

# **Family factors associated with conduct disorders in children and adolescents**

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## DECLARATION

I hereby declare that this dissertation titled “**Family factors associated with conduct disorders in children and adolescents**” is a bonafide work done by me under the guidance of **Dr. Priya Mary Mammen**, Associate Professor of psychiatry, Christian Medical College, Vellore. This work has not been submitted to any university in part or full.

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## DECLARATION

I hereby declare that the investigations, which form the subject matter of this thesis, **“Family Factors Associated With Conduct Disorders in children and adolescents”**, were carried out by **Dr. Anoop.R.L**, a bonafide trainee in Psychiatry, under my guidance. This has not been submitted to any university in part or in full.

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## 1. INTRODUCTION

Conduct disorder is a disorder initially diagnosed in childhood or adolescence and refers to a persistent pattern of antisocial behavior in which the individual repeatedly breaks social rules and carries out aggressive acts that upset other people. Antisocial behavior is a common problem in the course of development of children. Although conduct disorder has been widely studied, it still consumes much of the resources of mental health, juvenile justice and the special education system. DSM-IV mentions conduct disorder as one of the most frequently diagnosed conditions in outpatient and inpatient mental health facilities for children <sup>1</sup> DSM- IV specifies for conduct disorder, criteria which includes symptoms from the following areas: aggression against people or animals, property destruction, lying or theft and serious rule violation. It defines conduct disorder as a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated <sup>2</sup>. About a third of those affected have antisocial personality disorder in adult life and a further third experience other personality, psychiatric and psychosocial problems. The prevalence of conduct disorders varies from 6-20% in studies across different cultures and settings <sup>3, 4</sup>. In the evolution of conduct disorders different risk factors are implicated which includes “child biological factors,” “child functional factors,” and “psychosocial factors” <sup>5</sup>. Even though the number of studies discussing the evolution of conduct disorders and factors associated with it are numerous, there is a lack of information on risk factors associated with conduct disorder in our Indian population. In this study we aim to delineate the family factors like parenting style, parental separation, parental psychopathology, family type and family functioning associated with conduct disorders.



## **2. REVIEW OF LITERATURE**

Conduct disorders hold an important position in juvenile disorders due to its etiological factors, clinical presentation, nosological differences, impairments and prognosis. Evidence from prospective longitudinal data shows that childhood conduct disorder precedes a variety of major axis I psychiatric disorders, suggesting that treating conduct disorder might significantly reduce the burden of adult mental disorders.

### **2.1 Nosology**

The category of conduct disorder was officially introduced in DSM-III to describe children who showed a persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated. This definition still used in both DSM-IV TR and ICD-10<sup>1 6</sup>. DSM-III also listed oppositional disorder to characterize children who show persistently disobedient, negativistic and provocative opposition to authority figures, manifested by violations of minor rules, temper tantrums, argumentativeness, provocative behavior and stubbornness. This description remains in DSM-IV TR as a separate category of oppositional defiant disorder. The DSM-IV TR, categorizes oppositional defiant disorder and conduct disorder as separate categories under disruptive behavior disorders. Conduct disorder first diagnosed in childhood or adolescence according to the DSM IV TR, includes symptoms from the following areas: aggression against people or animals, property destruction, lying or theft and serious rule violation, and is manifested by the presence of at least three of the fifteen symptoms in the past 12 months, with at least one symptom present in the past 6 months. The disturbance in behavior must cause clinically significant impairment<sup>1</sup>. The diagnosis of conduct disorder has so far been rather heterogeneous, including a variety of subtypes. Patients with conduct disorders may have symptoms ranging from

mild (e.g. staying out late, lying) and moderate (eg. vandalism, stealing without confronting a victim) to very serious ones (forcing to sexual activity, severe physical cruelty, use of a weapon). During the past two decades, conduct disorder has been classified into subtypes according to onset-age (DSM-IV TR), severity (DSM-IV TR, DSM-III-R), and adolescents' sociality vs. aggressive behaviour (DSM-III-R, DSM-III). Sub typing of conduct disorders has been criticized for poor ability to discriminate patients, and it has been undergoing changes during the past few years in DSM-III, DSM-III-R and DSM-IV TR <sup>2</sup>. Current DSM IV TR considers subtypes of conduct disorder based on age of onset (childhood and adolescent) and severity (mild, moderate and severe).

In ICD-10 conduct disorders are categorized under F 91 which includes different subcategories with specifiers according to the context and setting. The different sub categories in ICD-10 classification of conduct disorders are given below-

F91.0 Conduct disorder confined to the family context

F91.1 Unsocialized conduct disorder

F91.2 Socialized conduct disorder

F91.3 Oppositional defiant disorder

F91.8 Other conduct disorders

F91.9 Conduct disorder, unspecified

In contrast to DSM IV, oppositional defiant disorder is considered under the broad category of conduct disorders in the ICD-10 and subtypes are based on the context rather than age of onset and severity. Though most of the criteria are similar in DSM IV TR and ICD-10, these differences also exist.

**DIAGNOSTIC CRITERIA FOR OPPOSITIONAL DEFIANT DISORDER (ODD) AND CONDUCT DISORDER (CD) ACCORDING TO DSM-IV (TR) and ICD-10**

**Symptoms\***

1. Often loses temper [ICD-10: *Unusually frequent or sever temper tantrums for developmental level*]
2. Often argues with adults
3. Often actively defies or refuses to comply with adults' requests or rules
4. Often deliberately annoys people
5. Often blames others for his or her mistakes or misbehavior
6. Is often touchy or easily annoyed by others
7. Is often angry and resentful
8. Is often spiteful and vindictive
9. Often bullies, threatens or intimidates others
10. Often initiates physical fights [ICD-10: *This does not include fights with siblings*]
11. Has used a weapon that can cause serious physical harm to others
12. Has been physically cruel to people
13. Has been physically cruel to animals
14. Has stolen while confronting a victim (including purse-snatching, extortion, mugging)
15. Has forced someone into sexual activity
16. Has deliberately engaged in fire setting with the intention of causing serious damage
17. Has deliberately destroyed others' property (other than fire setting)

18. Has broken into someone's house, building or car
  19. Often lies to obtain goods or favors or to avoid obligations
  20. Has stolen items of nontrivial value without confronting a victim [ICD-10:  
*Within the home or outside*]
  21. Often stays out at night despite parental prohibitions, beginning before age 13 years
  22. 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) [ICD-10: *Or has run away once for more than a single night (this does not include leaving to avoid physical or sexual abuse)*]
  23. Often truants from school, beginning before age 13 years
- *DSM-IV ODD*: Four or more of symptoms from 1 to 8, lasting at least 6 months, symptoms do not occur exclusively during a psychotic or mood disorder episode.
  - *ICD-10 Oppositional Defiant Conduct Disorder*: four or more symptoms must be present during 6 months, but no more than two must be from symptoms 9 to 23.
  - Symptoms must be developmentally inappropriate in both DSM-IV and ICD-10.
  - *DSM-IV TR CD*: Three or more of symptoms from 9 to 23 in the last 12 months (at least one present in last 6 months)
  - *ICD-10 CD*: three or more symptoms must be present, and at least three must be from 9 to 23. At least one symptom from 9 to 23 must be present for 6 months. Symptoms 11, 12, 14, 15, 16, 17, and 18 need only have occurred once for the

criterion to be fulfilled.

- *Impairment:* Symptoms must cause significant functional impairment in both taxonomies.

## **2.2 Epidemiology**

Prevalence studies are very important for studying risk factors and understanding the developmental context of the disorders. This understanding in turn helps us in planning interventions for respective disorders. The issue of childhood morbidity is high in low and middle income countries as the child and adolescent population is high, health indices are poor, infrastructure is under developed and available resources to deal with the problem are poor. Several national and international studies evaluating the prevalence of these disorders are available for comparison <sup>7</sup>. The estimated lifetime prevalence in the community of conduct disorder in the U.S. was 9.5% (12.5% in males and 7.1% in females), with a mean age of 11.6 years <sup>8</sup>. In a study done by Robins et al the prevalence of conduct disorder referred to mental health clinics in a western population was 1.7% for boys and 0.6% for girls in a mean age of 8-10 year <sup>9</sup>. In a Finnish community based study the prevalence of conduct disorder was 35.6%, being significantly higher among boys (50.4%) than among girls (25.2%). The prevalence of conduct disorder with violent behaviour was 19.8%, with a higher prevalence among boys (30.4%) compared to girls (12.3%). Prevalence of non violent conduct disorder was 13.7% with 18.3% in boys 18.3%, 10.4% and girls <sup>2</sup>. In the famous Great Smoky Mountain study on community prevalence of psychiatric disorders, the prevalence of conduct disorders in boys and girls were found to be 5.43% and 1.3% respectively with a total of 3.32% <sup>10</sup>. The ratio of boys to girls with conduct disorder is between 5:1 and

3:1 depending on the age range studied with a higher ratio in the lower age groups <sup>10</sup>. Boys are more commonly affected at all ages, but as children mature, the gap between boys and girls closes. It seems clear that boys, compared with girls, are more likely to meet criteria for *DSM* definitions of conduct disorders and to exhibit a higher frequency of conduct disorders symptoms. Epidemiological data however still remain inconsistent with this view with some studies showing similar prevalence across the ages <sup>13</sup>. Although symptoms are similar in each gender, boys may have more confrontational behavior and more persistent symptoms. Gender-specific features, which become especially apparent in adolescence, include boys' tendency to exhibit more aggression, and girls' tendency to commit more covert crimes and engage in prostitution <sup>11</sup>. However in the most severely disturbed youth these gender-specific symptoms disappear <sup>8</sup>. Such developmental variations pose a challenge for intervention and screening in early childhood and suggest that assessing child behavior problems alone will not identify the most seriously at-risk groups <sup>12</sup>.

Earlier studies suggested that Oppositional defiant disorder was more prevalent in children (this was incorporated in ICD-10, where diagnosis of oppositional defiant disorder is discouraged after the age of 10 years) while conduct disorder was more prevalent in adolescents. Meltzer found the prevalence of oppositional defiant disorder in 5–10 year olds to be 4.8% for boys and 2.1% for girls <sup>7</sup>.

In a community based study done in Madurai on psychiatric morbidity in a school population, overall prevalence of psychiatric morbidity was found to be 33.7% and that of conduct disorder 11.1%. Although symptoms are generally similar in each gender, boys may have more confrontational behaviour and more persistent symptoms<sup>13</sup>. National studies include those community studies from Bangalore, Ranchi

and Chandigarh giving prevalence rates of conduct disorder of 0.2% in 0-16years, 4.5% in 8-12 years and 5% in 4-11years respectively <sup>14, 15, 16</sup>.

### **2.3 Course of the Disorder**

#### Progression of symptoms in conduct disorders

Longitudinal research has clarified the orderly unfolding of conduct disorder symptoms with age, with onset of less serious symptoms preceding the moderate and severe symptoms <sup>17</sup>. Loeber and colleagues presented a model of three levels of conduct disorders (modified oppositional defiant disorder, intermediate conduct disorders, and advanced conduct disorders) according to the developmental sequence of the onset of symptoms and the severity of the symptoms <sup>18</sup>. The model best fits three pathways:

- (1) an *overt pathway*, progressing from minor aggression to physical fighting and then to violence;
- (2) a *covert pathway* before age 15, from minor covert behaviors to property damage (fire setting or vandalism), and then to moderate to serious forms of delinquency; and
- (3) an *authority conflict pathway* before age 12, progressing from stubborn behavior to defiance and authority avoidance (truancy, running away, staying out late at night) <sup>18, 19</sup>.

