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A COMPUTERIZED "TELE-ASSISTED" FOLLOW-UP FOR PRIMARY NOCTURNAL ENURESIS: A 6-MONTHS PILOT STUDY

Hypothesis / aims of study

Nocturnal enuresis is a chronic condition , which is often distressing for a child and their family. For a successful outcome is preferable that children understand how their bladder works and actively participate in the treatment . Rushforth (1999) suggests the most effective method of enhancing children 'understanding of their illness and enabling them to fully be a part in their treatment is appropriate information.

The use of computer is now and integral part of children's leisure time and educational software is being developed for a number of illness conditions (Bartholomew et al.2000). Learning skills through computer use can enhance children's self efficacy leading to improvements in their self-esteem.

The evidence suggests that some children who wet the bed have a low self-esteem and we hypothesized that engaging them with computer use should lead to improvements in enuresis outcome by conditioning alarm or desmopressin acetate (DDAVP).

The aims of this study were to evaluate the feasibility of a multimedial approach for the follow-up of enuretic children, the acceptance by the families, and the influence of children "teleassisted" engagement on clinical outcome.

Study design, materials and methods

The target population was all children newly referred to our enuresis clinic over 12 months. Eligible patients were >6 years old with over 20 nocturnal enuretic episodes/month, with normal urinalysis and absence of daytime wetting or LUTS. Those already on DDAVP or alarm treatment were also excluded. In all cases the following diagnostic protocol was applied: at first visit, case history, neurourological exam, explanation to child about how "bladder works", instruction to fill a volume/frequency voiding chart and to estimate maximum bladder capacity and night urine output; at second visit.: data collection, uroflowmetry, treatment assignment (DDAVP or conditioning alarm) associated with behavioral therapy and bladder retraining .

During the first visit, all the patients has been asked to taking part in the study after having verified they were regular internet user.

On this basis, standard modules as written or computerized version (floppy-disk) were administered to participants. The standard modules consisted in a "dry nights calendar" and a questionnaire, including six items about child satisfaction of treatment, parent attitudes toward the problem, family and school relationship and family members participation to fill the questionnaire. Two types of follow-up were considered: conventional follow-up by standard modules and 3-months interval visits and "tele-assisted" follow-up as children using modules on floppy-disks sent by e-mail every two weeks associated with 3-months controls. In case of tele-assisted follow-up a conventional encouragement reply was always sent to all patients.

Patients who participated to tele-assisted follow-up were compared, sex and age matched, to patients conventionally followed-up.

Following ICI criteria, to evaluate efficacy of treatment, we considered the percent of wet-nights improvement at follow-up, in comparison to wet-nights at the beginning of treatment. Patients were considered 'full responder' if they had an improvement >90% of dry-nights, "partial responder" if the improvement was 50-90%, "not responder" if children had an improvement <50% at 6-months follow-up.

Results

Out of 56 patients/families asked to participate into the study, 23 (41%) patients declared to be regular internet users. Of those, 11 (48%) children (8 male, 3 female; average 9 years, range 7-12 years) closely agreed the tele-assisted follow-up criteria and completed the study; thus, they could be compared to 11 patients (8 male, 3 female; average 8.2 years, range 6-13 years) who completed the conventional follow-up.

At 6 months follow-up, “full responder” patients were 6/11 in the tele-assisted follow-up group versus 2/11 in conventional follow-up group, while “partial responder” children were 5/11 versus 7/11 respectively and.”not responder” patients were respectively 0/11 in the tele-assisted follow-up group versus 2/11 in conventional follow-up group.

Interpretation of results

First of all, a large number of children and families declined to take part of the study being internet access available only in 41% patients/families referred to our clinics. On the other hand, the response rate for the tele-assisted follow-up was only 48%, because many children/parents started the program but subsequently were excluded because they did not email regularly. Regarding clinical outcome, more then 50% were cured in 6-months time if followed by “teleassistence” compared with less then 20% with standard follow-up. Statistical analysis is not available because of the little sample of this pilot study.

Concluding message

This is the first pilot study on the use of a tele-assisted follow-up in a group of enuretic chidren. The enthusiasm of those children and families who accepted to participate convinced us that the attention, support and reassurance inherent in participation might be beneficial for enuretic children bother.

Tele-assisted follow-up is closer than conventional and should be helpful on clinical outcome as well, giving support and encouragement.