

## CLINICAL ROUNDS IN CHILD AND ADOLESCENT MENTAL HEALTH

# The Developmental Expressions of Behavioural Dysregulation in a 25-Month old Infant Presenting with Sleep Problems: The Case of Emily

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Emily was 25 months old when she was referred by her pediatrician because of her severe sleep problems. Her parents reported that she had never been a good sleeper but during the preceding nine months she would wake up every 1-2 hours and then scream for between 45 and 60 minutes without either parent being able to calm her. As her bedtime was between nine and ten PM and she would be up by six AM, this made for short nights and insufficient sleep for Emily overall. Once or twice weekly she would “collapse” around six to seven PM and sleep until about midnight but then demand to be entertained for the rest of the night. At daycare, which she had entered at age 13 months, she sleeps for one hour during the two hour nap at noon and lies quietly in her crib for the other hour without ever crying.

Emily is the only child of her parents. However, her father has a seven year old son from a previous marriage who lives with his mother but visits Emily’s family every second weekend. Both the boy and Emily are very close and miss each other when they are apart. Both parents of Emily have jobs at the airport, mother working from two AM to 11 AM four days per week and father from midnight to 12 noon three shifts per week. When their respective shifts overlap, the maternal grandparents sleep over at their house.

The developmental history of Emily is unusual. While mother’s early part of her pregnancy was described as normal, mother was involved in a car accident while she was abroad on business during the fourth month of gestation

and hospitalized for 48 hours because of concerns about her pregnancy. As there were no serious injuries, she returned home. However, during the subsequent prenatal visits it was noted that the baby had stopped growing and also seemed to have stopped swallowing amniotic fluid, leading to a significant size and weight gain of mother. This condition persisted for two months, after which the infant began to grow again and mother’s weight gain slowed down as well. Because of this unusual episode, mother was induced at 37 weeks. However, problems occurred during this process, necessitating an emergency Caesarian section, causing extreme stress for mother. However the Apgar ratings of Emily were eight and nine respectively and her birth weight was five pounds, leading to a discharge home after five days. While Emily took a minimal amount of fluid in the hospital, she stopped taking any fluids after her discharge home, leading to a re-admission to a university associated children’s hospital where she was diagnosed as “failure to thrive” and the Feeding Disorder Team was called in to support the needed medical care. Once she was rehydrated she was transferred to the “Day Hospital”, a newly developed program within the hospital that allowed children to sleep at home but spend their days at the hospital to continue needed rehabilitation from professionals such as the Feeding Disorder Team. After two weeks, Emily was discharged home from the Day Hospital but followed closely by the Feeding Disorder team up to the age of eight months. She weighed eight kg at 12 and 11 kg at 24 months.

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During the second year of life, Emily was found to have a “sun allergy”, requiring her to avoid any direct exposure to the sun. She also was diagnosed to have a gluten intolerance. However, she passed her motor milestones at the expected ages and became an active youngster who is learning to talk and can be very charming and interested in others. She slept in her parent’s bed until her mother returned to work after six months but found it very hard to fall asleep in her new crib. Both parents dealt with that by cradling her in their arms until she was fully asleep and then placing her into her crib. They stopped this practice after her first birthday, initiating the above mentioned disorganized sleep pattern of Emily.

## Assessment and Treatment

During the initial assessment Emily came across as a curious youngster who was keen to do a simple puzzle, played with various toy animals, frequently visually checking with me for my approval. Both parents were reliable historians who appeared chronically sleep deprived and unsure how to manage Emily’s nightly behaviours. There was no history of mental disorders in their respective families. The parents realised the stressful aspects of their disjointed work schedules on Emily and were sensitive to the potential variations in Emily’s sleep patterns as shown by her sleeping through the night when they went camping together during a holiday as well as during her day care noon time naps.

Our treatment plan consisted of weekly and later on bi-weekly sessions on the one day both parents were off work, permitting Emily and both her parents being present. Initially, I introduced her to some of my toys, including simple puzzles, a doll house, various puppets, small toy cars, crayons and paper. There was also a special box, where she could keep her drawings and some special toys which could only be opened by her. Emily was a very eager player, rearranging the contents of the play, sharing her delight with her parents and me and also learning to put dolls to bed and teaching them to stay there when it was not yet morning. I would make the dolls get angry when they were not allowed to get up too early and both her and her parents finally agreed on the time the doll was allowed to get up. The parents also provided weekly sleep diaries during our sessions and these were discussed with Emily as well. Both parents quickly became great therapeutic partners by highlighting their day to day experiences with her and praising her for her hard work to control her anxious feelings.