The pathways represent different lines of development and developmental tasks and allow for children to be in more than one pathway at any given time, and they may provide an explanation for multi-problem children. Furthermore, others also have found similar evidence for developmental sequences toward violence <sup>20</sup>. Much of the work on developmental pathways did not extend into the preschool period. What is less clear is the extent to which escalation in the severity of aggression in middle to late childhood and in adolescence, primarily represent children who never outgrew preschool

aggression, children who temporarily ceased their aggression, or children who started aggression de novo <sup>17</sup>. Using longitudinal data from the Upper New York Study, it was found that the risk of the onset of conduct disorder was four times higher in oppositional defiant disorder cases than in children without prior oppositional defiant disorder and conduct <sup>17</sup>. As children mature, there are major shifts in the manifestations of disruptive behavior they display, reflecting continuity rather than stability <sup>21</sup>. The most deviant children at one age represent the most deviant at a later age, even though absolute levels of deviance might vary over time. Some researchers maintain that oppositional defiant disorder is a relatively benign disorder with good prognosis <sup>17</sup>. Others perceive the two disorders to be hierarchically related, with only a proportion of oppositional defiant disorder cases progressing to conduct disorder. It is unclear to what extent oppositional defiant disorder constitutes a stepping stone to conduct disorders in girls. Given that late onset of conduct disorders is more common in girls than boys, it is plausible that a proportion of girls with late onset do not show a history of oppositional defiant disorder, and that for girls there are alternative pathways to conduct disorders <sup>22</sup>. Moreover, it is unclear whether specific conduct disorder symptoms in girls, such as lying, usually precede the emergence of more serious behaviors, such as stealing. Current diagnostic criteria are unable to predict which of these children would not progress. Even more crucial is the ultimate progression to antisocial personality disorder. Zocillo and Rutter, extrapolating from studies of conduct disorder, in which 40% will progress into antisocial personality disorder, implicate 10% of a baseline cohort of oppositional defiant disorder ending up with antisocial personality and other personality disorders <sup>19</sup>. Preschool children with oppositional defiant disorders are likely to exhibit additional disorders several years later. With increasing age,



comorbidity with attention deficit hyperactivity disorder, anxiety, or mood disorders begins to appear.

### Long term outcomes

Conduct disorders have been described as being either those which start in young children and become persistent for the life or those which emerge in adolescence. Early starting patterns of conduct disorders are remarkably stable. A community study from London found that 62% of 3-year-olds with conduct disorders continued these problems through to the age of 8. Almost half of all youths who initiated serious violent acts before the age of 11 continued this type of offending beyond the age of 20, twice the rate of those who began their violent symptoms at age 11 or 12<sup>23</sup>. The Isle of Wight study showed that children with conduct disorders at ages 10 and 11 fared worse at follow-up at ages 14 and 15 than children with other problems<sup>24</sup>. Farrington, in the Cambridge Study in Delinquent Development, found half of the most antisocial boys at ages 8–10 were still antisocial at age 14 and 43% were still among the most antisocial at age 18<sup>11</sup>. Loeber demonstrated that children who became violent as adolescents could be identified with almost 50% reliability as early as age 7, as a result of their aggressive and disruptive behaviour at home and at school<sup>18</sup>. Robins noted that it was rare to find an antisocial adult who had not exhibited conduct disorders as a child, even though no more than half of the children identified as having conduct disorders go on to become antisocial adults<sup>9</sup>. Studies have shown that approximately 40–50% of children with conduct disorder go on to develop antisocial personality disorder as adults. Children with conduct disorders who do not go on to develop antisocial personality disorder may develop a range of other psychiatric disturbances, including substance misuse, mania, schizophrenia, obsessive–compulsive disorder, major depressive disorder and panic disorder<sup>9</sup>. Rydelius observed that higher rates of violent death have

been shown to occur in young people diagnosed with conduct disorder<sup>7</sup>. Farrington found that, as well as developing psychiatric problems, many children with conduct disorder develop non-psychiatric antisocial behaviours, which include theft, violence to people and property, drunk driving, use of illegal drugs, carrying and using weapons, and group violence<sup>11</sup>. Conduct disorders in childhood have also been linked to failure to complete schooling, joblessness and consequent financial dependency, poor interpersonal relationships, particularly family breakup and divorce. They have also been shown to lead to abuse of the next generation of children, thus increasing the chance of them developing conduct disorders. Research has shown that there is a particularly poor prognosis attached to early onset, which indicates that early treatments in these groups are essential<sup>5</sup>.

#### **2.4 Risk factors for conduct disorders**

Identifying predictors of behavior problems during early childhood is a worthwhile goal for research due to increased levels of later psychiatric diagnosis and related problems among children with early-starting externalizing and internalizing problems. Burke et al. classified risk factors for conduct disorder into: biological risk factors (genetics, neuroanatomy, neurotransmitters and other neurochemicals, under arousal of autonomic nervous system, pre- and perinatal problems, neurotoxins), child functional factors (temperament, attachment, neuropsychological functioning, intelligence/academic performance, reading problems, impulsivity and behavioural inhibition, social cognition, socio-moral reasoning, early physical maturation), and psychosocial factors (parenting, assortative mating, child abuse, peer effects, socioeconomic factors, life stressors and coping skills)<sup>2, 3, 25</sup>. Different types of classification of the risk factors have been developed.

### **2.4.1 Child factors**

#### **Temperament**

Temperament refers to a number of characteristics that show some consistency over time. These characteristics appear soon after birth. A number of studies suggest that infants assessed as having a difficult temperament are more likely to show problems with behaviour later on. A difficult temperament may make children more likely to be the target of parental anger, which in turn may be linked to conduct disorders later on. However, Wootton demonstrated a possible strong relationship between ‘callous-unemotional’ temperament and behaviour problems despite good parenting practices <sup>26</sup>. The authors concluded that these children, with a lack of empathy, lack of guilt and emotional constrictedness, develop conduct disorders through causal factors distinct from other children with conduct disorders.

#### **Genetic**

Conduct disorder is thought to differ from attention-deficit hyperactivity disorder (ADHD) in terms of genetic influence. For children with ADHD, the magnitude of the genetic influences is thought to be 60–90%. There is, however, little evidence to suggest that genetic factors alone contribute to conduct disorder <sup>27</sup>. Studies found genetic factors accounted for half the variation of externalising behaviour. Genetic factors plus adverse environmental factors accounted for more of the variation in children with conduct disorders. It is very unlikely that a single gene or even a simple genetic model can account for complex behaviours such as conduct disorders or criminal activity <sup>7</sup>.

#### **Physical illnesses**

Rutter et al found that children with epilepsy or other disorders of cerebral function are at increased risk for conduct as well as emotional disorders and found that chronically

ill children have three times the incidence of conduct disorders than their peers; if the chronic condition was found to affect the central nervous system (CNS), the risk factor rose approximately fivefold<sup>24</sup>. It has also been shown that perinatal complications such as prolonged labour, delivery with instruments and asphyxia predict conduct disorders and delinquency, although the effects of these complications may vary with other risk factors<sup>24</sup>.

### Cognitive deficits

A number of studies have examined the cognitive correlates of conduct disorders in younger children and have found that they often have delays in language development and cognitive functioning<sup>7</sup>. Language problems, however, could also be considered not to be a child factor, as many factors associated with language development involve the parents' and the child's environment. An example of this is a study by Bee et al which found mother-child interactions and the home environment to be good predictors of language skill by the age of three years.<sup>7</sup> The Isle of Wight study of 10-11-year-olds found that a third of children with severely delayed reading levels had conduct disorder and a third of children with conduct disorder were severely behind in their reading<sup>24</sup>. Studies emphasize the importance of turning around educational underachievement in conduct-disordered children due to cognitive deficits, as this leads to a continuing feeling of low self-esteem in the child. This low self-esteem and belief that they are bad (when often the appropriate assessments are not made and so specific reading and learning disabilities may easily be missed) can cause marked misery and unhappiness and, as a result, a higher incidence of depression<sup>28</sup>. It has been suggested that academic failure is a cause rather than a consequence of antisocial behaviour. However, programmes that have improved the academic skills of these children have not achieved reductions in antisocial behaviours.

### Poor social skills

Children with conduct disorder lack the social skills to maintain friendships and may become isolated from peer groups <sup>4</sup>. Children engaging in problem behaviours are thought to have underlying distortions or deficits in their social information processing system <sup>29</sup>. Aggressive children were more likely to interpret social cues as provocative and to respond more aggressively to neutral situations. Children who are aggressive or antisocial are often rejected by their peers <sup>30</sup>. A peer group rejection is often a prelude to deviant peer group membership, which reinforces deviant behaviours. It has also been found that aggressive, antisocial children are socially inept in their interactions with adults. They are less likely to defer to adult authority, show politeness and to respond in such ways as to promote further interactions <sup>31</sup>.

### Comorbid Psychiatric Disorders

Children with conduct disorder are part of a population within which there are higher incidences of a number of disorders than in a normal population. Comorbidity has emerged as one of the keys to understanding the etiology, natural history, and treatment of psychiatric disorders among children and adolescents. The literature identifies with studies indicating the comorbid relationships between attention deficit hyperactivity disorder, conduct disorder, oppositional defiant disorder, learning difficulties, mood disorders, depressive symptoms, anxiety disorders, communication disorders, and tourettes disorder. Research has confirmed high levels of comorbidity among oppositional defiant disorder, and conduct disorder <sup>32</sup>. Of individuals with 1 of these diagnoses, 29% to 71% had at least 1 other diagnosis in epidemiological and clinical samples <sup>33</sup>. Comorbidity may exist in a large portion of young patients with bipolar disorder, confusing its clinical presentation and possibly accounting for some of the documented failure to detect bipolar disorder. Comorbid conduct disorders in bipolar

youths appear to be associated with a somewhat worse clinical course. The overall indications are that comorbid conduct disorders may identify a subtype of very early onset bipolar disorder<sup>27</sup>. In clinical samples, attention deficit hyperactivity disorder is a commonly comorbid condition with oppositional defiant disorder and conduct disorder, but it is hypothesized not to affect the course of conduct disorder without prior oppositional defiant disorder. Its onset more typically co-occurs early, before the age of 7. Anxiety and depression are less likely in childhood and tend to emerge concurrently and interactively with conduct disorder, with anxiety often preceding depression in onset. Data from large-scale, epidemiologic studies of adolescents have reported high rates of comorbidity between substance use disorders and conduct disorders<sup>34</sup>. Substance abuse tends to develop concurrently and recursively with conduct disorder<sup>18, 41, 35</sup>. It is likely that the manifestation of Anti social personality disorder, particularly the expression of violence, is aggravated by the proximal consumption of substances such as alcohol. These developmental trends may differ between the genders<sup>18</sup>.

#### **2.4.2 Environmental factors**

Social disadvantage, homelessness, low socio-economic status, poverty, overcrowding and social isolation are broader factors that predispose children to conduct disorder<sup>1</sup>. It seems that the longer the child has been living in poverty within the first four years of life, the more prevalent externalising behaviour problems become. Children from large families and those living in homes where divorce or separation has occurred are at greater risk of conduct disorders. Children with conduct disorders are more likely to come from troubled neighborhoods. Urban areas have higher rates of conduct disorders. Rutter found that conduct disorder was twice as high in inner London which is in regard to living standards higher, than on the Isle of Wight<sup>24</sup>. It becomes apparent that conduct disorders are extremely complex and pervasive. There are a number of risk

factors for conduct disorders, and these can occur in combination. Apart from the direct link between poverty, socio-economic status and child behaviour problems, other factors, which include maternal depression, exposure to violence and poor parenting practices, seem to act as mediators to additional factors.<sup>36</sup> Not all children who engage in antisocial behaviors come from disadvantaged environments. Conduct problems are also relatively common among children reared in safe and prosperous communities. For instance, among 420 adolescents in the Pittsburgh Youth Study who had committed a physical or sexual assault between the ages of 13.5 and 17.5, 38% came from middle to high-SES neighborhoods<sup>36</sup>. An important question is the degree to which associations between risk factors and conduct disorders depend on children's environmental context<sup>36</sup>. Environmental factors related to conduct problems are referred as "push factors" because they have the potential to push children towards conduct problems even if they are only at mild genetic risk. According to the social push theory proposed, genetic risk factors for conduct problems should be of greater importance in low-risk neighborhoods, and for familial and peer risk factors should be more influential in high-risk neighborhoods. Although not explicitly stated, the social push theory implies that there is a lower genetic threshold for conduct problems among children from high-risk communities<sup>37</sup>. The assumption that underlies this theory is that in high-risk neighborhoods children's genetic potentials for conduct problems are more likely to be activated due to the presence of other conduct problems risk factors more commonly found in such communities (e.g., poverty, deviant peer exposure).

