were subjected to multivariate analysis using Logistic regression. Only those factors with significant Odds Ratio and 95% Confidence Interval were considered to be independently associated with delinquency.

RESULTS

A total of 61 juveniles (Cases) participated in the study, of whom, 60 were boys and one was a girl. A total of 124 children (Controls) participated in the study, of whom 61 were boys and 63 were girls.

In our study, theft (78.7%) was the most common offence followed by murder (14.8%) and hurt (4.9%). One boy was brought there for marrying a minor girl (1.6%). (Figure – 1).

22(36%) of the 61 delinquents had been there at the home, for more than one time, since they repeated the offences.

Among the demographic factors, male sex, residence (urban), educational qualification (< 8 std), being employed, father's age (>50 years), mother's education (< 8 std), mother working as a laborer) and family size (> 4) were found to be statistically significant after univariate analysis. (Table – 1).

Figure – 1.

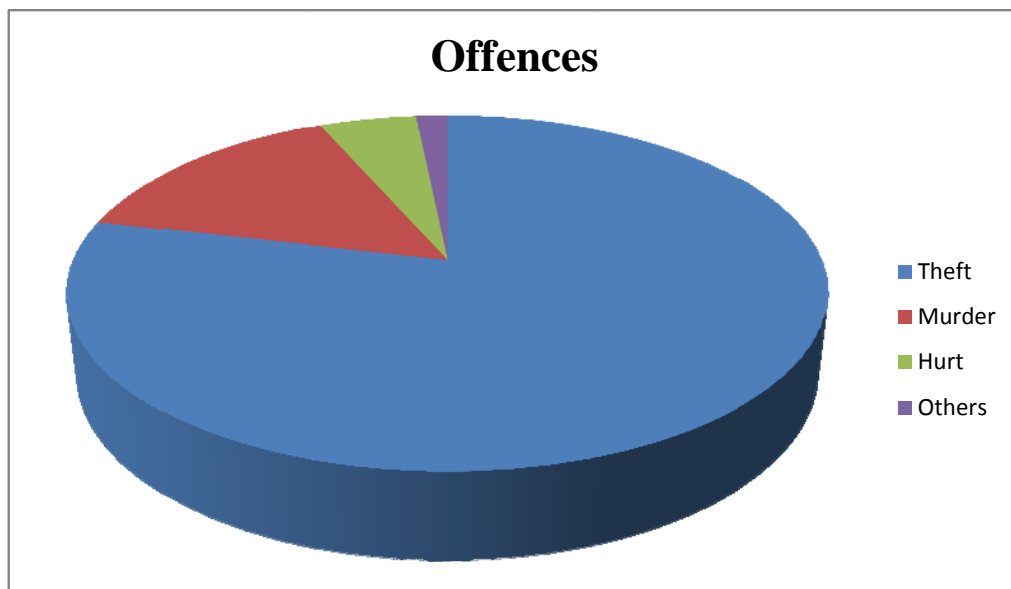


Table-1.Demographic factors

Demographic factor	No of Cases (%)	No of controls (%)	CHI-Square value	'p' value
Age > 15 years	50(82%)	87(70.2%)	2.966	0.108
Male	60(98.4%)	61(49.2)	40.525	< 0.001
Urban residence	55(90.2)	122(98.4)	6.682	< 0.001
Education < 8 std	41(67.2)	0	124.453	< 0.001
Being employed	56(91.8)	6(4.8)	138.774	< 0.001
Father's age > 50 years	16(26.2)	15(12.1)	10.852	< 0.01
Mother's age > 50 years	1(1.6)	4(3.2)	1.404	0.496
Father's education < 8 std	33(54.1)	47(37.9)	6.957	0.073
Mother's education < 8std	31(50.8)	32(25.8)	14.290	< 0.01
Father's occupation (laborer or not working)	61(100)	124(100)	0.000	Not significant
Mother working as a laborer	42(68.9)	34(27.4)	28.999	< 0.001
Family size >4	30(49.2)	65(52.4)	8.482	< 0.01
Socio economic status (class 4&5 of updated Kuppusamy scale)	60(98.4)	124(100)	5.128	0.074

But after multivariate analysis, only the following factors were found to be statistically significant. These were male sex, being employed, father's age more than 50 years and mother working as a laborer. The other factors like residence (urban), mother's education (< 8 std) and family size (>4) were statistically insignificant. (Table – 2). Educational qualification less than 8 std was dropped in multivariate analysis due to the multicollinearity effect.

