

Effect of the Familial and Socioeconomic Conditions on Childhood Conduct Disorders: A Study on an Egyptian Population

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INTRODUCTION

DSM-IV definition of Childhood conduct disorder:

Childhood-onset conduct disorder refers to a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated. The first symptom must start at or before the age of ten (at least three criteria must be present in the last 12 months, with at least one criterion present in the past 6 months) [1].

The incidence rate of CD increased in the last decades:

- ✓ Is it false increase due to use of DSM-IV instead of DSM-III, or due to increased awareness of parents who easily seek psychiatric advice.
- ✓ Is it true increase? Some studies adopted this concept e.g. Collishaw and Colleagues [2].

There is wide variability in the prevalence of CD among studies.

Why?

Variation in the population studied, countries, and ethnic subgroups. Variation in the used diagnostic tools. Variation in the social norms and traditions of the study samples. Variability in the number and type of informants e.g. parents vs. teachers, mother vs. father.

No registry in Egypt for Psychiatric and behavioral disorders. Prevalence of CD is known from few-small sampled hospital-based studies.

Predictors of conduct disorder:

- 1- Extrinsic factors e.g. familial, social, parenting factors, environmental toxicity as in early or prenatal exposure to lead.
- 2- Intrinsic factors e.g. genetic, hormonal, biochemical factors...etc.

In Egypt, no community-based studies have evaluated the possible risk factors for childhood CD.

CD may be of multifactorial predisposition.

Aim of the study:

- 1- Identification of the current prevalence of CD in Egypt.
- 2- Identification of the familial and social predictors of CD in the Egyptian Community.

Awareness of the CD risk factors in a community is necessary in order to develop a future culturally and socially-appropriate preventive program directed to at-risk children that can help them develop into productive members of the community.

Subjects and Methods

Study Design: Cross-sectional study.

Study period: 9 months (September 1st 2006- end of May 2007).

Study sample: Multistage random sample.

Sample size: 3112 children.

Target population: Primary school children (range 9-11 years). The sample was obtained from Urban governmental, rural governmental, and non governmental (private) school.

Consents were obtained from children's legal guardians.

Materials:

- 1- Questionnaire: to be filled out by children's caregiver.

It contains data about personal, socioeconomic, family, medical, and other child-related data. Estimation of a family's socioeconomic grade was based on a scale that combined data on father's educational level, father's work, mother's educational level, mother's work, family income, crowding index, home sanitation, and recreational facilities in the home. The total score for this classification is 44. A family's socioeconomic level was classified as high (75-100 % of the total score), moderate (50- < 75 % of the total score), or low (< 50 % of the total score).

- 2- DSM-IV Diagnostic criteria for conduct disorder.

- 3- Revised child behavioral problem checklist (RBPC).

- Health records of all children were investigated for any history of chronic medical illness. Children with medical problems were not excluded from the sample, because one of the goals was to evaluate the relationship between chronic medical illness and conduct disorder.
- Parents and teachers were blinded about the aim of this study (they were told that researchers are investigating learning disorders).
- Class teachers were asked to rate the behavior of children according to the Arabic Version of DSM-IV diagnostic Criteria.
- Children who were diagnosed as potentially positive for conduct disorder by DSM-IV were also rated on the Revised Child Behavior Problem Checklist (RBPC)- teacher report form (TRF) by teachers other than those who have rated them by DSM-IV.

- In order to provide rating for a child, a teacher had to be one of child's principal class teachers who had observed the child regularly for most of the weekdays and for at least 12 months.
- Test reliability of the RBPC is 0.73- 0.94, with a range of inter-rater reliability of 0.52- 0.85.

STATISTICAL ANALYSIS

Data were analyzed using SPSS Statistical Package version 13. Prevalence rate was calculated using the formula: number of conduct disordered children in the studied population during the period of the study/ total number of children in the same period of observation X 1000. The level of significance was set at 95 % ($p \leq 0.05$) and tests of significance were applied in the form of independent t-test and chi-square (χ^2). Logit loglinear regression analysis and general linear model were used to evaluate predictors of CD after adjustment for confounding variables. A loglinear backward elimination model was applied to evaluate multi-way interactions between the risk factors.