### **2.4.3 Family factors**

Higher rates of conduct disorders occur in single parent families and families with frequent changes of parental figures and parental substance misuse, psychopathology, marital problems, and poor parenting skills. Parenting behaviour contributes to the

establishment of conduct disorder and many children learn, develop, or establish problem behaviours because parents lack, or inconsistently use, key parenting skills. When problems are less well established parents can more easily influence their children's behaviour. Based on prior research and the social push theory, it was hypothesized that: boys exposed to prolonged neighborhood poverty would be at greatest risk for following a chronic conduct problems trajectory, boys exposed to prolonged neighborhood poverty would have developmental histories characterized by greater exposure to familial risk factors than boys from more prosperous neighborhoods<sup>38</sup>. Parenting risk factors include neglect, abuse, separations, lack of opportunities to develop secure attachments, and harsh, lax or inconsistent discipline which are among the more important aspects of the parent-child relationship that place youngsters at risk of developing conduct disorders. Parenting behaviour and parent characteristics such as depression are among the strongest predictors of child behaviour problems<sup>39</sup>.

#### Poor parenting skills

Scott showed that five aspects of how parents bring up their children have been found repeatedly to have a long-term association with conduct disorders. These are:

- Poor supervision;
- Erratic harsh discipline;
- Parental disharmony;
- Rejection of the child;
- Low parental involvement in the child's activities<sup>28</sup>.

Webster-Stratton found parents of children with conduct disorders lack fundamental parenting skills and exhibit fewer positive behaviours<sup>40</sup>. Their discipline involves more violence and criticism, and they are more permissive, erratic and inconsistent, and more



likely to fail to monitor their child's behaviour, to reinforce inappropriate behaviours and to ignore or punish pro-social behaviours<sup>40</sup>.

Patterson's work shows that parents of antisocial children are deficient in their child-rearing skills. Parents do not tell their children how they expect them to behave and fail to monitor the behaviour of their children to ensure it is desirable. They fail to enforce rules promptly and clearly with positive and negative reinforcement<sup>41</sup>.

In boys early emotional dysregulation was predicted by rejecting and coercive parenting, where as in girls only continuity from earlier infant behaviour could be demonstrated. There was strong continuity between these early infant behaviours and later child disturbance that was partially mediated by parenting for conduct disorder symptoms (maternal hostile parenting in boys, and maternal coercive parenting in girls)<sup>42</sup>.

### Attachment

According to the attachment model, parental responsiveness is conceptualized as critical to the development of self-regulation skills. Therefore, differences in caregiver sensitivity and the resultant bond between the parent and infant are important factors in later patterns of the child's behaviour. Children who had received insufficient care giving will act more disruptively to obtain the attention of their parent<sup>43</sup>. They have less to lose in terms of love. Researchers examined infant attachment security and observed the responsiveness of caregivers, and found that the parent–infant relationship correlated with externalising behaviour at a later age. Poor interactions between mother and child can influence the child in many ways: the mother's inappropriate modeling of interactional behaviour; the child's development of unrealistic goals and lack of knowledge of social rules within relationships with adults and peers; the establishment of coercive patterns of interaction within the parent–child relationship that are carried

forward to the peer group; and the impact of a lack of warmth on the child's self-concept. Separation and disruption of primary attachments through neglect or abuse may also prevent children from developing internal working models for secure attachments <sup>44</sup>.

#### Mental health problems in parents

A longitudinal study of single- and two-parent families, found that mothers with psychological distress, major depression or alcohol problems were more than twice as likely to have children with externalising problems directed at others <sup>45</sup>. Children older than one year whose mother was postnatally depressed displayed problems such as insecure attachment, antisocial behaviour and cognitive deficits. Depressed mothers are highly critical of their children, find it difficult to set limits and are often emotionally unavailable <sup>46</sup>. Mothers who are depressed are more likely to perceive their child's behaviour as inappropriate or maladjusted and finds it difficult to rise and meet up to their demands. There exist strong links between the presence of an antisocial personality in one or both parents and similar behaviour in the child <sup>11</sup>.

#### Substance misuse and criminality in parents.

Children coming from families where parents are involved in substance misuse or criminal activities are at particular risk of developing conduct disorders <sup>47</sup>. However a number of researchers suggest that when both parents are alcoholics this increases the chances of children developing oppositional defiant disorder and conduct disorders. A number of researchers suggest that a combination of risk factors play a role in increasing behaviour problems <sup>48</sup>. Children of alcoholics tend to come from lower-class homes with other problems, including parental mental illness, criminal activity, more marital breakdowns and more welfare assistance. Parents involved in crime may provide deviant role models for children to imitate and substance misuse may

compromise parents' capacity to care for their children correctly<sup>31</sup>. Female offenders are more likely to cohabit with or marry male offenders than male offenders are to select female offenders. Mate selection appears to be more based on an evaluation of the similarities of behaviors, and to a lesser extent about attitudes regarding social consequences for antisocial behavior, than on more inscrutable personality trait<sup>25</sup>. However, Krueger and colleague also provide a very useful review of the bias in estimates of genetic and of shared and non shared environmental factors from twin and adoption studies that fail to account for assortative mating<sup>49</sup>.

### Teenage parents

Marshall and Watt highlight research showing that children of teenage mothers had more conduct disorders at age 8, 10, and 12 years compared with older mothers. However, as the research goes on to point out, the effects of teenage pregnancy may be due to the fact that children with teenage mothers tend to live on lower incomes, have absent biological fathers and suffer from poor child-rearing practices<sup>50</sup>. Reviews of literature found maternal age, socioeconomic status, number of siblings at the time of the child's birth and punitive parenting practices were all significant in the relationship between maternal age and conduct disorders<sup>7</sup>.

### Marital discord

Marital problems in the parents are an important risk factor where marital conflict leading to divorce can have detrimental effects on children<sup>50</sup>. Marital disruption is often associated with a change in economic circumstances and adjustments to altered living conditions; parents may be distressed and this may affect their parenting practices. Also, separated parents may not agree on rules and how they should be implemented. This may lead to a lack of communication about discipline and in turn to inconsistent disciplinary practices. Some research suggests that when there is persistent

conflict in families in which the parents do not separate, there are high levels of child behaviour problems and poor self-esteem in children. In a recent study, negative marital conflict management skills on the part of parents (defined as the inability to collaborate and problem solve, to communicate positively about problems and to regulate negative affect) were a key variable in contributing to conduct disorder <sup>18</sup>.

### Marital violence

Marshall and Watt also provide evidence that marital conflict involving physical aggression is more upsetting to children than other forms of marital conflict. Children exposed to marital violence may imitate this in their relationships with others and display violent behaviour towards family, peers and teachers <sup>50</sup>. When children are exposed to negative emotions, their safety and security may be threatened and therefore they may express anger towards their parents.

### Abusive parents

Abusive and injurious parenting practices are regarded as an influential risk factors for conduct disorders <sup>18</sup>. Physically maltreated children were found to be commonly aggressive, non-compliant, use acting-out behaviour and to perform badly on cognitive tasks. Sexually abused children had a variety of problems, including aggression and withdrawal, and were not liked by their peers. Child maltreatment is a highly specific risk factor as far as risk factors for conduct disorders are considered <sup>25</sup>.

### Single parents

Where parents are living alone, they may find the constant pressure of looking after a child, along with domestic and work-related issues, difficult to manage, which can result in inconsistent discipline due to emotional exhaustion and lack of social support networks to help with the children. Parents of children with conduct disorder report

major stressors two to four times more often than parents of children without conduct disorder<sup>7</sup>.

### **2.5 Protective factors for conduct disorders**

Some children appear to have a number of risk factors associated with an increased risk of developing behavioral problems and yet do not go on to have conduct disorders. Rutter highlighted the importance of vulnerability and protective factors that modulate responses to stress<sup>24</sup>. High IQ, easy temperament, the ability to relate well to others, good work habits at school, areas of competence outside school and a good relationship with at least one parent or other important adult, offer protection against antisocial behavior and delinquency in the presence of risk<sup>8</sup>. Prosocial peers and a school atmosphere that fosters success, responsibility, and self-discipline also emerge as protective factors. The selection of non-delinquent peers and the selection of a "good" mate (as demonstrated by stable interpersonal relationships, a good work history, and capacity for good parenting) have been shown to protect against continuing criminal activity<sup>8</sup>.

It would enhance clinical practice to know if at least some protective factors can be induced or augmented, and whether such augmentation would lead to a positive outcome for those at risk for conduct disorders, as well as those who are already symptomatic<sup>8</sup>.

### **2.6 Treatment**

A number of interventions have been identified which are useful in reducing the prevalence and incidence of conduct disorder. Interventions consist of prevention and treatment, although these should not be considered as separate entities. Prevention addresses the onset of the disorder, although the child has not manifested the disorder,

and treatment addresses reduction of the severity of the disorder. In mainstream psychology, prevention and treatment for conduct disorder primarily focuses on skill development, not only for the child but for others involved with the child, including the family and the school environment <sup>7</sup>. The following paragraphs consider interventions, that assist in preventing and treating conduct disorder <sup>38</sup>.

### **2.6.1 Child Training**

Child training involves the teaching of new skills to facilitate the child's growth, development and adaptive functioning. Research indicates that as a means of preventing child conduct disorder there is a need for skill development in the area of child competence. Competence refers to the ability for the child to negotiate the course of development including effective interactions with others, successful completion of developmental tasks and contacts with the environment, and use of approaches that increase adaptive functioning <sup>4</sup>. It has been found that facilitating the development of competence in children is useful as a preventative measure for children prior to manifestation of the disorder rather than as a treatment <sup>40</sup>.

Additionally, treatment interventions have been developed to focus on altering the child's cognitive processes. This includes teaching the child problem solving skills, self control facilitated by self statements and developing prosocial rather than antisocial behaviours. Prosocial skills are developed through the teaching of appropriate play skills, development of friendships and conversational skills. The social development of children provides them with the necessary skills to interact positively in their environment. A child's development of cognitive skills provides a sound basis from which to proceed. However, cognitive development should not be considered in

isolation, but as part of a system, which highlights the need to include the family in the training process<sup>51</sup>.

### **2.6.2 School and Community Education**

A child's environment plays an active role in the treatment of conduct disorder and as a preventative measure. A number of interventions have been developed for schools and the community in relation to conduct disorder. The various programs outlined have a primary focus involving the skill development for the child in the areas of problem solving, anger management, social skills, and communication skills<sup>52</sup>.

There are various preventative programs devised which focus on specific cognitive skill development of a child. A number of programs developed focus on encouraging the child's development in decision making and cognitive process. In addition school based programs have involved teaching the child interpersonal problem solving skills, strategies for increasing physiological awareness, and learning to use self talk and self control during problem situations.