After six treatment sessions Emily was making progress but also presented new developmental challenges. She now woke up only one time at night between one and two AM and managed to get herself back to sleep following more than half of her night wakings. She now also was able to open the door of her bedroom and when she was unsuccessful in soothing herself she got into bed with whoever adult

was with her during that night to help her fall asleep again. As there were different levels of tolerance for co-sleeping among the various adults caring for her, this potentially created new regulatory challenges. She had also become a very enthusiastic patient, remembering every smallest detail in my office already after our initial assessment. Curiously, her parents reported that about twice a week she would suddenly say my name and cry briefly. This may well have indicated the continuing delicate strength of her capacity to regulate her behaviour in response to both perceived stressful and pleasant experiences. Treatment was terminated after nine sessions and she has remained well during the subsequent year.

## Discussion

Dysregulation, which reflects difficulties in the capacity to regulate or control emotions and overall behaviours, is typically associated with later psychological impairment (Althoff et al. 2010). Poor behavioural regulation is understood to document an unsatisfactory connectivity between the brainstem and cortical brain regions associated with the modulation of affect and behaviour. Both direct biological insults to the brain, such as intellectual disability, epilepsy, birth following caesarean section and neonatal asphyxia, as well as emotional stress factors related to problematic caretaking practices have been identified as important contributors to sleep problems (Richman et al. 1982, Davis et al. 2011). More recent findings have also documented a relationship between prenatal stress and subsequent regulatory abilities up to age 36 months (Babineau et al, 2015).

Regarding the overall rate of sleep disorders, a recent Position Statement on Pediatric Sleep for Psychiatrists (Gruber et al. 2014) states that parents reported sleep disorders to occur in between 20% and 30% of three to five year old preschoolers (Mindell et al, 2006). Minde reported the overall incidence of poor sleepers in infants under three years of age to be 15% (Minde 1995). He also stated that many of them show difficulties falling asleep on their own, i.e., managing a change of state, and are placed into their cribs only after their caretakers had carried them in their arms until they were asleep. This delays their ability to learn self-soothing strategies. Yet it is of interest that some 90% of children with sleep problems at 18 months of age will have outgrown them 18 months later while 90% of children who sleep poorly at 36 months show behavioral problems at age eight (Richman et al. 1982). This suggests that sleep problems and the associated behavioural dysregulation can be an early indicator of later behaviour problems in children but that subsequent regulation supporting parenting practices allow regulatory adaptation and an absence of later psychopathology to be possible.

In the case of Emily we observe behaviours that seem to suggest a continuing dysregulatory response to physical as

well as emotional traumata in both mother and child. Thus, mother's car accident during her pregnancy was followed by a cessation of Emily's physical growth and ability to swallow amniotic fluid. This was extremely stressful for the mother but self-regulation returned after two months allowing for a five pound birth weight. The subsequent emergency C-section was necessitated by the anesthetist's disregard of mother's plea to modify the location of the epidural injection because of a previous injury to that area and resulted in so much pain by mother that a normal delivery became impossible. Mother had hoped to breastfeed her baby, however it appears that the events around the delivery had shut down Emily's drive to feed, necessitating her transfer to the Children' Hospital and a diagnosis of Failure to Thrive. After two weeks of competent medical support and treatment by the feeding experts at the Children's Hospital – for some of that time the parents could already bring Emily home for the night – Emily had recovered sufficiently to return home although her out-patient treatment for her eating difficulties continued for eight months and her present weight of 12 kg puts her only at the tenth percentile among her peers.

The next crisis occurred at six months when the parents placed her into her own bed, upsetting her established sleep and wake cycle. Given their disjointed working hours, it was never clear which parent would be present during the night, or whether it was the grandparent's turn to sleep over. Having to adapt to three caretakers during week nights may again have overtaxed Emily's regulatory abilities. The fact that she has been able to sleep for an hour after lunch at her Day Care seems to be related to the totally predictable routines at that place. One could also hypothesize that the irregular presence of her clearly very beloved step brother is also another unpredictable and hence a potentially stressful challenge to her self-regulating capacities.

## Conclusions

This case presentation suggests that clinical symptoms associated with behavioural dysregulation in infants can appear both pre- and post-natally. The symptoms in this case followed acute traumatic events of the infant's mother and interrupted or delayed expected developmental achievements. Developmentally informed interventions seemed helpful in assisting the patient to adapt and proceed in her development, highlighting the potential plasticity of behavioural dysregulation in young children.

## Acknowledgements/Conflicts of Interest

The author has no financial relationships to disclose.

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