

Chung J M<sup>1</sup>, Lee S D<sup>2</sup>, Kim K S<sup>3</sup>, Kim S Y<sup>4</sup>, Moon D G<sup>5</sup>, Park K H<sup>6</sup>, Park Y H<sup>7</sup>, Pai K S<sup>8</sup>, Suh H J<sup>9</sup>, Lee J W<sup>10</sup>, Ha T S<sup>11</sup>, Han S W<sup>12</sup>

1. Kosin University College of Medicine, Department of Urology, Busan, Korea, 2. College of Medicine, Pusan National University, Department of Urology, Busan, Korea, 3. University of Ulsan, Asan Medical Center, Department of Urology, Seoul, Korea, 4. College of Medicine, Pusan National University, Department of Pediatrics, Busan, Korea, 5. Korea University Hospital, Department of Urology, Seoul, Korea, 6. Sungkyunkwan University Samsung Medical Center, Department of Urology, Seoul, Korea, 7. Yeungnam University Medical Center, Department of Pediatrics, Daegu, Korea, 8. Ajou University Medical Center, Department of Pediatrics, Suwon, Korea, 9. Our Lady of Mercy Hospital, The Catholic University of Korea, Department of Urology, Incheon, Korea, 10. Kangnam Sacred Heart Hospital, Hallym University, Department of Pediatrics, Seoul, Korea, 11. Chungbuk National University Hospital, Department of Pediatrics, Cheongju, Korea, 12. Yonsei University Severance Hospital, Department of Urology, Seoul, Korea

## EFFECT OF SCHOOL ENVIRONMENT ON VOIDING AND DEFECATION HABITS IN KOREAN CHILDREN 5-13 YEARS OLD: A NATIONWIDE MULTICENTER STUDY

### Hypothesis / aims of study

To evaluate the effect of school environment on voiding or defecation habits in 5-13 year old Korean children.

### Study design, materials and methods

A randomly selected cross sectional study was conducted in 53 schools on nationwide scale in Korea. The total 11,764 children aged 5-13 years were asked to complete questionnaires, which included items about the daytime voiding symptoms (DVSs), overactive bladder (OAB), nocturnal enuresis (NE) and voiding/defecation frequency at school. The school environment was investigated by number and type of a chamber pot, public use, cleanness, brightness and smell of school toilet.

### Results

The overall rate of no voiding children at school was 8.68%, and increased with the age from 4.49% to 9.66%. The common reasons for no voiding at school were dirty and bad smelling school toilet (46.76%) and feeling of inconvenience of school toilet for difference from home toilet environment (30.48%). The school environmental factors on no voiding at school toilet were type of a chamber pot ( $p=0.0001$ ), public use ( $p=0.0001$ ), cleanness ( $p=0.004$ ), brightness ( $p=0.018$ ) and smell of school toilet ( $p=0.045$ ). Risk factors on DVSs, NE and OAB were type of a chamber pot (NE;  $p=0.0001$ ), public use (DVSs, NE and OAB;  $p=0.0001$ ), cleanness (NE and OAB;  $p=0.001$  and  $0.012$ ) and brightness (DVSs, NE and OAB;  $p=0.034$ ,  $0.002$  and  $0.0001$ ). The difference of type of a chamber pot between home and school made a higher prevalence of DVSs. The overall rate of no defecating children at school was 34.9%, and increased with the age from 24.3% to 38.5%. The common reasons for no defecating at school were feeling of inconvenience of school toilet for difference from home toilet (45.73%) and dirty and bad smelling school toilet (37.87%). The school environmental factors on negative defecation habits were public use ( $p=0.026$ ), brightness ( $p=0.05$ ) and smell of school toilet ( $p=0.019$ ).

### Interpretation of results

The environmental factors of school toilet have a negative impact on voiding or defecation habits in 5-13 year old Korean children. Moreover, these factors can influence on prevalence of DVSs, NE and OAB.

### Concluding message

The environmental factors of school toilet have an important influence on voiding or defecation habits in 5-13 year old Korean children.

### References

Urology (2003) 61; 37-49.  
Neurourol Urodyn (2002) 21; 167-178.  
J Urol (2006) 176; 314-324.

<b>Specify source of funding or grant</b>	<b>No funding or other financial support was received.</b>
<b>Is this a clinical trial?</b>	<b>No</b>
<b>What were the subjects in the study?</b>	<b>HUMAN</b>
<b>Was this study approved by an ethics committee?</b>	<b>Yes</b>
<b>Specify Name of Ethics Committee</b>	<b>The Korean Enuresis Association</b>
<b>Was the Declaration of Helsinki followed?</b>	<b>Yes</b>
<b>Was informed consent obtained from the patients?</b>	<b>Yes</b>