In addition to prevention programs, a number of treatment interventions have been developed for children where conduct disorder has manifested. The treatment programs focus on further skill development, including anger management and rewarding appropriate classroom behaviour, skill development of the child including the understanding of their feelings, problem solving, how to be friendly, how to talk to friends, and how to succeed in school. As Webster and colleagues describe, one school based program has been designed to prevent further adjustment problems, by rewarding appropriate classroom behaviour, punctuality, and a reduction in the amount of

disciplinary action. In addition, the program provided parents and teachers with the opportunity to focus on specific problems of a child and for these to be addressed <sup>40</sup>.

### **2.6.3 Family Intervention**

A child's family system, has an important role in the prevention and treatment of conduct disorder. The child needs to be considered as a component of a system, rather than as a single entity. Research supports the notion that parents of conduct disordered children have underlying deficits in certain fundamental parenting skills. The development of effective parenting skills has been considered as the primary mechanism for change in child conduct disorder, through the reduction of the severity, duration and manifestation of the disorder<sup>51</sup>.

A number of parent training programs have been developed to increase parenting skills. Research indicates that the parent training programs have been positive, indicating significant changes in parents' and children's behaviour and parental perception of child adjustment. Research suggests that parents who have participated in parent training programs are successful in reducing their child's level of aggression by 20 - 60 % <sup>7</sup>.

Various training programs have been developed, which focus on increasing parents' skills in managing their child's behaviour and facilitating social skills development. The skills focused on, include parents learning to assist in administration of appropriate reinforcement and disciplinary techniques, effective communication with the child and problem solving and negotiation strategies. A further component of parental training incorporates behavioural management. This involves providing the family with simple and effective strategies including behavioural contracting, contingency management,



and the ability to facilitate generalisation and maintenance of their new skills, thus encouraging parents' positive interaction with their child<sup>7</sup>.

However, although these interventions assist parents in developing effective parenting skills, a number of families require additional support. There are various characteristics within the family system that can have an impact on parents' ability to cope. This includes depression, life stress and marital distress. Research suggests that family characteristics are associated with fewer treatment gains in parent training programs. As indicated by several programs have expanded upon the standard parent training treatment. These programs have incorporated parents' cognitive, psychological, and marital or social adjustment. Through addressing the parent's own issues it assists their ability to manage and interact positively with the child<sup>40</sup>.

## **2.7 Issues in assessment of risk factors in conduct disorder**

Studies done to assess risk factors associated with conduct disorders have addressed various issues. Different studies have used different populations and there have been variations in the definition of conduct disorders across studies. The factors studied have addressed varying domains such as child, environmental and family related aspects. Though methodological differences are there between studies, they highlight the need to assess risk factors in conduct disorder, considering the impact they have on the individual, family and society and their implication in treatment aspects of the disorder.

### **3. AIMS AND OBJECTIVES**

#### **3.1 Aim**

To study the family factors associated with conduct disorder in a clinic-based population.

#### **3.2 Objectives**

To study the family factors in children and adolescents diagnosed with conduct disorder, in comparison with a group of children without conduct disorder, but with other psychiatric disorders.

#### **3.3 Null Hypothesis**

The following null hypothesis was postulated:

There is no significant difference between children and adolescents with conduct disorder and those without conduct disorder, with respect to family factors.

## **4. METHODOLOGY**

### **4.1 Setting**

The participants were recruited from the outpatient department of the Child and Adolescent Psychiatry Unit, Department of Psychiatry, Christian Medical College. This is a tertiary care centre, providing services to children and adolescents with various mental health needs, from different parts of the country and neighboring regions. The Child and Adolescent Psychiatry unit of the Department has two divisions, one for children with emotional as well as behavioral disorders and the other one for children with developmental disorders. The multidisciplinary treating team makes the clinical diagnosis based on the ICD-10 clinical diagnostic system.

### **4.2 Design**

A case-control study design has been used in the study

### **4.3 Participant Recruitment**

The children and adolescents attending the Child and Adolescent Psychiatry Unit, who satisfied the inclusion criteria, were recruited from November 2009 to October 2010. A total of 164 participants were included in the study.

#### **4.3.1 Inclusion criteria**

##### *Cases*

1. Children and adolescents between 5 - 18yrs.
2. Diagnosed to have conduct disorder based on the ICD-10 clinical diagnostic criteria at initial presentation.
3. Conduct disorder with or without comorbid psychiatric disorders
4. Conversant in English, Tamil or Hindi.

## **Controls**

1. Children and adolescents between 5 - 18yrs.
2. Without conduct disorder but diagnosed with any other psychiatric disorder using the ICD-10 clinical criteria.
3. Conversant in English, Tamil or Hindi.

Written informed consent was obtained from the primary caregivers for both cases and controls. Verbal assent was taken from the participants when feasible.

### **4.3.2 Exclusion Criteria (for both groups)**

1. Severe special sensory impairment, organic disturbance or below moderate level of intellectual functioning assessed clinically.
2. Lack of reliable informant (informant not living with patient within the past 3 months).

### **4.4 Sampling Technique and Sample Size**

Cases were selected by purposive sampling. Controls were selected by random allocation.

The sample size required to estimate a difference between groups was calculated considering the following: Confidence interval- 95%, power -80%, Odds ratio of 3, cases: control as 1:1 and calculated exposure of family dysfunction as 75%.

The minimum sample size required was 58 for the cases and controls with a total sample size of 116.

### **4.5 Data collection**

The following instruments were employed to collect data

1. ICD 10 clinical and diagnostic criteria
2. Semistructured proforma designed for the study ( Appendix 10.1)

3. Modified Kuppuswami scale (Appendix 10.2)
4. Family APGAR scale( Appendix 10.3)
5. Parental Practise scale ( Appendix 10.4)

### **1. ICD-10 Clinical and diagnostic criteria**

This was used to diagnose psychiatric morbidity in participants and their parents

### **2. Semistructured Proforma**

This data collection proforma was designed for the study. It included the sociodemographic details of the participants and their parents, also including information of type of family and whether parents were living together or not.

### **3. Modified Kuppuswami scale <sup>53</sup>**

The Modified Kuppuswamy scale is a widely used measure to assess the socio-economic status of an individual based on three variables namely education, occupation and income. The education score ranges from 1 to 7, occupation score from 1 to 10 and family income score from 1 to 12. The socio-economic class is based on the total score.

### **4. Family APGAR Scale**

This scale assesses the individual's satisfaction in the family functioning. The functioning is assessed in five domains of adaptability, partnership, growth, affection and responsibility. Scoring is from a three-point scale ranging from 0 to 2. Individual items are summed up to get the total score with higher scores suggesting a higher level of satisfaction and a lower score suggesting vice versa. The scale was initially devised by Smilkstein <sup>54</sup> but the scoring pattern was later revised by Mengel <sup>55</sup> and later Longsca <sup>56</sup> who changed the 3 point scale range from 1 to 3 and converted the score to categories, where a score < 9 indicates significant dysfunction while a score  $\geq 9$  indicates no family dysfunction. This scale has a Cronbach's alpha value of 0.80-0.85 and an item total correlation of 0.50-0.65.

## **5. Parent practices scale <sup>57</sup>**

This scale consists of 34 items. Most items have a minimum score of 0 and a maximum of 6. The total score for the measure can range between 3 and 193. Nineteen of the items are scored positively, that is, a higher score indicates more positive parent behavior. Fifteen of the items are scored negatively, in which a higher score indicates less positive parent behaviors. A total score is calculated by adding the scores of the positive items, subtracting the scores of the negative items, and then adding a correction of six times the number of negative items, or 90. A higher total score is indicative of better parenting behaviour.

### **4.6 Procedure**

Consecutive children and adolescents attending the child and adolescent psychiatry outpatient clinic for initial evaluation, were evaluated by the team of Psychiatrists. Those fulfilling the ICD-10 criteria for conduct disorder with or without comorbid psychiatric disorders were referred to a co investigator who screened them. Those fulfilling the inclusion and exclusion criteria were selected as cases. Controls were patients with any psychiatric disorder other than conduct disorder. They were selected from the same outpatient clinic by random allocation using a computer generated random number list in a ratio of 1:7 which was decided based on the estimated prevalence of the cases. The random number list for the control group was with a co-investigator, who allocated controls accordingly. Cases and controls fulfilling the specified inclusion and exclusion criteria were then referred to the primary investigator. The primary investigator, who was blind to the primary diagnosis, evaluated the participants for the sociodemographic, parent and family details. Specific parenting factors assessed was the parent psychopathology, which was assessed by

clinical interview, and the parenting, which was rated on the parent practice scale. The family functioning was assessed with the family APGAR questionnaire. The diagnostic details for the cases and controls were collected only at the end of the study and the data entered by the co investigators prior to the analysis, in order to reduce bias.

#### **4.7 Data Analysis**

Descriptive statistics (mean, standard deviation and percentages) were computed for the total sample. The acceptability of the study data for parametric analysis was done. The cases and controls were compared with regard to participant, parent and family variables. An independent samples t test was performed on continuous independent variables as the data showed normality. Bivariate analysis of Pearson's Chi-square test was done to find significant differences in outcome (conduct disorder versus non conduct disorder) between the categorical independent variables. Unadjusted odds ratios for variables significant in the bivariate analyses were done. As there were a significantly higher number of males among the cases, a stratum specific analysis for the risk factors was carried out. Variables that were significant at the 5% level were considered for a multivariate logistic regression, to find risk factors for conduct disorder. Missing data was not included for the analysis.

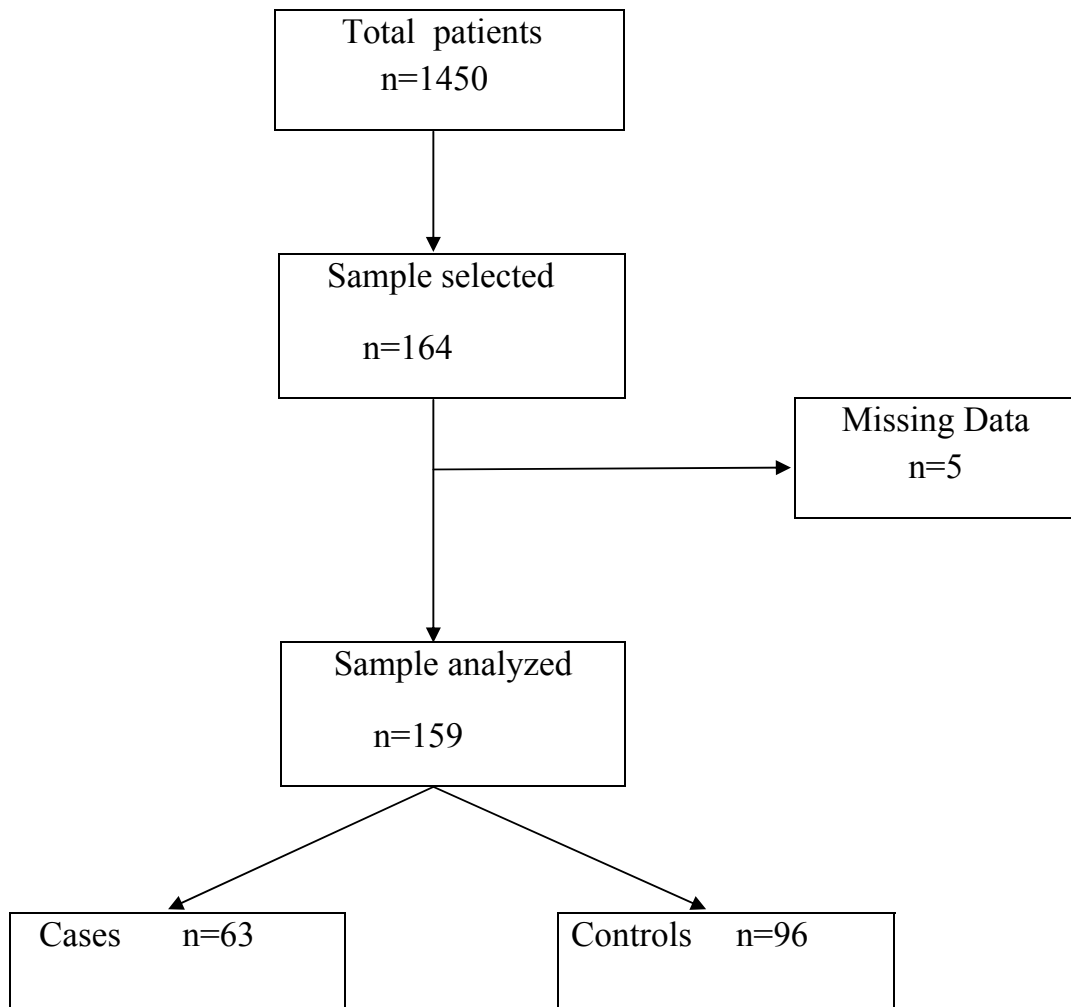
Data was analyzed using the Statistical Package for Social Sciences (SPSS version15)

#### **4.8 Ethical Issues**

1. Written informed consent was obtained from the primary caregivers for both cases and controls. Verbal assent was taken from the participants when feasible.
2. The study was conducted only after obtaining ethical clearance from the Institutional Review Board of the Christian Medical College, Vellore.