Table-2. Demographic factors

Demographic factor	Odds Ratio	95% Confidence interval
Male	61.967	8.325 – 461.255
Being employed	220.267	64.466 – 752.599
Father's age >50 years	2.584	1.178 – 5.667
Mother working as a laborer	5.851	2.993 – 11.439
Urban residence	0.150	0.029 – 0.768
Mother's education < 8std	0.877	0.281 – 2.738
Family size (>4)	0.878	0.476 – 1.622

Among the personal factors, eating habits (non vegetarianism), being a smoker (daily), being an alcohol user, being differently abled and being an epileptic were found to be statistically significant after univariate analysis. (Table – 3).

Table - 3. Personal factors

Personal factor	No of cases (%)	No of controls (%)	CHI-Square value	‘p’ value
Frequency of visit to place of worship (<1 per week)	25(41)	38(30.6)	8.769	0.067
Eating habits (non vegetarianism)	59(96.7)	90(72.6)	15.023	< 0.001
Smoker (daily)	37(60.7)	2(1.6)	85.672	< 0.001
Alcohol use (at least once in a week)	38(62.3)	2(1.6)	88.953	< 0.001
Substance use other than alcohol	11(18)	2(1.6)	20.005	< 0.01
Being differently abled	9(14.8)	5(4)	12.214	< 0.05
Epileptic	6(9.8)	0	12.606	< 0.01
Chronic illness	2(3.2)	0	4.110	0.128
Suicide attempt (at least once)	7(11.5)	6(4.8)	2.756	0.126
Got treated in a place of worship (at least once)	4(6.6)	0	8.311	< 0.01

But after multivariate analysis, only eating habits (non vegetarianism), being a smoker(daily) and being differently abled were the factors found to be statistically significant. Alcohol use, substance use, epileptic and treatment in a place of worship were dropped in multivariate analysis due to multicollinearity effect.

Table-4. Personal factors

Personal factor	Odds Ratio	95% Confidence interval
Eating habits (non vegetarianism)	11.144	2.579 – 48.150
Smoker(daily)	94.042	21.223 – 416.712
Being differently abled	4.119	1.316 – 12.889

Among the family factors separated parents (for at least 6 months), single parent, punitive parenthood, smoking father (daily), alcohol use in father(at least once a week), substance use other than alcohol in the father (at least once) and parents who are not loving and caring were found to be statistically significant after univariate analysis. (Table – 5).

Table-5. Family factors

Family factor	No of cases (%)	No of controls(%)	CHI-Square value	'p' value
Anybody attempted suicide (at least once)	6(9.8)	5(4)	2.463	0.182
Got treated in place of worship (at least once)	1(1.6)	2(1.6)	0.000	1
Anybody drinking alcohol daily	18(29.5)	37(29.8)	0.002	0.999
Anybody suffering from a mental disorder	0	6(4.83)	3.051	0.180
Quarrel/fight between parents or father harassing the mother (severe enough to cause an impact on the child)	26(42.6)	40(32.3)	1.914	0.193
Separated parents	11(18)	1(0.8)	20.002	< 0.01
Single parent	24(39.3)	10(8.1)	26.668	< 0.01
Attachment with any of the important adult in family	0	4(3.2)	3.25	0.354
Punitive parenthood	9(14.8)	51(41.1)	28.770	< 0.01
Sexual abuse (even once)	1(1.6)	0	2.04	0.330
Smoking father (daily smoker)	41(67.2)	48(38.7)	13.306	< 0.01

Table – 5. Family factors, continued.

Family factor	No of cases (%)	No of controls(%)	CHI-Square value	'p' value
Alcohol use in father (at least once in a week)	43(70.5)	77(62.1)	27.516	< 0.01
Substance use, other than alcohol, in father	12(19.7)	0	26.82	< 0.01
Imprisonment of father	13(21.3)	2(1.6)	22.08	< 0.01
Smoking mother	0	0	-	-
Alcohol use in mother	0	0	-	-
Substance other than alcohol in the mother	0	0	-	-
Imprisonment of mother	0	0	-	-
Parents – not loving and caring	8(13.1)	4(3.2)	6.59	< 0.05

After multivariate analysis, separated parents (for at least 6 months), single parent, smoking father (daily), substance use in father(at least once) and parents – not loving and caring were the factors found to be statistically significant. The other family factors namely, alcoholic father and punitive parenthood were statistically insignificant. (Table –6). Imprisonment of father was dropped in multivariate analysis due to multicollinearity effect.

