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Caregiving environment and socio-emotional development of foster-placed FASD-children

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ABSTRACT

The study investigated the role of the postnatal caregiving environment in the socio-emotional development of children under the age of 16 who had been exposed to alcohol in utero and placed in foster family care ($n=38$). Quantitative and qualitative methods of analysis were utilized. Based on psychological examinations, most of the children (76%) were reported to have at least one developmental problem; concentration, attention and language/speech problems being the most typical. The critical issues affecting children's development were 1) the range of somatic illnesses and disabilities that had impaired their functional capacity, 2) children's age at the time of the first placement and of entry into long-term foster family care, and 3) the number of traumatic experiences. Placement outside a biological family at an early age decreased, and traumatic experiences, illnesses and disabilities increased socio-emotional problems (including neuropsychological problems). Undiagnosed children had more behavioural problems measured by the Child Behaviour Checklist than children with foetal alcohol syndrome, but in general the differences between the diagnostic categories were small. Damage to the central nervous system by prenatal alcohol exposure together with lack of constructive early interaction seems to launch a process which may make it difficult for the child to form a coherent picture of him-/herself and to control his/her feelings and behaviour.

1. Introduction

The adverse effects of alcohol on the developing human represent a spectrum of structural anomalies and behavioural and neurocognitive disabilities, most accurately termed foetal alcohol spectrum disorders (FASD), (Sokol, Delaney-Black, & Nordström, 2003). Children at the severe end of the spectrum have been defined as having foetal alcohol syndrome (FAS). Children not fulfilling all of the criteria for FAS are diagnosed as having partial foetal alcohol syndrome (PFAS), alcohol-related birth defects (ARBD) or alcohol-related neurodevelopmental disorder (ARND), (Hoyme et al., 2005). The serious effects of prenatal alcohol exposure became common knowledge about 40 years ago (Jones, Smith, Ulleland, & Streissguth, 1973; Lemoine, Harousseau, Borteyru, & Menuet, 1968). Since then the research has focused on physical features, abnormalities of brain structures and function, and behavioural problems in children exposed prenatally to alcohol for various periods of time. Only a few investigators have studied the effect of living in an adverse environment on the developmental outcome of children with FASD. In recent years there has been increasing awareness of the dual risk of prenatal alcohol exposure and adverse living environments (e.g. Coggins, Timler, & Olswang, 2007; Hyter & Way, 2007; Koponen, 2004).

2. Theory

The research has not been able to identify a safety level for drinking during pregnancy (Henderson, Gray, & Brocklehurst, 2007). Higher amounts and longer durations of alcohol exposure increase the risk of central nervous dysfunction (Aronson, 1984; Autti-Rämö, 1993; Streissguth, Bookstein, Sampson, & Barr, 1993). The risk of anatomic abnormalities is highest during the first months of pregnancy (Ernhart et al., 1987) but the central nervous system remains sensitive throughout pregnancy (e.g. Autti-Rämö, 2000). Also smoking, nutrition and health of the mother during pregnancy, the genotype of the mother and the child, and the nourishment and general health of the child affect the developmental outcome of the child (Rosett, 1980; Streissguth, 1997).

Birth weight, length and head circumference of alcohol exposed children have been shown to be affected depending on the amount and duration of alcohol exposure (e.g. Aronson, 1984; Autti-Rämö, 1993; Streissguth, Clarren, & Jones, 1985). The symptoms of central nervous dysfunction vary with age. Infants have difficulties to habituate to such environmental stimuli as light and noises (Streissguth et al., 1993).

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Withdrawal symptoms, irritability, and feeding and sleeping problems are also frequent in newborn and small infants after heavy alcohol exposure (e.g. Steinhausen, Nestler, & Spohr, 1982; Spohr & Steinhausen, 1984; Streissguth, 1976). Prenatal alcohol exposure can lead to a decreased IQ score (Mattson & Riley, 1998). However, most FASD-children have normal intelligence but difficulties in concentration and attention as well as specific learning problems (e.g. Aronson, 1984; Autti-Rämö, 1993; Streissguth et al., 1985; Streissguth, Aase, Clarren, Randels, LaDue, & Smith, 1991; Veltheim & Ylitalo, 1998). Also problems in visual perception, motor ability, short memory, logical conclusions, impulse and aggression control, and naming and language development have been found (e.g. Aronson, 1984; Aronson & Hagberg, 1998; Korkman, Autti-Rämö, Koivulehto, & Granström, 1998; Mattson & Riley, 1998; Steinhausen et al., 1982; Spohr & Steinhausen, 1984) along with problems in situation appraisal, noticing social cues (e.g. Streissguth et al., 1991) and keeping friends (Aronson & Hagberg, 1998; Aronson, Hagberg, & Gillberg, 1997).

Furthermore, self-stimulating behaviour like rocking and head-banging (Steinhausen et al., 1982; Spohr & Steinhausen, 1984; Streissguth, 1976), and uninhibited behaviour with strangers at the age of 10–14 (Streissguth et al., 1985) have been noticed among FASD-children. These behavioural patterns have also been observed among children with attachment disorders (Zeanah & Boris, 2000). FASD-children typically grow up in environments with many adversities, such as many placements (e.g. Streissguth et al., 1991). In the studies by O'Connor, Sigman and Brill (1987), O'Connor, Sigman and Kasari (1992) and O'Connor, Kogan and Findlay (2002) a majority of the children exposed prenatally to alcohol were insecurely attached to their parents.