## 5. RESULTS

### 5.1 Flow chart of participants in the study





## **5.2 Acceptability of the data for the parametric analysis**

**Table 1: Acceptability of the data for the parametric analysis**

	<b>Age</b>	<b>Parent Positive score</b>	<b>Parent negative score</b>	<b>Parent total Score</b>
n	164	164	164	164
Mean	11.62	51.30	35.80	104.51
Median	12.00	51.00	36.00	106.00
Std. Deviation	3.538	14.261	14.194	20.018
Std. Error	0.276	1.114	1.108	1.563

The acceptability of the study data for a parametric analysis was initially assessed and found to be favourable as depicted in Table 1.

## **5.3 Sample Description**

164 children and adolescents were enrolled for the study between January 2010 and October 2010. As diagnostic data was missing for 5 participants, only 159 participants were considered for further analysis.

**Table 2: The participant characteristics for the total sample**

Variable	n = 159	%
Mean Age (SD)	11.61 yrs	3.5
Gender		
Male	118	74.2
Female	41	25.8
Educational Status		
Illiterate	1	0.6
Up to 5 <sup>th</sup> std	68	42.8
6 <sup>th</sup> -10 <sup>th</sup> std	77	48.4
11 <sup>th</sup> -12 <sup>th</sup> std	13	8.2
Residence		
Urban	90	56.6
Rural	69	43.4
Religion		
Hindu	124	78
Muslim	21	13.2
Christian	14	8.8
Region		
Tamil Nadu	71	44.7
West Bengal	55	34.6
Other states	24	15.1
Bangladesh/ other nations	9	5.7
Mother Tongue		
Tamil	64	40.3
Bengali	67	42.1
Other languages	28	17.6
SES		
Upper	24	15.1
Upper middle	75	47.2
Lower middle	24	15.1
Upper lower	35	22.0
Lower	1	0.6
Psychiatric Diagnosis (n=206) <sup>a</sup>		
Conduct Disorder	63	30.6
Mild Mental Retardation	45	21.8
ADHD	21	10.2
Seizure Disorder	9	4.4
OCD/Anxiety	11	5.3
PDD	6	2.9
Psychosis	3	1.5
Depression	8	4.0
Dissociative/somatoform	9	4.4
Mania	4	1.9
Adjustment Disorders	7	3.4
Others	20	9.7

<sup>a</sup> = Overlapping diagnosis accounting for the larger number than sample.

Table 2 shows the participant characteristics of the total sample. The sample consisted of children and adolescents between the ages of 5 to 18 years with a mean age of 11.61 years (SD 3.5). Approximately three fourth of the participants were male (74.2%). The majority had completed at least a primary or high school education (91.2%). Participants were predominantly Hindus and hailed from an upper middle socioeconomic background. There was a slightly larger representation from urban areas (56.6%). The majority was from Tamil Nadu and West Bengal (79.3 %), therefore spoke Tamil and Bengali respectively. All the participants included whose mother tongue was Bengali, were also conversant in Hindi.

There were 63 participants with conduct disorder which accounted for 30.6% of the total disorders seen. Among children with conduct disorder, 33.3% had conduct disorder in the family context, 15.9% had socialized conduct disorder and oppositional defiant disorder was seen in 50.85%. The majority (40%) of other diagnosis present in the total sample included mild mental retardation and ADHD. 'Other' disorders included nonspecific behaviour problems and enuresis.

**Table 3: The parent characteristics for the total sample**

Variable	n =159	%
Education		
- Father		
Illiterate	7	4.4
Upto 5 <sup>th</sup> std	10	6.3
6 <sup>th</sup> -10 <sup>th</sup> std	63	39.6
11 <sup>th</sup> -12 <sup>th</sup> std	24	15.1
Graduate	45	28.3
Postgraduate	5	10
Mother		
Illiterate	10	6.3
Upto 5 <sup>th</sup> std	11	6.9
6 <sup>th</sup> -10 <sup>th</sup> std	75	47.2
11 <sup>th</sup> -12 <sup>th</sup> std	21	13.2
Graduate	33	20.8
Postgraduate	9	5.7
Psychopathology		
Father		
Nil	128	80.5
Alcohol abuse	16	10.1
Anxiety disorder	4	2.5
Depressive disorder	5	3.1
Mania	1	6
Schizophrenia	3	1.9
Seizure disorder	2	1.3
Mother	151	
Nil	0	95
Alcohol abuse	0	0
Anxiety disorder	3	0
Depressive disorder	12	1.9
Schizophrenia	2	0.6
Mania	0	1.3
Seizure disorder		1.3
Parents together		
Yes	149	93.7
No	10	6.3
Parenting scores: Mean(SD)		
Parenting positive score	51.3	14.34
Parenting negative score	35.58	14.175
Parenting total score	104.67	20.14

Table 3 shows the parent characteristics of the total sample. 50.3% of the fathers and 60.4% of mothers had an education level up to 10<sup>th</sup> standard. 60.4% of mothers had an

education level up to 10<sup>th</sup> stand compared to approximately 50% of father's. Majority of the sample had no psychopathology. Among fathers with psychopathology, majority had alcohol abuse. The mean of the parenting scores across the sample was 51.3 (14.34) for positive parenting, 35.58 (14.175) for negative parenting, and 104.67 (20.14) for total parenting. Most of the parents in the sample were living together (93.7%). Among the 10 families with single parent families, six had one parent who had expired, while four had parents who had separated. One child had divorced parents who were however staying together.

**Table 4: The Family Characteristics for the total sample**

Variable	n=159	%
Type		
Nuclear	96	60.4
Extended	23	14.5
Joint	40	25.1
APGAR Score		
No dysfunction	139	87.4
With dysfunction	20	12.6

Most of the participants were from a nuclear family (60.4%). The family functioning rated on the APGAR showed that majority showed no family dysfunction (Table 4).

#### **5.4 Comparative Data**

There were 63 conduct disorders among the participants and 96 controls. The two groups were compared for the following variables:

- a. Participant characteristics
- b. Parent characteristics
- c. Family characteristics.

**Table 5: Comparison of participant characteristics between the two groups**

Variable	Cases n=63	Controls n=96	Statistics $\chi^2$ (df), t	p value
Age [mean(SD)]	11.56(3.67)	11.65(3.52)	- 0.155	0.877
Gender				
Male	53(84.1%)	65(67.7%)	-5.35 (1)	0.02*
Female	10(15.9 %)	31(32.3%)		
Educational status				
Illiterate	1 (1.6%)	0 (0%)	4.0 (3)	0.26
Upto 5 <sup>th</sup> std	23 (36.5%)	45 (46.9%)		
6 <sup>th</sup> -10 <sup>th</sup> std	35 ( 55.6%)	42 (43.8%)		
11 <sup>th</sup> -12 <sup>th</sup> std	4 (6.3%)	9 (9.4%)		
Residence				
Urban	35 (55.6%)	55 (57.3%)	0.47 (1)	0.82
Rural	28 (44.4%)	41(42.7%)		
Religion				
Hindu	53 (84.1%)	71 (74.0%)	2.29 (2)	0.31
Muslim	6 (9.5%)	15 (15.6%)		
Christian	4 (6.3%)	10 (10.4%)		
Location				
Tamilnadu	27 (42.9%)	44 (45.8%)	1.53 (3)	0.67
West Bengal	23 (36.5%)	32 (33.3%)		
Other states	8 (12.7%)	16 (16.7%)		
Bangladesh/other nations	5 (7.9 %)	4 (4.2%)		
Mother Tongue languages				
Tamil	24 (38.1%)	40 (41.7%)	0.254 (2)	0.88
Bengali	28 (44.4%)	39 (40.6%)		
Other	11 (17.5%)	17 (17.7%)		
Comorbidity				
Yes	31 (49.2%)	28 (29.2%)	6.54 (1)	0.011*
No	32(50.8%)	68 (70.8%)		
No : of comorbidities				
Nil	29 (46%)	67 (70.5%)	14.34 (3)	0.002*
One	21 (33.3%)	24 (25.3%)		
Two	12 (19%)	4 (4.2%)		
Multiple	1 (1.6%)	0 (0%)		

\* p value < 0.05

The difference in the mean age between the groups was -0.09 (95% CI -1.24, 1.05). There is a significant difference between the two groups with regard to gender, with cases showing a higher proportion of males compared to the control group. Both groups were otherwise comparable with regard to socio- demographic data. The conduct and the non conduct groups also showed a statistically significant difference in the presence and number of comorbidities. The conduct group had a higher prevalence of comorbidity and more number of comorbidities (Table 5).

**Table 6: Parent characteristics between the two groups**

**Table 6a: Sociodemographic and parental psychopathology**

Variables	Cases n=63	Controls n=96	X <sup>2</sup> (d.f)	p value
Parent Education				
Father ≤ 10 <sup>th</sup> > 10 <sup>th</sup>	28 (44.4%) 35 (55.6%)	52 (54.2%) 44 (45.8%)	1.438 (1)	0.23
Mother ≤ 10 <sup>th</sup> > 10 <sup>th</sup>	36 (57.1%) 27 (42.9%)	60 (62.5%) 36 (37.5%)	0.456 (1)	0.5
Parents living together				
Yes No	61 (96.8%) 2 (3.2%)	88 (91.7%) 8 (8.3%)	1.718 (1)	0.32
Psychopathology				
Father YES NO	13 (20.6%) 50 (79.4%)	18 (18.8%) 78 (81.2%)	0.086(1)	0.839
Mother YES NO	1 (1.6%) 62 (98.4%)	7 (7.3%) 89 (92.7%)	2.590 (1)	0.148

\* p value < 0.05

**Table 6b: Parenting scores**

Variables	Cases Mean (SD)	Controls Mean (SD)	Mean difference (95% CI)	p value
Parenting scores				
Positive score	50.76(14.62)	51.59(14.29)	-0.83 ( -3.5 – 5.4)	0.72
Negative score	38.98(12.00)	33.34(15.08)	5.64 (1.18-10.1)	0.01*
Total score	100.16(20.17)	107.63(19.66)	-7.47 (-13.8- -1.04)	0.02*

\* p value < 0.05

There was a significant difference between cases and controls with regard to parenting style with the conduct group having a higher negative parenting score and a lower total parenting score (Table 6b). There was no association between parent psychopathology, parent education level or parents living together and conduct disorder as noted in Table 6a.