Table – 6. Family factors

Family factor	Odds ratio	95% Confidence interval
Separated parents	27.060	3.403 – 215.163
Single parent	7.395	3.238 – 16.885
Smoking father (daily)	3.246	1.703 – 6.188
Substance use, other than alcohol, in father	14.939	3.224 – 69.212
Parents not loving And caring	4.528	1.306 – 15.695
Alcohol use in father (at least once in a week)	1.458	0.754 – 2.819
Punitive parenthood	0.248	0.112 – 0.547

Among the school factors, unwillingness to attend school, school – truancy, being aimless during schooling and non-participation in school competitions were the factors found to be statistically significant after univariate analysis. (Table – 7).

Table – 7. School factors

School factors	No of cases (%)	No of controls (%)	CHI-Square value	‘P’ value
Unwillingness to attend school	27(44.3)	21.6	56.26	< 0.01
School – truancy	22(36.1)	2419.4	36.18	< 0.01
Being aimless during schooling	27(44.3)	97.3	477.5	< 0.01
Non-participation in school competitions	13(21.3)	675.4	17.839	< 0.01
Suspended (at least once) or dismissed from school	6(9.8)	0	12.61	< 0.05
Corporal punishment	8(13.1)	31(25)	6.41	0.093

After multivariate analysis, unwillingness to attend school, school truancy and being aimless during schooling were found to be statistically significant.(Table – 8). The other school factors namely, non-participation in school competitions and suspension or dismiss from school were dropped in multivariate analysis due to multicollinearity effect.

Table – 8. School factors

School factor	Odds ratio	95% Confidence interval
Unwillingness to attend school	48.441	10.964 – 214.028
School – truancy	7.386	3.717 – 14.678
Being aimless during schooling	10.147	4.355 – 23.643

Among the social factors, migration from rural to urban area, unfriendly neighborhood and company with problem friends were the factors found to be statistically significant. (Table – 9).

Table – 9. Social factors.

Social factor	No of cases (%)	No of controls (%)	CHI-Square value	‘P’ value
Migration from rural to urban area	5(8.2)	55(44.4)	24.39	< 0.01
Unfriendly neighborhood	1(1.6)	15(12.1)	5.65	< 0.05
Company with problem friends	50(82)	2(1.6)	133.12	< 0.001
Sexual abuse outside family (at least once)	1(1.6)	0	2.044	0.330

After multivariate analysis, only company with problem friends was found to be statistically significant. The other social factors like migration from rural to an urban area and unfriendly neighborhood were insignificant in the multivariate analysis.(Table – 10).

Table – 10. Social factors.

Social factors	Odds ratio	95% Confidence interval
Company with problem friends	277.273	59.314 – 1296
Migration from rural to urban area	0.112	0.042 – 0.299
Unfriendly neighborhood	0.121	0.016 – 0.939

The remaining factors like age more than 15 years, mother's age more than 50 years, father's education less than 8 standard or uneducated, father's occupation (laborer or not working), socioeconomic status (class 4&5 of updated Kuppusamy scale), being a substance user, having any chronic illness, having attempted suicide (at least once), having got treated in a temple/mosque/church (at least once), any other family member attempted (at least once) or committed suicide, any other family member got treated in a temple/mosque/church (at least once), whether anybody in home took alcohol daily, whether any family member suffered a mental disorder, whether parents quarrel or fight with each other (severe to cause an impact on the child), sexual abuse inside family (even once), imprisonment of father (at least once), smoking mother (daily), alcohol use in mother (at least once in a week), substance other than alcohol in the mother (at least once), imprisonment of mother (at least once), suspension (at least once) or dismissal from school, corporal punishment at school and sexual abuse outside family (at least once) were found to be statistically insignificant in the univariate analysis itself.

DISCUSSION

In our study, theft is the most common offence committed by the delinquents. This is similar to the National Statistics of our country ⁽²⁰⁾. Murder comes next in the list followed by hurt.

Among the 61 delinquents, sixteen were there in the special home for the second time, five were there for the third time, one was there for more than three times. This fact underlines the need to intervene more effectively.

Even though age more than 15 years does not show statistically significant association, most of the delinquents, i.e. 50(82%) of the total 61 are aged more than 15 years, which is in agreement with the National Statistics ⁽²⁰⁾.