Results and Discussion

Results concluded from this study are:

- Prevalence rate of CD in the study sample was (7.31 %). The highest prevalence rate was observed among rural governmental school children (8.40 %) and the lowest among urban governmental school children (6.03 %). Prevalence rate of CD increased with grade of education: 6.84 %, 7.02 %, and 8.12 % for children in the 3rd, 4th, and 5th grades of primary education, respectively.

- Children with CD were significantly older than children without CD, with a mean age of (10.11 ± 0.78).
- Birth order >3 was not associated with a significantly higher risk for CD [odds ratio of birth order ≤ 3 / birth order > 3 is 1.06 (0.76-1.49), $P > 0.05$], nor was the presence of chronic physical illness in the child [1.44 (0.86- 2.43), $p > 0.05$].
- Children exposed to adverse familial conditions such as family disputes, parental divorce, and deprivation of at least one of the parents were at greater risk of CD than non exposed children [2.30 (1.66- 3.22), $p < 0.001$; 5.38 (3.14- 9.20), $p < 0.001$; 2.74 (1.83- 4.10), $p < 0.001$; respectively].
- Family histories of psychiatric illness and crime constituted significant risks for childhood CD [2.78 (1.39- 5.58), $p < 0.01$; 3.21 (1.64- 6.31), $p < 0.001$; respectively]. Children of drug abusing parents had a higher risk of CD, but not to a significant level [1.71 (0.72- 4.06), $p > 0.05$].

- Children with perinatal complications were at higher risk of CD than those with an unremarkable perinatal history [3.50 (2.25- 5.42), $p < 0.001$].
- Nocturnal enuresis at 9-11 years of age was a symptom associated with CD [2.34 (1.53- 3.58), $p < 0.001$].
- Male children were significantly more likely than females to develop CD [1.85 (1.39 – 2.46), $p < 0.001$].
- Body build (as expressed by BMI) was not a risk factor for CD. Neither underweight children [0.36 (0.02 – 5.99), $p > 0.05$], nor overweight and/or obese children [0.94 (0.53 – 1.67), $p > 0.05$] were at greater risk to CD as compared to children with normal BMI.
- Watching of violent media programs versus quiet or mixed programs was a significant risk factor for CD [1.60 (1.05 – 2.44), $p < 0.05$]. However, conduct disordered children did not differ from children without CD in the number of hours of media watching [(2.8 ± 1.5) vs.(2.7 ± 1.4); respectively, $p > 0.05$].

- Having parents with low education or illiteracy was a significant risk factor for CD, compared to having parents with university education or higher. Having parents with a secondary level of education or higher could be protective against childhood CD ($p < 0.05$).
- Although father's work was not a risk factor for CD ($p > 0.05$), children of professional mothers were at higher risk of CD than other children. In contrast, children of mothers in non vocational occupations had a significant lower risk of CD than other children [0.46 (0.31- 0.69), $p < 0.01$].
- Moderate family income was protective against CD [0.61 (0.44 – 0.84), $p < 0.05$], however children with either low or high family income were more likely to develop CD. Similarly, children living in extremes (low or high) of socioeconomic standard (SES) had a significantly higher risk of CD than those living in moderate SES [3.12 (2.20 – 4.39), $p < 0.001$; 1.79 (1.27 – 2.51), $p < 0.01$; respectively].

> Presence of good peer social relations in general was protective against CD [0.32 (0.20 – 0.52), $p < 0.001$], except if these relations were with violent peers as this was associated with an increased risk of CD [3.20 (1.73- 6.17), $p < 0.01$].

> In the general linear model and regression analyses, child's sex, mother's work, socioeconomic grade, parental divorce, deprivation of at least one of the parents, family histories of psychiatric illness and crime as well as perinatal complications remained significant predictors of CD, while the other factors turned insignificant after adjustment.

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