**Table 7: The family characteristics between the groups**

Variable	Cases	Controls	X <sup>2</sup> (d.f)	p value
Family functioning APGAR category				
Score <9	9 (14.3%)	11 (11.5%)	0.277 (1)	0.63
Score ≥9	54 (85.7%)	85 (88.5%)		
Family				
Joint	20(31.7%)	20(20.8%)	2.42 (1)	0.29
Nuclear	35(55.6%)	61(63.5%)		
Extended	8(12.7%)	15(55.2%)		

There was no difference between the groups with regard to family functioning and type of family (Table 7).



## **5.5 Unadjusted Odds ratio**

**Table 8: Unadjusted Odds ratio for variables significant in the bivariate analysis**

<b>Variables</b>	<b>OR</b>	<b>95% Confidence</b>	<b>P Value</b>
Gender			
Male	2.53	(1.14, 5.62)	0.021*
Female	1.00		
Presence of comorbidities			
Yes	2.35	(1.21,4.56)	0.01*
No	1.00		
No. of comorbidities			
> 1	5.92	(1.83 ,19.11)	0.001*
≤ 1	1.00		
Parenting scores			
Parenting negative score	1.03	(1.01, 1.06)	0.016*
Parenting total score	0.98	(0.97 – 0.99)	0.024*

\*p value <0.05

Males had 2.5 (1.1 – 3.6) times significantly higher risk for getting conduct disorder as compared to females (p<.02). The presence of comorbidity increased the risk of conduct disorder by nearly two times more than those without co morbidities. Two or more co morbidities increased the risk by nearly six times. Higher negative parenting score increased the risk of conduct disorder by 0.03 while a higher total parenting score decreased the risk by 0.02 (Table 8).

## 5.6 Stratum specific analysis

**Table 9: Stratum specific analysis (gender) of risk factors and conduct disorder**

**Table 9a: Presence of comorbidities**

Variable	Male		Female		Adjusted OR (95% CI)	P Value
	Case	Control	Case	Control		
Co morbidity						0.009*
Yes	26(49.1%)	17 (26.2%)	5(50%)	11(35.5%)	2.48	
No	27(50.9%)	48(73.8%)	5(50%)	20(64.5%)	(1.26,4.90)	
OR	2.72		1.82			
95% CI	(1.26,5.88)		(0.43,7.69)			
P Value	0.010		0.413			

**Table 9b: Number of comorbidities**

Variable	Male		Female		Adjusted OR (95% CI)	P Value
	Case	Control	Case	Control		
>1	11(20.8%)	2 (3.1%)	2(20%)	2(6.5%)	6.22	0.003*
≤1	42(79.2%)	62(96.9)	8(80%)	29(93.5)	(1.87,20.66)	
OR	8.12		3.63			
95% CI	(1.712, 38.51)		(0.44, 29.91)			
P Value	0.003		0.209			

**Table 9c: Parenting scores**

Variable	Males Mean (SE)	Females Mean(SE)	Adjusted OR	95% CI	P Value
Parenting Negative Score	35.54 (1.24)	36.55 (2.44)	1.03	(1.01, 1.06)	0.010*
Parenting Positive Score	104.64 (1.59)	104.14 (4.02)	0.98	(0.96, 0.99)	0.016*

\*p value < 0.05

As there was significant difference between the groups with regard to gender, a multivariate analysis of the significant bivariate factors while controlling for the confounding effect of gender was carried out.

The risk for negative parenting scores and total parenting scores remained the same even after controlling for gender. The risk for the presence of comorbidity and number of comorbidities showed a slight increase (OR of 2.48 and 6.22 respectively). This is shown in Tables 9a, b and c.

### **5.7 Multivariate logistic regression**

**Table 10: Multivariate logistic regression of all significant variables**

Risk Factors	OR	95% CI	P Value
Gender			
Male	3.17	(1.32,3.17)	0.010*
Female	1.00		
Comorbidity			
Yes	1.86	(0.85,4.07)	0.123
No	1.00		
No of Comorbidity			
>1	4.07	(4.07,15.63)	0.042*
≤ 1	1.00		
Parenting Negative Score	1.02	(0.98,1.05)	0.26
Parenting Total Score	0.99	(0.96,1.01)	0.16

\*p value < 0.05 Nagelkerke R<sup>2</sup> = 0.15

On doing a multivariate logistic regression of all significant variables, being of male gender had a three times risk of conduct disorder, while having a comorbid disorder increased the risk by nearly 2 times. The presence of more than one comorbidity increased the risk of conduct disorder by 4 times. Parenting as a risk factor for conduct disorder failed to show significance in the multivariate analysis. The study variables considered in the multivariate analysis were able to explain 15% of variability in outcome, that too mostly by number of comorbidities (Table 10).

## 6. DISCUSSION

This study was carried out on children and adolescents attending the psychiatry outpatient clinic of a tertiary care center. A case control study design was used. Cases were selected based on the diagnosis of conduct disorder. Controls were those participants who did not have conduct disorder.

### *Participant Characteristics*

Studies done on risk factors for conduct disorders have been carried out on varied groups. Some have focused only on specific groups like males<sup>58, 59</sup>, adolescents<sup>48</sup> or juvenile offenders<sup>11</sup>, while others have focused on specific populations like community<sup>3, 60</sup>, outpatient psychiatric clinics and inpatient settings<sup>61</sup>. This study included children and adolescents between 5 and 18 years, presenting to a psychiatric outpatient clinic of a tertiary hospital, and was inclusive of both males and females. The mean age of the participants in the study was 11.62 years and there was a significantly higher proportion of males compared to females. This may be reflective of the higher prevalence of male gender in childhood psychopathology<sup>2, 3, 5</sup> or the referral bias of male children being brought more often for care than females<sup>62</sup>. The socio demographic profile of the sample was otherwise reflective of the population presenting to this center, with 82% coming from Tamil Nadu and West Bengal.

63 participants had conduct disorder and were selected as cases. 96 who did not have conduct disorder were taken as controls. Other diagnoses seen across both groups of participants were predominantly mild mental retardation, attention deficit hyperactivity disorder, nonspecific behaviour disorders and anxiety disorders, which represented 47% of the total number of diagnoses seen. Prevalence studies done in child psychiatry tertiary care centers have found that common psychiatric diagnoses encountered were mood disorders, anxiety disorders, conduct disorder, conversion disorders and mental

retardation<sup>63,64</sup>. 38% of participants in our study had one or more number of comorbid diagnoses which is slightly lower than that found in the Ontario Health study where comorbid diagnoses were seen in 46%<sup>18, 65, 66</sup>. Other studies which have looked at risk factors for conduct disorder have used heterogeneous cases and control groups. Some others have been more specific, incorporating specific conduct disorder subtypes or controls who were normal or with specific disorders<sup>67</sup>. The study population was recruited from an outpatient clinic in a tertiary hospital. Therefore controls selected from the same population were a heterogeneous group with disorders other than conduct disorder.

### ***Parent and family characteristics***

The parent factors studied included parent psychopathology, parental separation and parenting practices. The prevalence of parental psychopathology assessed in this study was 10.3%. Studies done elsewhere show the prevalence of parental psychopathology in children with psychiatric disorders as high, especially in children with conduct disorder<sup>68</sup>. Alcohol dependence in the father was the most common parental psychopathology seen in this study. Similar findings have been reported in fathers of conduct disordered children in other studies<sup>68</sup>. Majority (93.7%) of the participants came from a home where parents were living together. This is in contrast to literature from the West, where single parent (mother) families are commonly associated with children with conduct disorder<sup>69</sup>. This could be reflective of the parental dyad in India or the referral bias where children are more likely to present for treatment when both parents are together. The family functioning assessed in this study found that 87.4% had good family functioning which is in contrast to a study by Green et al in which prevalence of dysfunction is higher in children and adolescents with psychiatric disorders<sup>67</sup>.

### ***Factors associated with conduct disorder***

Participants with conduct disorder were compared to those without conduct disorder, in order to assess family factors associated with the disorder.

It was seen that there was a significant difference between the groups with regard to gender, with 84.1% males in the conduct group versus 67.7% in the control group. The higher prevalence of males in conduct disorder is similar to findings in other studies<sup>18</sup>. This could also be related to the fact that males were more likely to have overt conduct symptoms compared to females, leading to them being more likely to present for evaluation. The risk of having a conduct disorder for a male was nearly 2.5 times more than for a female. Similar rates have been noted in studies from around the world<sup>18</sup>. Other variables found to be significantly associated with conduct disorder in this study, were the presence of co morbidities, number of co morbidities, a higher negative parenting score and a lower total parenting score. When a stratum specific (gender) analysis was done, these factors retained their significance.

It was seen that the risk of conduct disorder was 2.5 times more when comorbid disorders were present than compared to those without comorbidity. The risk increased further to 6 times when the number of comorbidities was more than one. The presence of comorbid disorders in conduct disorder is well documented. In a study on conduct disorder done in Ontario, the prevalence of comorbidity was 46% with most common conditions being attention deficit hyperactivity disorder, learning disability and depression<sup>18</sup>. In another study it was seen that more number of comorbidities had a significant association with conduct disorder<sup>67</sup>.

In our study, there was no significant difference in the family functioning or parental psychopathology between the groups. Though there was a slightly higher prevalence of family dysfunction of 14.3% in cases, versus 11.5% in the control group, this was not

significant. This is in contrast to other studies carried out in conduct disorder, where there have been significant differences in family dysfunction between those with conduct disorder compared to those without conduct disorder. A Finnish study reported that children with family dysfunction had an increased risk for developing both violent conduct disorder (OR 7.8) and non-violent conduct disorder (OR 7.0) (2). Other studies which have also looked at family dysfunction, found a significant association between dysfunctional families and presence of conduct disorder<sup>67, 70</sup>.

Parenting scores between the groups in our study showed significant differences, with the conduct disordered group showing a higher negative parenting score and lower total parenting score. The risk of conduct disorder with higher negative parenting score was 0.03 times more than with a lower negative parenting however a higher total parenting score was protective by 0.02 times. This however failed to show significance in the multivariate analysis. Studies in conduct disorder have found parenting to be a significant risk factor with negative-ineffective discipline predicting conduct disorder<sup>71</sup>. However, a bidirectional relationship between parenting and conduct disorder has been documented in other studies<sup>68</sup>.

It is well known that there exists a cumulative risk for risk factors in conduct disorder<sup>72</sup>. In this study, a multivariate analysis of the risk factors found number of comorbidities and male gender to be statistically significant while it failed to show a relationship between family factors and conduct disorder.

Conduct disorder has far reaching consequences on the individual, family and society. Studies on risk factors in conduct disorder will help in early identification of children at risk and planning appropriate interventions. Future research should focus on specific subtypes of conduct disorder and assess a wider range of family risk factors.



## 7. LIMITATIONS

The strength of the study lies in the adequate sample size and case-control design.

Limitations of the study

- The sample was drawn from children and adolescents attending the psychiatry outpatient clinic of a large tertiary hospital. The findings therefore cannot be generalized to the community.
- There was a significantly higher proportion of males in the cases. This could have been overcome by matching controls for gender. However, it should also be noted that this male preponderance could be partly the reflection of disruptive disorders in general being more prevalent among boys as well as boys being more readily consulted for behavioural difficulties.
- The control group consisted of patients without conduct disorder. However as this was a hospital based population, the control group was heterogeneous due to various other psychopathologies. A more homogenous control group may have contributed more to understanding the family and parenting factors.
- The sample also had a high proportion of mild intellectual disability. As family and parenting factors are also implicated in intellectual disability, this could have led to the significant differences not coming through between the two groups in spite of excluding moderate to profound levels of retardation clinically. Intelligence quantification could have helped to exclude all participants with scores < 70 from the study. This was however not done due the practical difficulty of testing the IQ of participants at an initial consultation outpatient basis.

