Effectiveness of the Modified Intensive Toilet Training Method on Teaching Toilet Skills to Children with Autism

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Abstract: The purpose of this study was to determine effectiveness of a modified version of Azrin and Foxx's (1971) intensive toilet training method on teaching of toilet skills to children with autism. This method consists of administering extra fluids and a time schedule, but does not use overcorrection procedures. Implementation requires a study of six hours per day. The study was conducted with three children with autism in an educational setting and used a multiple probe design. Both inter-observer and procedural reliability data were collected. Graphical analysis was used to determine effectiveness of a modified version of Azrin and Foxx's method for teaching toilet skills to children with autism. Results of the study indicate that the modified Azrin and Foxx method was effective in teaching dryness and urinating into the toilet at acquisition level to children with autism. Parents of the research subjects were very satisfied with the results.

As defined by Turnbull, Turnbull, and Wehmeyer (2007, p. 260), "Autism is a developmental disability that significantly affects a student’s verbal and nonverbal communication, social interaction, and educational performance." The American Psychiatric Association (2000) depicts autism as inefficiency in social interaction and communication, frequently occurring with atypical body movements. However, characteristics of children with autism show many variations. These characteristics and their variations are important in determining the most effective ways of teaching children with autism.

Basic self-care abilities and independence with toilet skills are among the most important skills that children with autism should attain. According to Bettison (1982), development of such skills is the first step to being independent from one’s family, which is the individual’s first social environment. The more a person acquires abilities to meet her or his own demands, the more that person can be free from the observation of parents; therefore, parents become more independent, too.

Snell and Farlow (1993) emphasize that improving abilities of children to perform activities such as toileting and getting dressed is crucial for families. Toilet abilities are a central part of child development and are necessary for acceptance in social environments and independence (McManus, Derby, & McLaughin, 2003).

Analysis of the relevant literature makes it clear that toilet training programs are conducted within the framework of the behaviorist approach, which includes positive reinforcement and operant conditioning principles with adverse consequences (Cicero & Pfadt, 2002). Studies on this topic started in 1963 with Ellis, who published the theoretical background necessary for the toilet training of persons with mental deficiencies in that year. However, Van Wagenen, Meyerson, Kerr, and Mahoney (as cited in Cicero & Pfadt, p. 321) developed the teaching of independent toilet abilities to children, both with and without disabilities, using positive reinforcement and forward chaining procedures, which is called Van Wagenen’s method.

In 1971, Azrin and Foxx turned this theoretical background into a scientific study. Azrin and Foxx stated that their approach was “a rapid toilet training method,” also named an “intensive toilet training method” (ITTM). Their study included toilet training of persons...
with developmental disabilities within a framework of a program of positive reinforcement, punishment or over-correction, and scheduled toileting (Azrin & Foxx, 1971). Azrin and Foxx’s method differentiates usage of scheduled toileting and adverse consequences from Van Wagenen’s method (Cicero & Pfadt, 2002). In contrast to the Azrin and Foxx method (1971), Van Wagenen’s method includes clues for the child to use the toilet with the start of urinary accidents instead of the punishment method.

Adaptation studies have sought to make toilet training more effective and efficient. While some of these studies were conducted with one child (Chung, 2007; Luiselli, 1996; Post & Kirkpatrick, 2004; Ricciardi & Luiselli, 2003), others were conducted using methods of single subject design with more than one child (Cicero & Pfadt, 2002; LeBlanc, Carr, Crosset, Bennett, & Detweiler, 2005). Analysis of these studies showed that adaptations were related to decreased intensity of toilet training time (Chung; Luiselli, 1996), no extra liquid consumption (Luiselli; Post & Kirkpatrick), enforcing behavior change programs and assessing urinary incontinence as problem behavior (Ricciardi & Luiselli), not including special devices such as detectors (Chung; Post & Kirkpatrick), and accepting adverse consequences (Chung; LeBlanc et al.).

Additional studies included different methods in toilet training practice. These studies used a traditional toilet training method and ITTM. Averink, Melein, and Duker (2005) investigated effectiveness of the response restriction method on enabling diurnal bladder control and found it effective. Oorsouw, Duker, Melein, and Averink (2009) showed long-term effectiveness of the response restriction method for establishing toilet training. They made it clear that stereotypic behavior has no effect on acquiring maintenance of diurnal bladder control. Effectiveness of video modelling for the practice of toilet training was studied previously (Bainbridge & Myles, 1999; Keen, Brannigan, & Cuskelly, 2007). These studies illustrate effectiveness of this type of toilet training method. Another variant in toilet training practice involved whether or not to use diapers. Tarbox, Williams, and Friman (2004) found that using diapers increased the ratio of urinary incontinence. Similar findings were attained in the studies of Oorsouw et al. (2009).

