

A SYSTEMATIC REVIEW OF THE PREVALENCE OF NOCTURNAL ENURESIS IN CHILDREN AND YOUNG PEOPLE AGED 5 -18 YEARS AND ITS SOCIAL IMPACT ON THE INDIVIDUAL AND THE FAMILY

Hypothesis / aims of study

1. To determine the prevalence of nocturnal enuresis in children and young people aged 5 – 18 years living in Europe, the USA, Australia, New Zealand and Asia.
2. To evaluate factors affecting the age at which children become dry at night.
3. To gain more understanding of the social impact of nocturnal enuresis on the individual and their family.

Study design, materials and methods

A systematic search of the literature was undertaken. The following databases were searched: MEDLINE, CINAHL, EMBASE, BNI, INI, BIDS, ASSIA and the Cochrane Library for the years 1966 - 2003 using as key words: 'nocturnal enuresis OR bed wetting AND epidemiology'. Over 1,500 relevant papers were identified from the UK, USA, Europe, Australia, New Zealand and Asia. References to other studies cited in the papers identified were followed up revealing some seminal works in this field dating back to the mid 1960s and even earlier. Where no definition of nocturnal enuresis was given or the definition was imprecise the study was excluded. Many studies failed to distinguish between primary and secondary nocturnal enuresis, or between nocturnal enuresis alone, diurnal enuresis alone and combined nocturnal and diurnal enuresis. Some important issues to consider when reviewing prevalence studies are described and the elements of good study design are highlighted.

Results

Bed wetting is a very common occurrence in younger children. The prevalence among five year olds is often quoted in the literature as 15-20% (1). However, not all five year olds are equally at risk. At this age the prevalence in boys is generally considerably higher than in girls, but this gender difference decreases significantly with increasing age. By the age of 7 years 5-10% of children are still wetting the bed frequently. The overall prevalence drops to 1-3% in the adult population but of these over 50% wet at least three times per week. These findings are congruent with a developmental typology of trajectories to night time bladder control (2). These authors have identified four broad categories: normal (84% of children); delayed acquisition, which may be transient (8.7%) or persistent (1.8%); chronic, affecting 2.6% of children up to the age of 15 years, and secondary onset or relapse, affecting 2.9% of children. There is good evidence that a family history of bed wetting is a risk factor. However, the influences of birth weight, birth order, the number of children living in the household, the family's socio-economic status, and the education level of the parents are not clear cut and these factors have been found to be significant in some studies but not in others.

Although for the most part a benign symptom of maturational delay, which will resolve spontaneously over time in most cases, the burden of nocturnal enuresis can be considerable, not only on the social and emotional well being of those who suffer with it (3) but also for their families.

There is evidence that many parents in many countries do not seek professional help and attempt to manage the situation alone, within the home.

Interpretation of results

Critically reviewing the literature has revealed considerable variations in study design, including wide variations in the way that nocturnal enuresis is defined and wide variations in the methods of investigation, including variations in the study population, the means of sampling and enrolment, and the methods of data collection. These factors make interpretation and comparison of the results of individual studies difficult.

The voluntary control of micturition is a social milestone as well as a developmental one. In different societies there are different expectations of the ages by which children should be dry, both by day and by night. However, nocturnal enuresis is a cause for concern among

many parents living as far afield as Europe, North America, Australia and Asia, and the overall prevalence remains relatively constant, irrespective of the geographical location and the diversity of methods used to study it.

Concluding message

Nocturnal enuresis is the most common chronic condition of childhood, after allergic disorders. There is evidence that its impact on families is underestimated by many professionals, yet there is now much help that can be offered including simple behavioural and pharmacological interventions and alarms. This is why it is so important to know how many children are affected, who they are and where they live, as this knowledge can have a considerable impact on service provision.

In many societies there is evidence of considerable unmet need, especially in areas of high social and economic deprivation. Understanding and acknowledging the size of the problem is a useful first step towards doing something about it.

References

- 1 A guide to the treatment of enuresis for professionals (1995) (2nd ed) Enuresis Resource and Information Centre (ERIC), Bristol, UK.
- 2 Developmental typology of trajectories to night-time bladder control: epidemiologic application of longitudinal latent class analysis (2003) Am J Epidemiol 157: 834-842.
- 3 Bedwetting, behaviour and self-esteem: a review of the literature (2001) Child Care, Health and Development 27(2): 149-162.