- The conduct group was also heterogeneous including subtypes of conduct and associated comorbidities. There was a higher prevalence of oppositional defiant disorder among the conduct disorders diagnosed, which may be associated with less family pathology than the other subtypes. The high comorbidity in the conduct group could have also been a significant confounder in the study. However as comorbidity is usually seen in conduct disorders, we had decided not to exclude it from selection of cases.
- As this tertiary-care centre does not have a geographical catchment area and children with parents come all over the country, possibly only well motivated parents would have brought their child for assessment, bringing in a referral bias.
- Parents with significant pathologies might not have enrolled in the study and given consent, and thus could have affected the parenting variables.
- There are many more risk factors for conduct, but this study was limited to few. This was done due to the requirement in such a case for a higher sample size, which would not have been feasible due to the paucity of time for the study.

## 8. SUMMARY AND CONCLUSIONS

This study incorporating a case-control design was conducted to evaluate the factors, especially the family factors, associated with conduct disorder in children and adolescents presenting to a large tertiary care center. Cases were those with conduct disorder. Controls were selected by random allocation from the same setting and included participants with psychiatric disorders other than conduct disorder. A total sample of 159 was analyzed, 63 were cases and 96 were controls. Those with conduct disorder were compared with controls on participant, parental and family variables. There were significant differences between the groups in variables like gender, presence of co morbidity, number of comorbidities, negative parenting score and total parenting score, in the bivariate analysis. There were a significantly higher proportion of males in the conduct group with a significantly higher prevalence of comorbidities and number of comorbidities in children with conduct disorder when compared to those without conduct disorder. There was also a significant difference between the groups with regard to negative and total parenting scores with the conduct disorder group having a higher negative parenting score and lower total parenting scores (higher score representing better parenting). These variables remained significant when a stratum specific (gender) analysis was done. It was found that the presence of co morbidity increased the risk of conduct disorder by 2.5 times, and the presence of more than one comorbidity, increased the risk by 6 times. The risk of conduct disorder with a higher negative parenting score was 0.03 times higher than in those with a lower score, while a higher total parenting score was protective by 0.02 times. The other family factors like family functioning, type of family and parental psychopathology did not have a significant association with conduct disorder in this study. A multivariate analysis of

the variables significant in the bivariate analysis, found that gender and more number of comorbidities significantly increased the risk of conduct disorder, while parenting scores were no longer significant

The study is limited by the heterogeneous control group and significantly different male gender preponderance in the cases.

In conclusion, while this study failed to find a significant association of family factors with conduct disorder when a multivariate analysis was done, male gender and more number of comorbidities had a significant association with conduct disorder.

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## 10.2 Modified Kuppuswami Scale

TABLE I. Socioeconomic Status Scale of Kuppuswamy (Urban, 1976)<sup>1</sup>

Score Card		
(A)	Education	Score
1.	Professional or Honours	7
2.	Graduate or Post-Graduate	6
3.	Intermediate or Post-High-School Diploma	5
4.	High School Certificate	4
5.	Middle School Certificate	3
6.	Primary School or literate	2
7.	Illiterate	1
(B)	Occupation	Score
1.	Profession	10
2.	Semi-Profession	6
3.	Clerical, Shop-owner, Farmer	5
4.	Skilled worker	4
5.	Semi-skilled worker	3
6.	Unskilled worker	2
7.	Unemployed	1
(C)	Family Income Per Month (in Rs.)	Score
1	≥2000	12
2.	1000-1999	10
3.	750-999	6
4.	500-749	4
5.	300-499	3
6.	101-299	2
7.	≤100	1
Total Score		Socioeconomic Class
26-29		Upper (I)
16-25	Middle	Upper Middle (II)
11-15		Lower Middle (III)
5-10	Lower	Upper Lower (IV)
<5		Lower (V)

TABLE 2. Modified Family Income Groups of the Kuppuswamy's Socioeconomic Status Scale (Modified for 1998)

	Family Income Per Month (in Rs.)		Score
	Original	Modified (Rounded off to nearest 50)	
1	≥2000	≥ 13500	12
2.	1000-1999	6750-13499	10
3.	750-999	5050-6749	6
4.	500-749	3375-5049	4
5.	300-499	2025-3374	3
6.	101-299	676-2024	2
7.	≤ 100	≤ 675	1

### 10.3 Family APGAR Questionnaire

For each question, check only one box.

	Almost always ever	Some of the time	Hardly
1. I am satisfied that I can turn to my family for help when something is troubling me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____ _____			
2. I am satisfied that my family talks things over with me and shares problems with me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments _____			
3. I am satisfied that my family accepts and supports my wishes to take on new activities or directions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____ _____			
4. I am satisfied that my family expresses affection and responds to my emotions, such as anger, sorrow and love.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____ _____			
5. I am satisfied with the way my family and I share time together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____ _____			

#### **10.4 The Parent Practices Scale**

The following questions have to do with things that your child does and ways that you react to your child.

1. How often does this child do something that gives you pleasure and enjoyment?

0. Never

1. Less than once a week

2. About once a week

3. About three or four times a week

4. About once a day

5. Several times each day

6. Many times each day

2. How often does this child do something that greatly irritates you and gets on your nerves?

0. Never

1. Less than once a week

2. About once a week

3. About three or four times a week

4. About once a day

5. Several times each day

6. Many times each day

3. How often do you read to your child?

0. Never

1. Less than once a week

2. About once a week

3. About three or four times a week

4. About once a day

5. Several times each day

6. Many times each day

4. How often do you physically punish your child, for example by a spanking?

- 0. Never
- 1. Less than once a week
- 2. About once a week
- 3. About three or four times a week
- 4. About once a day
- 5. Several times each day
- 6. Many times each day

5. How often do you praise your child, by saying something like "Good for you!" "What a nice thing you did!" "Thank you!" or "That's good going!"

- 0. Never
- 1. Less than once a week
- 2. About once a week
- 3. About three or four times a week
- 4. About once a day
- 5. Several times each day
- 6. Many times each day

6. How often do you tell your child about your own experience, by saying something like, "I saw a pretty bird outside just a little while ago," or "I exercised so hard that I got really tired," or "I was able to give some directions today to somebody that got lost," or "I really like the way the sky looks now."

- 0. Never
- 1. Less than once a week
- 2. About once a week
- 3. About three or four times a week
- 4. About once a day
- 5. Several times each day
- 6. Many times each day

7. How often do you and your child talk or play with each other, focusing attention on each other for five minutes or more, without your asking or telling the child to do anything?

- 0. Never
- 1. Less than once a week
- 2. About once a week
- 3. About three or four times a week
- 4. About once a day
- 5. Several times each day
- 6. Many times each day

8. How often do you tell your child to do something, with an irritated or angry tone of voice?

- 0. Never
- 1. Less than once a week
- 2. about once a week
- 3. About three or four times a week
- 4. about once a day
- 5. several times each day
- 6. many times each day

9. How often do you and your child engage in make-believe play, where you each play the part of a character, and together make up a story to act out with each other?

- 0. Never
- 1. Less than once a week
- 2. About once a week
- 3. About three or four times a week
- 4. About once a day
- 5. Several times each day
- 6. Many times each day

10. How often do you and your child laugh together?

- 0. Never



1. Less than once a week
2. About once a week
3. About three or four times a week
4. About once a day
5. Several times each day
6. Many times each day

11. How often do you yell or speak in a very loud voice to your child, with irritated or angry emotion?

0. Never
1. Less than once a week
2. About once a week
3. About three or four times a week
4. About once a day
5. Several times each day
6. Many times each day

12. What fraction of days does your child get three meals, one in the morning, one around noon, and one in the evening?

0. Never
1. Some, but less than a quarter of the time
2. Between a quarter and half the time
3. Between half and three quarters of the time
4. Not all the time, but more than three quarters of the time
5. All the time

13. What fraction of days does your child get a bath or shower at one particular time, known as his or her bath time?

0. Never
1. Some, but less than a quarter of the days
2. Between a quarter and half the days
3. Between half and three quarters of the days

4. Not all the days, but more than three quarters of the days

5. All the days

14. What fraction of the time does your child go to bed at one particular time, known as his or her bedtime?

0. There is no regular or official bedtime

1. There is an official bedtime, never kept

2. There is an official bedtime, kept some, but less than a quarter of the time

3. Official bedtime kept between a quarter and half the time

4. Official bedtime kept between half and three quarters of the time

5. Official bedtime kept not all the time, but more than three quarters of the time

6. Official bedtime kept all the time

15. What fraction of days does your child eat all of the following: some meat (or other high protein food), some fruits or vegetables, some milk products, and some bread or grain products?

0. Never

1. Some, but less than a quarter of the days

2. Between a quarter and half the days

3. Between half and three quarters of the days

4. Not all the days, but more than three quarters of the days

5. All the days

16. When you and your child set out to do something fun together, what fraction of the time does it actually turn out to be fun?

0. Never

1. Some, but less than a quarter of the time

2. Between a quarter and half the time

3. Between half and three quarters of the time

4. Not all the time, but more than three quarters of the time

5. All the time

17. What fraction of days are you too worn out and exhausted to do something fun with your child?

0. Never
1. Some, but less than a quarter of the days
2. Between a quarter and half the days
3. Between half and three quarters of the days
4. Not all the days, but more than three quarters of the days
5. All the days

18. How often does the thought go through your mind that you wish you didn't have to spend so much time with this child?

0. Never
1. Less than once a week
2. About once a week
3. About three or four times a week
4. About once a day
5. Several times each day
6. Many times each day

19. Think of all the times that you comment to the child about the child's behavior. What fraction are congratulation or approval?

0. No approval
1. Less than a quarter of the comments are approval
2. Between a quarter and a half are approval
3. Between half and three quarters are approval
4. Not all, but greater than three quarters are approval
5. All are approval

20. Think of all the times that you comment to the child about the child's behavior. What percentage are correction or disapproval?

0. No disapproval or correction
1. Less than a quarter of the comments are disapproval

2. Between a quarter and a half are disapproval
3. Between half and three quarters are disapproval
4. Not all, but greater than three quarters are disapproval
5. All are disapproval or correction

21. Suppose your child was handling an object that you definitely did not want the child to handle. Suppose you told the child to put the object down, and he or she defiantly said "No!" Of the following options, which do you think would be the most appropriate response, most of the time?

0. Spank the child
  1. Send the child to a room for half an hour or more
  2. Yell at the child
  3. Repeat the request until the child obeyed
  4. Ignore the child
  5. Send the child to a room for two to five minutes
  6. Show some disapproval in your voice and in your face, and physically get the object from the child, and from then on, if possible, keep the object in a place the child couldn't reach
22. Do you keep your child from seeing television shows and movies that have a lot of violence or meanness in them?

0. I don't try to do this.
1. I try to do this, but I don't succeed at all.
2. I try to do this, but I only succeed a little bit.
3. I try to do this, and I succeed fairly well.
4. I try to do this, and the child sees almost no violence on television.

23. How often does your child see adults or teenagers in your house physically fighting with or hitting or otherwise trying to hurt each other?

0. Never
1. Less than once a week
2. About once a week
3. About three or four times a week
4. About once a day

5. Several times each day

6. Many times each day

24. When you give the child a command or order to do something, what fraction of the time do you make sure that the child does it?