Delinquents are 62 times more likely to be males when compared to normal children. This is similar to the National Statistics, which indicates that delinquency is significantly more common among boys than in girls ⁽²⁰⁾. This may be due to the biological differences, cultural values, different parenting attitudes and protective nature of our society towards female sex.

Lower socioeconomic status does not emerge as a significant factor in our study. This is in contrast to the earlier studies which state

that delinquency is associated with poverty and poor living conditions⁽²²⁾. This may be explained by the fact that controls of our study were chosen from a school which caters almost exclusively to the lower socioeconomic strata.

Delinquents are 220 times more likely to be employed rather than going to school. This may be because, being employed exposes the individual to the various walks of life in a society and the economical independence paves way for the defiant behavior. Previous studies have not evaluated this factor.

Fathers of delinquent children are 2.5 times more likely to be aged more than 50 years compared to fathers of nondelinquent children. This can be explained by the fact that older fathers are likely to be sick and economically dependent. Whereas Mother's age more than 50 years is not a risk factor for delinquency in our study. This may be because women get married earlier in life in our society and unlikely to become older when their children reach adolescence. These factors have not been evaluated before.

Parents' educational qualification does not show significant association with delinquency in our study. But earlier studies have shown that delinquency is common with low maternal education⁽²⁶⁾. Family size and father's occupation are not risk factors for delinquency, in our study.

Mother working as a laborer is almost 6 times more likely to be seen with delinquent as opposed to normal children. This may be because housewives can spend more time with their children and take care of their children better.

Delinquents are 11 times more likely to be nonvegetarians when compared to nondelinquents.

Frequency of visit to the place of worship, epilepsy and chronic illness, suicide attempt and getting treated in a place of worship (possible underlying psychiatric problem) are not risk factors for delinquency, in our study.

Delinquents are 94 times more likely to be smokers than other adolescents. Alcoholism and addiction to other substances do not emerge as risk factors. This may be because of their high cost and difficulty in accessing them.

Delinquents are 4 times more likely to be differently abled, compared to the normal children. This may be due to the fact that these children are likely to suffer enormous physical and mental stress, and societal atrocity. But this finding cannot be relied upon much, because the disabilities are self-reported and not objectively measured. Previous studies have not assessed this factor.

Having a family member who has attempted suicide/got treated in a place of worship/ a mental disorder is not a risk factor in our study. This is in contrast to earlier studies which have found an association between parental psychopathology and delinquent behavior⁽²⁶⁾.

Having a family member (apart from father) who drinks alcohol daily is not a risk factor. This factor might be important in a joint family set up, which is still prevalent in our society, especially among the lower socioeconomic status population. Having parents who quarrel/fight with each other severe enough to cause an impact on the child, or the father harassing the mother physically or mentally is not a risk factor. Other studies have not evaluated these factors.

Delinquents are 27 times more likely to have parents who are living separately (including divorce). This is similar to earlier studies which clearly state that broken home is a risk factor for delinquency⁽²⁵⁾. This is quite understandable given the fact that these children are in a disadvantageous position. One parent might project the anger and frustration towards the other parent on the child. He/she might not take care of the child properly. The child may be emotionally deprived, not receiving its full share of love and affection from both the parents. The child may be left unsupervised.

Children with one living parent are 7 times more likely to become delinquents than other children. This is in agreement with earlier studies⁽²³⁾. These children are in a even more difficult situation than ones with separated parents. The living parent may marry for the second time and the arrival of the newcomer may mean end of the world to the child. If the living parent falls sick, the child may be forced to take care of him/her, the other siblings and the entire family. In addition the child can suffer all the disadvantages already mentioned for the children with separated parents.

Our study has not found any significant association between attachment with an important adult in the family and delinquency. Apart from this, 10 of the 61 delinquents had a sibling with delinquent behavior. Poor role modeling may be an explanation for this. Moreover, they represent an important target group for intervention.

Punitive parenthood and sexual abuse do not emerge as risk factors in our study. Sexual abuse inside family is not a risk factor for delinquency. This is in contrast to previous studies which have found an association between physical and sexual abuse and delinquency⁽²⁴⁾. The only girl among cases reported that she was sexually abused by the relatives who took care of her, after the death of her parents. Among controls, nobody reported sexual abuse by the family members. This

might be due to underreporting and lack of awareness among children and adolescents of what amounts to sexual abuse.

Delinquents are 1.5 times more likely to have a father who is a smoker and 15 times more likely to have a father who is a substance user other than alcohol.