The reasons for ITTM as the preferred toilet training practice in educational environments were stated in a report by Pfadt, Cicero, Hopkins, and Gerenser (as cited in Cicero & Pfadt, 2002, p. 321). The reasons were (a) punishing methods, (b) studies showing ineffectiveness of the over-correction method, (c) practitioners not knowing the research-based studies, and (d) changes occurring in the environment of the service given. All the obstacles mentioned here limit the possibility of applying intensive toilet training methods to students. However, since ITTM includes a time schedule, this method allows educators to save time.

Another gap in the literature is the lack of toilet training practice studies conducted with children with autistic characteristics. Williams, Oliver, Allard, and Sears (2003) stated that more than half the family members of children with autistic characteristics had problems with using the toilet and with urinary continence. Unfortunately, studies on this topic are limited. The topic of this research study grew out of the need for more studies in this area.

Most toilet training studies emphasize adaptations and effective applications. However, these studies were not analysed and investigated apart from each other, with a single application for each study, to determine their effectiveness. This study is constructed to gather information on effective applications mentioned in research reports. Furthermore, this study aims to show usage of functional reinforcement (Post & Kirkpatrick, 2004), to enable the practice without over-correction (Chung, 2007; LeBlanc et al., 2005) and without the use of special devices like detectors (Chung, 2007; Post & Kirkpatrick, 2004), to make families part of the toilet training process (LeBlanc et al., 2005), and to decrease intensity of the practice as compared to that of Azrin and Foxx (Chung, 2007; Luiselli, 1996). Apart from these adaptations and applications that are considered effective in the research reports, this practice was conducted without interrupting other educational practices.

The purpose of this study was to analyse effectiveness of a modified intensive toilet training method (MITTM) on teaching toilet
abilities to children with autistic characteristics. These research questions were addressed:
a) Is MITTM an appropriate and effective method for teaching children how to urinate by using a toilet? b) Is MITTM an appropriate and effective method for teaching children with autistic characteristics the ability to keep themselves dry? c) Is MITTM an appropriate and effective method for families to use and meet their demands?

Method

Participants

This research was conducted with participation of three children with autism. Subjects were asked to fulfil pre-condition skills, which Snell and Farlow (1993) define under three main titles. The first is that urination is performed at certain times of the day, instead of student urinating randomly. The second is that the student can hold her or his urine for an hour or two in a day. The third requires that each student be at least 2.5 years old. In addition to these pre-condition skills, students must be able to respond to basic verbal commands.

Characteristics of the study participants are as follows: Erdem was three years and ten months old. Erdem has been diagnosed with pervasive developmental disabilities by a general hospital. Mehmet was four years and eight months old. In an evaluation by a committee at a general hospital, Mehmet received a diagnosis of psychomotor developmental disability. Sevi was three years and four months old. In an evaluation at a general hospital, Sevi was diagnosed with pervasive developmental disability and atypical autism. All three subjects were diagnosed as having autism by Eskişehir Guidance Research Centre (GRC), an official diagnosing agency. GRC evaluates and performs placement of students with special needs. Since these students lacked verbal performance, they could not be given Intelligence Tests at the Eskişehir GRC or at the hospital. Similarly, the main evaluation of diagnosing these students depends on views of experts.

The average age of students in this study was 4.1 years. All students took systematic special education instruction, ranging from eight months to one year in duration. None of the students took toilet training instruction directly from teachers. The research was conducted in the group education room of the Special Education Centre and in a bathroom located across the hall from the education room.

Design

This research was an experimental study which was conducted with a multiple probe design using probe sessions across subjects, one of the single subject design techniques. The independent variable was the adaptation of intensive toilet training that was developed by Azrin and Foxx (1971). The procedure was different than the intensive toilet training of Azrin and Foxx. It didn’t include the three components of the original method. The modifications were: (a) The duration of the procedure was six hours, not eight hours; (b) not using a device to detect urination; (c) not using the over-correction process. In addition to these, this procedure didn’t include decreasing the time the student spends sitting on toilet and increasing the time the student spends when he/she is away from the toilet. During this study, the time of sitting on the toilet was set at 10 minutes. Similarly, the time of staying dry was set at 30 minutes. However, parallel to the procedures of Azrin and Foxx, when urination occurs, without waiting for the full 10 minutes the student is taken off the toilet and taken to the activity room. The reason why the times were set is that the objective of this study was limited to the acquisition stage of learning.

