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Original article

Screening for risk factors of relational withdrawal behaviour in infants aged 14–18 months

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Abstract

Objectives. – The objectives of this study were (1) to evaluate the prevalence of relational withdrawal behaviour in infants aged 14–18 months attending a public health centre in Paris, (2) to check some identified risk factors for relational withdrawal behaviour in this population.

Methods. – A cross-sectional study was conducted in infants aged 14–18 months attending a child health screening centre during the year 2005.

Results. – A total of 640 children were included in the study. Thirteen percent of the 640 infants ($n = 83$, 95% CI [10.4%; 15.6%]) had an ADBB score at 5 and over 5 on the ADBB. There was a clear relationship between withdrawal behavior and having psychological difficulties as reported by parents, and between withdrawal and developmental delay. Withdrawal was also significantly associated with being a boy, with living in risk conditions (e.g. child being in joint custody, or with living in a foster family), with being adopted, or with being a twin. More withdrawn infants were taken care of at home.

Conclusion. – Sustained relational withdrawal behaviour was linked with developmental disorders and psychopathology and not with SES, ethnical origin or rank of birth. The scale could be used in screening early psychopathology in infants aged 2–24 months of age.

Keywords: Screening; Infancy withdrawal behaviour; Assessment of relational abilities; Alarm Distress Baby Scale (ADBB)

1. Introduction

Infants are born with both biologically determined abilities and an urge to participate in human interaction, the early parent-infant relationship providing the scaffolding necessary for the infant to develop [3,8,38]. The interactional skills of the infant include the ability to initiate and maintain eye contact with another person, to vocalize, and to use facial expressions and body and head movements to engage the caregiver or other persons in interaction. All normally developing infants display these skills during the first two months after birth, and even though infants may differ in their style and degree of responses to various stimuli – i.e. have different temperaments – they still are responsive to social interaction with an adult [11]. Withdrawn social behavior in infants is indicated by diminished or lacking positive behaviours (e.g. eye contact, smiling, cooing) or negative behaviours (e.g. crying).

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Withdrawal is to a certain degree a normal feature of infant behaviour in parent-infant interactions, and a way for the infant to regulate the flow of interaction [3]. However, increased or sustained withdrawal reaction in infants can be observed in inadequate parent-infant interactions, for example between a depressed mother and her infant or with a substance-dependent mother. The infant's "depressed" style of interacting may be carried over to other relationships as well, and be apparent even when the infant interacts with a non-depressed adult [10]. Observations of young children separated from their caregivers led Robertson and Bowlby [31] to describe a three-stage emotional reaction in young children, comprising protest, despair, and eventually detachment in the face of prolonged separation. Along these lines, sustained withdrawal behavior may be viewed as a chronic diminution of the attachment system, which is gradually generalized into a diminished engagement and lowered reactivity to the environment as a whole. Withdrawn social behavior from as early as 2 months of age, indicated by a lack of either positive (e.g., smiling, eye contact) or negative (e.g., vocal protestations) behavior, is more akin to a state of learned helplessness [34] and should alert the clinician to the possibility that the infant is not displaying age-appropriate emotional/social behavior. Infants may also appear socially withdrawn in several clinical conditions, for example in autism, chronic or severe pain, failure to thrive, or posttraumatic stress disorder [13,33,38]. Withdrawal behaviour is also a key symptom of infant depression [36]. That social withdrawal could be a sign of infant depression is supported by several studies. For instance, frontal electroencephalographic (EEG) asymmetry and high basal and reactive cortisol levels found in depressed adults have also been found in infants presenting withdrawn social behaviour, and sadness [4,5,17]. The findings are similar to those for depressed adults [22] and for preschoolers [23,24]. Withdrawal behavior is also a feature of most attachment disorders, particularly disorganized attachment [2].

In light of data gathered from various studies, withdrawal from social interaction is a sign of infant distress regardless of the cause, and can reflect the problems of the infant but also those of the caregivers [18,20,25,26]. There is an increasing awareness that assessing the level of an infant's social behavior is important: while diminished social behavior in the infant may not necessarily be an indicator of pathology, it should alert the clinician to undertake further assessment of both the infant and the environment. In some cases, it may reveal that the mother is experiencing psychosocial difficulties (e.g., postnatal depression, anxiety, or bonding difficulties) which she may have been reluctant to disclose [35]. Since development is an interactive process, withdrawal behavior is a developmental risk in itself [32,37], and may lead to further social withdrawal, anxiety or conduct disorders [12].

However, detection of infant withdrawal may be difficult, particularly for front line workers who may not have much training in infant mental health issues. A simple screening scale to enhance structured observation of infant social behaviour, the Alarm Distress Baby Scale or ADBB [14] has been developed and used in several studies, in several countries, and in different settings. The ADBB scale was designed to assess infant withdrawal behavior in the course of routine physical examinations carried out by a range of health professionals [1,15,31]. Recently, high scores on the ADBB (indicative of sustained withdrawn behavior) have been shown to be associated with sub-optimal interactive behaviors in both the mother and her infant in a Finnish study of 127 two-month-old infants [30], and with increased psychopathology in an Israeli study (the level of sustained withdrawal behavior as assessed with the scale was compared with the level of developmental risk in the same population (High/Low), and the cut-off score of 5 (or 4/5, i.e. 5 and above) yielded a sensitivity of 0.82 and a specificity of 0.78 [7]. In another Finnish study [29], scores with the ADBB were compared with scores with Murray & Fiori's Global Rating Scale in a face to face procedure. The cut off score of 5 (or 4/5) yielded gain the best specificity and sensitivity. A recent Brazilian study [9] compared ADBB scores with clinical diagnostic, and found the cut off score of 5 to give a sensitivity of 0.79 and a specificity of 0.81. The scale has demonstrated good metrological properties in a Well Baby clinic in the 14th *arrondissement* in Paris [13], and in several other countries [1,7,9,27,28,30]. The use of the ADBB scale in Well baby clinics in France has helped to screen for various conditions [14].

The aim of the present study was (1) to evaluate at 14–18 months the prevalence of relational withdrawal behaviour in children seen at the *Département des Examens Périodiques de l'Enfant* (DEPSE), and (2) to identify and verify the weight of some risk factors for relational withdrawal using a multivariate analysis. We performed a cross-sectional study, exploring links between the level of withdrawal behaviour, as assessed with the ADBB scale during a nursing assessment, and biological, biometrical, social, medical and psychological data gathered the same day in the centre.

2. Methods

2.1. Study design

The DEPSE of the *Caisse Primaire d'Assurance Maladie de Paris* (CPAM) sees infants from families on social welfare living in Paris and the *Ile de France* Region. The centre provides half-day free check-ups for infants aged 14–18 months [28,39]. Families receive a letter with the information about the centre and the check up, or baby welfare clinics may directly inform families about the centre.

We performed a cross-sectional study in one of the three DEPSE between September 2005 and July 2006. All infants aged between 14 and 18 months, plus or minus 2 weeks, were eligible for the study if their parent understood and signed written informed consent for the study and an agreement that the data could be computed. Thus on any day of the week during which one of the specifically trained nurses was present, all eligible infants whose parents could understand and sign the written consent were included in the study. The study was approved by the French Data Protection Authority.