Alcohol use in father and imprisonment of father does not emerge as risk factors for delinquency in our study. This is against the finding of earlier studies⁽²⁶⁾. None of the cases or controls reported that their mother is a smoker, alcohol user, substance user or imprisoned before. But previous studies contradicts this finding⁽²⁶⁾. This may be reflective of our societal values and high morale of Indian women.

Delinquents are 4.5 times more likely to have parents who are not loving and caring. This finding is similar to earlier studies which have found an association between parental neglect and delinquency⁽²³⁾. This may be because; these children are physically and emotionally deprived and tend to suffer major mental trauma.

Delinquents are 48 times more likely to show unwillingness to go to school compared to normal children. When asked about why they do not want to go to school, 17(27.9%) delinquents reported poor academic performance as the reason. Seven (11.5%) delinquents reported

company with problem friends as the reason. Only 3(4.9%) of them reported punitive teaching as the reason for their unwillingness to go to school. These children might represent important group for intervention. This is the first study to evaluate this factor.

Delinquents are 7.4 times more likely to be school truant. These children tend to become mixed with immoral people, are exposed to violence, are more likely to be abused in the society and are likely to become substance abusers.

Children who are aimless during schooling are 10 times more likely to be delinquents. This is because these children tend to miss the positive influence of the school in their character and personality development. They might not concentrate on the studies and likely to get deviated towards unlawful activities. We are the first to evaluate this factor.

An interesting finding of this study is, most of the children in case group compared to control group participated in sporting events in school. But this finding is statistically not significant.

Suspension or dismissal from school does not emerge as a risk factor. Only 6 of the delinquents and none of the school children reported that they were either suspended or dismissed from school. Two

delinquents reported physical fight with other students as the reason, another two reported long absenteeism as the reason. One delinquent reported damaging school property as the reason; another reported scolding the class teacher as the reason.

Corporal punishment does not emerge as a risk factor in our study. Only 8 out of 61 delinquents reported that they received some form corporal punishment.

Migration from a rural area to an urban area and unfriendly neighborhood do not emerge as risk factors in our study.

Delinquents are 277 times more likely to have company with problem friends. These adolescents are likely to adopt a risky lifestyle and are exposed to bad role models and to become attracted towards behaviors that are not socially acceptable.

Sexual abuse outside the family does not emerge as a risk factor in our study. The only girl among delinquents and none of the school children reported that they were sexually abused. This might be due to underreporting and lack of awareness among children and adolescents about what amounts to sexual abuse, as already stated.

STRENGTHS

1. Our study is the first and largest of its kind in our country in the past nearly three decades.
2. Our study is the first to evaluate almost all of the known risk factors for delinquency.
3. Since ours is a case control study the reliability is more. A prospective study is not possible for a topic like this and the next best method is case control study only.
4. Multivariate analysis has been performed to negate the confounding effect of the other factors over the one in question.

LIMITATIONS

1. Since ours is a case control study interviewer bias is a limitation.
2. Cases, in our study, are selected from a special juvenile home which might represent only the severe forms of juvenile delinquency.
3. Control population is not representative of the entire general children population. Matching is a problem, since all the base line characters like age; sex and socioeconomic status are risk factors for delinquency, themselves.
4. This study is based on information given by juvenile delinquents who are known for their tendency to lie, by nature. So reliability is a limiting factor.

CONCLUSION

Male adolescents, being employed, father aged more than 50 years, mother working as a laborer are risk factors for developing juvenile delinquent behaviors.

Those taking non-vegetarian diet, smoking cigarettes, being differently abled, having a family history of separated parents or single parenting, with father having smoking or substance use behavior are at increased risk of acquiring delinquent behaviors.

Children who feel not having received adequate care from parents, not having interest in attending school, truant, pursuing goal without goal, having peers with lying, smoking, alcohol or substance use behavior are at increased risk for delinquency.

RECOMMENDATION

1. Population based epidemiological studies on juvenile delinquency will throw more light on the finer details.
2. Since our country is a mixture of different cultures, we recommend multicenter studies be performed involving various parts of the country.
3. Studies incorporating parents interview and school teacher reports will enhance the validity.
4. We need to develop appropriate social intervention to attend to these risk factors at early childhood, to prevent or at least reduce the severity of juvenile delinquency.