Earlier studies did not support the view that caregiving environment or attachment security would affect neurocognitive development in FASD-children (e.g. Aronson, 1984; Aronson & Olegård, 1987; O'Connor et al., 1987; Streissguth, 1976; Streissguth et al., 1993). Neurocognitive problems are considered to be 'primary' and the caregiving environment is seen to affect only 'secondary' emotional and social problems (e.g. Streissguth, Barr, Kogan, & Bookstein, 1996; 1997). However, Aronson and Hagberg (1998) suggested that placement in a foster home may lead to improved overall performance and a better quality of life for affected children, although normalization does not occur. A recent study by Henry, Sloane and Black-Pond (2007) showed that traumatized children with FASD and without FASD both had neurodevelopmental deficits and behavioural problems but in the first group the problems were more severe. Rutter and the English and Romanian Adoptees study team (1998) and Benoit, Jocelyn, Moddemann and Embree (1996) showed that as a consequence of gross early privation children adopted from Romania were severely mentally impaired, and their height, weight and head circumference were below normal at the time of U.K. entry. The developmental catch-up after adoption was impressive in a subgroup of children. The strongest predictor of the level of cognitive functioning at 4 and 6 years was the children's age at entry to the U.K. (Rutter et al., 1998; Rutter, 2004). Children adopted before the age of 6 months were better developed physically and cognitively than children adopted after that age. Developmental delay or handicap had not been the reasons for the children's institutionalizations. These three studies suggest that adverse environmental influences alone are able to generate neurodevelopmental problems, and thus may increase neurodevelopmental problems among FASD-children.

There is increasing evidence that an infant's developing neurological system and aspects of interactions between the infant and the primary caregiver are interdependent (Hertsgaard, Gunnar, Erickson, & Nachmias, 1995; Pipp-Siegel, Siegel, & Dean, 1999; Spangler & Grossmann, 1993). The substance exposed mother and child are difficult regulatory partners for each other: the exposed infant often has an impaired ability to regulate his/her states, and the mother usually has a reduced capacity to read the child's communicative signals (Atchison, 2007; Beeghly & Tronick, 1994; Pajulo et al., 2001). Neglect, lack of environmental stimulus and abuse during the critical periods of brain growth may cause permanent damage to cognitive abilities (Glaser, 2002). According to Schore (2003) the effect of the environment starts already in utero. In recent studies, the quality of the postnatal caregiving environment combined with neurophysiological vulnerability are considered to be the most important prognostic factors for the developmental outcome of children prenatally exposed to alcohol (Carmichael Olson, O'Connor, & Fitzgerald, 2001; Mayes & Truman, 2002).

3. Objectives

The aim of the study was 1) to describe the caregiving environment, somatic health and socio-emotional development (including neuropsychological problems) of FASD-children living in foster families, and 2) to examine the role of the caregiving environment in their development. In this article the focus is on children living in foster families. The results of the larger data including also children living in institutions and in biological families have been published in Finnish (Koponen, 2005a,b, 2006).

Based on the previous studies and theories we stated the following hypotheses:

1. Placement at an early age into long-term care in a foster family decreases the risk of socio-emotional problems (including neuropsychological problems).
2. Traumatic experiences increase the risk of socio-emotional problems.
3. Multiple placements increase the risk of socio-emotional problems.

4. Materials and methods

4.1. Data collection

The 38 children in the present study belonged to a larger sample of children collected from among clients of the child protection unit of the Helsinki Social Welfare Department at the beginning of 2002. Social workers were asked to send background information collected by questionnaire about all children prenatally exposed to alcohol or drugs and born in 1986 or later. Social workers sent information about 93 children, of whom 63 were exposed to alcohol, 15 to alcohol and drugs and 15 to drugs only. After one reminder and a phone call to the non-respondents, the response rate was 71%.

Social workers posted a separate questionnaire to each child's primary caregiver, who was either a biological parent or a foster parent, or a primary nurse in an institute. One reminder with a new copy of the questionnaire was sent to non-respondents. The response rates were as follows: foster parents, 70%, and primary nurses in an institute, 60%. Of the 18 biological parents only 2 responded to the questionnaire. The main investigator numbered each social worker, and social workers numbered their child clients. These two numbers were used to combine the information collected with the two separate questionnaires. Ethical permission to conduct the study was received from the Helsinki Social Welfare Department.

Of the sample of 93 children, 38 children who fulfilled the following inclusion criteria were included in the present study:

1) prenatal exposure to alcohol or to alcohol and drugs,
2) living in a foster family,
3) both the child's social worker and foster parent responded to the questionnaires.

Thirty-four foster parents answered the open-ended question posed at the end of the questionnaire providing access to qualitative data: "Please, tell us in your own words about the life of this child. What is it like right now, and what has it been like in the past?" Follow-up data was collected on six children by interviewing their foster mothers in 2004. Five of these children had been placed immediately after birth and had never lived with their biological