0. Never

1. Some, but less than a quarter of the time

2. Between a quarter and half the time

3. Between half and three quarters of the time

4. Not all the time, but more than three quarters of the time

5. All the time

25. Have you arranged the objects in your house so that those things you don't want the child to mess with are not within his reach, so that you don't have to command him to stay out of them?

0. Many things are in reach that the child should leave alone.

1. A good number of things are in reach that the child should leave alone.

2. A few things are in reach that the child should leave alone.

3. Almost no things are in reach that the child should leave alone.

4. No things are in reach that the child should leave alone.

26. How often is your child able to get his or her way by having a tantrum?

0. Never

1. Less than once a week

2. About once a week

3. About three or four times a week

4. About once a day

5. Several times each day

6. Many times each day

27. How often do you tell your child you may leave him or her if he or she doesn't behave better?

0. Never

1. Less than once a week
  2. About once a week
  3. About three or four times a week
  4. About once a day
  5. Several times each day
  6. Many times each day
28. How often do you punish your child for crying?
0. Never
  1. Less than once a week
  2. About once a week
  3. About three or four times a week
  4. About once a day
  5. Several times each day
  6. Many times each day
29. How often do you punish your child for wetting himself or herself?
0. Never
  1. Less than once a week
  2. About once a week
  3. About three or four times a week
  4. About once a day
  5. Several times each day
  6. Many times each day
30. How often do you or does someone else tell the child that he is bad or that he is not as good as someone else?
0. Never
  1. Less than once a week
  2. About once a week
  3. About three or four times a week

4. About once a day

5. Several times each day

6. Many times each day

31. How often does the child see an adult in the house raise his voice in anger at some other adult in the house?

0. Never

1. Less than once a week

2. About once a week

3. About three or four times a week

4. About once a day

5. Several times each day

6. Many times each day

32. How often does the child see an adult in the house do something kind, friendly, or very much appreciated by another adult in the house?

0. Never

1. Less than once a week

2. About once a week

3. About three or four times a week

4. About once a day

5. Several times each day

6. Many times each day

33. When your child asks you a question, what fraction of the time do you feel like answering it in an enthusiastic and interested way, rather than feeling irritated that your child is bothering you?

0. Never feel like answering enthusiastically

1. Feel like answering enthusiastically some, but less than a quarter of the time

2. Between a quarter and half the time

3. Between half and three quarters of the time

4. Not all the time, but more than three quarters of the time

5. Feel like answering enthusiastically all the time

34. What do you think would be the best thing to do, of the following options, if your child spilled his or her milk?

0. Clean up the milk without criticizing the child
1. Get the child to clean up the milk and scold him or her
2. Send the child to a room for two to five minutes
3. Yell at the child not to be so clumsy
4. Send the child to a room for thirty minutes
5. Give the child a spanking



## **10.5. Consent Forms**

### **Participant information sheet**

#### **Title of study:**

Case control study of assessment of family predictive factors associated with conduct disorders in children and adolescents

#### **Institution:**

Christian Medical College & Hospital, Vellore (CMCH)

#### **Nature and purpose of the study:**

You and your child are taking part in a research, which attempts to assess the family predictive factors for conduct disorders.

#### **Explanation of procedure to be followed:**

CMCH doctors from the department of child psychiatry will conduct this study. Your child will undergo assessment for current problems and further assessment of family environment, parenting style, parental mental illnesses.

#### **Expected duration of involvement:**

The assessment will be done in one session. Each session will last about 30-90 minutes.

#### **Possible benefits of the study:**

You will not be charged for this assessment. The information we obtain will help us to assess and plan an intervention for conduct disorders. Other children may also benefit from the overall conclusions at the end of the study.

#### **Confidentiality**

The records and all details obtained in this study will remain strictly confidential at all times, but will need to be available to the doctor conducting the study. Your identity will not otherwise be revealed. Your personal data will be collected and processed only for the research purposes in connection with the study. You will not be referred to by name or identified in any report or publication.

#### **Verbal assent from the child**

Verbal assent from the child will be acquired whenever possible.

**Right to withdraw from the study**

You are free to leave the study at any time. Your decision to not to participate in this study will not cause any loss of benefits or affect your future medical or psychiatric care.

**Consent**

I/We have read/.....had read out to us, the above information before signing this consent form.

**Signature of the parent/ guardian  
consent.**

**Signature of the person obtaining**

**Date:**

**Informed consent form**

Study Title:

Study Number:

Subject's Initials: \_\_\_\_\_ Subject's Name: \_\_\_\_\_

Date of Birth / Age: \_\_\_\_\_

Please initial box

(Subject)

(i) I confirm that I have read and understood the information sheet dated \_\_\_\_\_ for the above study and have had the opportunity to ask questions. [ ]

(ii) I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. [ ]

(iii) I understand that the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published. [ ]

(iv) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s) [ ]

(v) I agree to take part in the above study. [ ]

Signature (or Thumb impression) of the Legally Acceptable Representative: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Signatory's Name: \_\_\_\_\_

Signature of the Investigator: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Study Investigator's Name: \_\_\_\_\_

Signature of the Witness: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Name of the Witness: \_\_\_\_\_

जानकारी पत्र

हम आपको यह जानकारी देना चाहते हैं कि यह स्टडी हमें वैज्ञानिकों में कुछ नया खोजने के लिए कर रहे हैं। इस में आप और आपका बच्चा सहयोग देकर उसे नजदीकी से देखकर समझने का मौका है। इसमें आपके बच्चे को कोई दुर्घटना नहीं हो जायेगी। आपके बच्चे को एक घंटे के लिए वैज्ञानिक रूप से जांचा जायेगा।

इस स्टडी में भाग लेकर आपके बच्चे को कोई शारीरिक नुकसान नहीं होगा। इस जांच में सिर्फ कलम और कागज का प्रयोग किया जायेगा। शरीर नुकसान पहुंचाने वाली जांच नहीं की जायेगी।

अगर आप और आपका बच्चा इस स्टडी में भाग लेते हैं तो इससे आप लोगों को कुछ तुरंत लाभ नहीं होगा परंतु इससे हमें मदद मिलेगी ता हम आप के बच्चे अनुसार दूसरे बच्चों की चिकित्सा और अच्छी तरह से कर सकें।

इस स्टडी के दौरान जो भी बतिया निकलेगी वह गुप्त रखा जायेगा और सिर्फ वैज्ञानिक रूप से ही उपचार होगा। इस रिकॉर्ड को सिर्फ वैज्ञानिक डॉक्टर देख पायेंगे।

इस स्टडी में भाग लेने से या इनकार कर से आपके इलाज पर कोई असर नहीं होगा। अगर आप कोई प्रश्न पूछना चाहें तो आप इस स्टडी के वैज्ञानिक डॉक्टर से पूछ सकते हैं।

अगर आप इस स्टडी से निकलना चाहें तो आप कभी भी, कोई भी समय बाहर निकल सकते हैं। ऐसा करने पर आपके इलाज पर कोई फर्क नहीं पड़ेगा। इससे आपका कोई नुकसान नहीं होगा।

### அறிவித்த ஒப்புதல்

#### 1. ஆய்வின் தலைப்பு:

நடத்தை பிரச்சனை உடைய குழந்தைகளின் குடும்பத்தில் உள்ள காரணங்களை கண்டறியும் ஆய்வு

#### 2. ஆய்வு நடக்கும் இடம்:

கிறிஸ்துவ மருத்துவக் கல்லூரி, வேலூர்

#### 3. ஆய்வின் தன்மை மற்றும் குறிக்கோள்:

நடத்தை பிரச்சனை உடைய குழந்தைகளின் குடும்பத்தில் உள்ள காரணங்கள் மற்றும் குடும்ப சூழ்நிலையை கண்டறியும் ஆய்வில் நீங்களும் உங்கள் குழந்தையும் பங்கு பெற உள்ளீர்கள்.

#### 4. ஆய்வின் விவரங்கள்:

குழந்தையின் பிரச்சனைகள், குடும்ப சூழல், குழந்தை வளர்ப்பு முறை, பெற்றோர் செயல் முறை, மற்றும் பெற்றோரின் மன நோய் பற்றிய விவரங்கள் கேட்கப்படும்

#### 5. ஆய்வின் காலகட்டம்:

ஒரு அமர்வில் குழந்தையின் அளவீடு நடைபெறும்.

கிட்டத்தட்ட 30 - 90 நிமிடங்கள் நடைபெறும்.

#### 6. ஆய்வின் மூலம் ஏற்பட கூடிய பலன்கள்:

குழந்தையின் அளவீடுக்கு கட்டணம் செலுத்த தேவையில்லை.

அளவீட்டின் மூலம் குழந்தையின் பிரச்சனை மற்றும் அதற்கான சிகிச்சை பற்றிய திட்டங்கள் வகுக்கப்படும். இந்த ஆய்வின் முடிவில் பல குழந்தைகள் நலங்களை பெறலாம்.

#### 7. ரகசிய தன்மை பாதுகாப்பு:

இந்த ஆய்வின் அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும்.

நோயாளியின் விவரங்கள் வெளியில் தெரிவிக்கப்படாது.

உங்களின் விவரங்கள் ஆய்வில் சம்பந்தப்பட்டவர்களால் மட்டுமே உபயோகிக்கப்படும்.

இந்த ஆய்வை வெளியீடு செய்தாலும் உங்களின் பெயர் மற்றும் உங்களைப் பற்றிய அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும்.

#### 8. குழந்தையின் ஒப்புதல் பெறப்படும்:

#### 9. ஆய்விலிருந்து வெளியேறும் உரிமை:

நீங்கள் இந்த ஆய்விலிருந்து எப்பொழுது வேண்டுமானாலும் வெளியேறலாம். இதனால் உங்களின் மருத்துவ மற்றும் மனநல சிகிச்சை எந்த விதத்திலும் பாதிக்கப்படாது.

ஒப்புதல்:

நான் / நாங்கள் \_\_\_\_\_ இதைப்  
படித்திருக்கிறோம்.

கையொப்பம்:

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அறிவித்த ஒப்புதல்

1. ஆய்வின் தலைப்பு:
2. ஆய்வு எண்:
3. பெயர்:
4. பிறந்த நாள் / தேதி / வருடம் வயது:

நான் இந்த ஆய்வு பற்றிய விவரங்களை படித்து தெரிந்து கொண்டேன்.  
இது பற்றிய கேள்விகளை கேட்கும் வாய்ப்பு எனக்கு அளிக்கப்பட்டது.

இந்த ஆய்வில் நான் கலந்து கொள்வது என் சுயவிருப்பத்தினால்  
என்பதையும், எப்பொழுது வேண்டுமானாலும்  
நான் இதிலிருந்து வெளியேறலாம் என்பதையும், அது என் சிகிச்சையை  
எந்த விதத்திலும் பாதிக்காது என்பதையும்  
நான் அறிவேன்.

நன்றெறிக் குழுவினரும், ஆய்வு சம்பந்தப்பட்ட அதிகாரிகளும், என்  
சிகிச்சை பற்றிய விவரங்களை காண்பதற்கு  
என் ஒப்புதலை பெற அவசியம் இல்லை என்பதை நான் அறிவேன்.  
என்னைப் பற்றிய விவரங்கள் பிறருக்கு அல்லது  
ஆய்வின் வெளியீட்டிலும் தெரிவிக்கப்படாது என்பதை அறிவேன்.

இந்த ஆய்வில் உள்ள என் பற்றிய விவரங்கள், அறிவியல் வெளியீடுகளில்  
உபயோகிக்கப்படுவதை நான் எந்த விதத்திலும்  
தடை விதிக்க மாட்டேன் என்பதற்கு ஒப்புதல் அளிக்கிறேன்.