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Annexure - I

QUESTIONNAIRE

DEMOGRAPHIC FACTORS:

Name

1. Age [a] <15, [b] >15yrs.
2. Sex [a] male, [b] female.
3. Residence [a] urban, [b] rural.
4. Education [a] <8 std, [b] >8std
5. We(a)re you working [a] yes, [b] no.
6. Father's age [a] <50, [b] >50.
7. Mother's age [a] < 50, [b] >50.
8. Father's education [a] < 8 std, [b] > 8 std.
9. Mother's education [a] <8 std, [b] > 8std.
10. Father's occupation [a] laborer, [b] unemployed.
11. Mother's occupation [a] laborer, [b] unemployed.
12. Family size [a] < 4, [b] > 4.
13. Socio-economic status [a] upper, [b] upper middle,
[c] lower middle, [d] upper lower,
[e] lower lower.
14. Offence (reason) [a] theft, [b] murder, [c] hurt,
[d] others.
15. How many times have you been here [a] one, [b] two, [c] three,
[d] more.

PERSONAL FACTORS:

16. Visiting temple/church/mosque [a] daily, [b] once in a week,
[c] once in a month
[d] very occasionally,
[e] never.
17. Eating habits [a] vegetarian,
[b] nonvegetarian.
18. Are you a smoker [a] yes, [b] no.
19. Are you an alcoholic [a]yes, [b]no.
20. Are you addicted [a] kanja, [b] others, [c] no.
21. Are you differently abled [a] limb defects, [b]hearing,
[c]vision, [d]others, [e]none.
22. Are you an epileptic [a] yes, [b] no.
23. Do you suffer from any [a]lungs, [b]kidney,
chronic illness [c]heart, [d]cancer,
[e]others [f]none
24. Ever attempted suicide [a]yes, [b]no.
25. Ever got treated in a temple or [a]yes, [b]no.
mosque or church

FAMILY FACTORS:

26. Anybody attempted suicide [a]yes, [b]no.
27. Anybody got treated in a temple
mosque or church [a]yes, [b]no.
28. Anybody taking alcohol daily [a]yes, [b]no.
29. Anybody speaking with self [a]yes, [b]no.
30. Do your parents quarrel [a]yes, [b]no.
with each other excessively
31. Are your parents living separately [a]yes, [b]no.
32. Single parent [a]yes, [b]no.
33. Who is your favorite [a] mother, [b]father,
[c]others, [d]none.
34. Does any of your sibling has [a] kept in special home,
any legal problem [b]attending police station,
[c]attending court, [d]none.
35. Punitive parenthood [a] for not going to school,
[b]compelling to go to work
[c] for stealing,
[d] for quarrelling with friends,
[e] after drinking heavily,
[f] none.
36. Ever sexually abused [a]yes, [b]no.

Is your father

37. A smoker

[a]yes, [b]no.

38. An alcoholic

[a]drinks daily,

[b]once in a week,

[c]occasionally [d]never

39. Addicted

[a] kanja, [b] others, [c] no.

40. Ever gone to jail

[a]for stealing, [b]murder,

[c]hurt, [d]none.

Is your mother

41. A smoker

[a]yes, [b]no.

42. An alcoholic

[a]drinks daily,

[b]once in a week,

[c]occasionally [d]never

43. Addicted

[a]kanja, [b]others, [c]no.

44. Ever gone to jail

[a]for stealing, [b]murder,

[c]hurt, [d]none.

45. Is your parents loving you

[a]yes, [b]no.

SCHOOL FACTORS:

46. We(a)re you willingly attending School [a]yes, [b]no.
47. What you don't like about Your school [a]punitive teaching, [b]comparing with other bright students [c]inadequate infrastructure, [d]poor academic performance, [e]bad company [f]others [g]none.
48. Are you school-truant [a]yes, [b]no.
49. Aim during schooling [a]doctor,[b]engineer,[c]lawyer, [d]police, [e]military, [f]sportsperson, [g]others, [h]none.
50. We(a)re you participating in competitions [a]yes, [b]no.
51. Ever suspended or dismissed [a]for bullying other students, [b]for being truant [c]for damaging school properties, [d]for misbehaving with teachers, [e]no.
52. Corporal punishment [a]made to stand in sunlight, [b]got scolded in front of other students, [c]made to kneel down, [d]none.

SOCIAL FACTORS:

53. Does your family migrated from a rural area [a]yes, [b]no.
54. Is your neighborhoods friendly with your family [a]yes, [b]no.
55. Does any of your friend has following behaviors [a]smoking, [b]drinking, [c]addiction, [d]stealing, [e]all of the above, [f]none.
56. Sexually abused (outside family) [a]yes, [b]no.