The target behaviour of this research was, after the instruction “go to the toilet” was given, the student sits on the toilet and urinates, without wetting him or herself. There were two dependent variables; (1) the student urinates, sitting on the toilet, and (2) the student is dry when he is not on the toilet.

Data Collection

Data collection procedure includes baseline data, probe data, training data and inter-observer reliability data. These data are collected with a Baseline Recording Form (BRF). Intensive teaching sessions data are collected with an Intensive Teaching Recording Form (ITRF). Inter-observer reliability data, applica-
tion reliability data and house training data are collected with recording forms, each of which is designed according to the specific data. The baseline data and training data are collected by the researcher. Home instruction (in-home urination training) after intensive training sessions is collected by the parents of the student with the Post Intensive Training Sessions Home Training (PITSHT) Data Record Form. Whereas the main encoder in collecting the data of reliability is the researcher, the real encoders are the two graduate students whose area is special education and two teachers who are educated in this area.

The rate of the student’s urinating in the toilet is calculated by dividing the number of times the student urinates in the toilet during a session into the total number of visits to the toilet, multiplied by 100. The rate of wetting oneself is calculated by dividing the number of times the student wets himself, into the total number of visits to the toilet, multiplied by 100. While collecting the beginning level data, the time chart is divided into two parts, the first of which is where the fifty-minute dryness is measured and the second of which is the ten-minute part, where the student’s ability to urinate in the toilet is measured. If the student stays dry when the dryness is calculated, he is given “0” point, if he doesn’t stay dry, he is given “1” point. If he urinates in the toilet/chamber pot when the ability to urinate is measured, he is given “1” point, if he doesn’t urinate, he is given “0” points. The 30 minutes when student dryness is measured in the intensive training sessions is split into 10-minute-parts. If the student stays dry in these parts, he is coded with an “r,” standing for the fact that the student has been given “reinforcement.” If the student doesn’t stay dry during these parts, a “1” is written under the part when he wets himself. Whereas the situation where the student urinates in the toilet/chamber pot is given “1” point, the situation where he doesn’t do so is given “0” point.

After intensive training, the marking training done during the beginning level is applied in the house training.

**Procedure**

It is best to examine the training process on the basis of three processes. First, the reinforcements that will be used in the cases where the students will perform the target behaviours in the training and the baseline data are collected. Second, arrangements which will be actualised during teaching are planned. In-class activities during teaching are provided and chosen among the ability and education of concept training which will be defined in advance and should be among the student’s IEP program. This will ensure that the student will not fall behind in his or her education studies during the toilet training process. The third process is intensive toilet training and house training. Intensive toilet training is applied as mentioned before. The house training is the applications that are done by the parents at home after teaching. The researcher has given information about this subject to the families after the education of the student has started.

**Preparation to Education and Beginning Level**

At the beginning of the training process the reinforcements that were used in teaching the student and the beginning level data were collected. In this study, there were two different reinforcements. The first one was social reinforcements and the second was food reinforcements. Social reinforcements were chosen among the ones that were defined by the family. There was no systematic evaluation for choosing the reinforcements. The food reinforcements were defined by a three-phase evaluation process. In the first phase, a person whom the student was in a good relationship with -this might be a member of the family or the assistant- was asked to define the food the student loved most. In the second phase, these defined reinforcements were exposed to the student’s preference. In the last phase, the student was asked to put the reinforcements in an order from the most loved to the least.

The collection of baseline data started at 8:30 am and finished at 3:10 pm. At the beginning level, it was planned to be 10 minutes between each student’s training sessions. With this arrangement, while the researcher was conducting the training on the toilet with a student, the other students did other activities in the activity room where the dryness was checked. When the students arrived at the special education centre and when they left...
the centre, their clothes were changed in the activity room by the assistant. During this study, the student didn’t wear any diapers. Students spent fifty minutes with games and educational activities in the group activity room. If the students wetted themselves during this stage, this situation was recorded on “BRF.” As soon as the dryness was checked, the student was taken to the toilet room by the researcher. If the student insisted on not going to the toilet, the researcher physically took the student to the toilet room. After the researcher took the student to the toilet room, he took off student’s pants and helped him sit on the toilet. If the student got up from the toilet, the researcher didn’t force him to sit again. The researcher didn’t show any behaviours that might appear as a reinforcement, such as smiling, being angry or talking to him. If the student didn’t want to stay on the toilet, he was prevented by the researcher from leaving the toilet room. He was kept waiting in the toilet room for 10 minutes. If the student used the toilet/chamber pot, he was given the social reinforcement defined by his/her family.

At the beginning level, a day was defined as a session and a session consisted of six tries. One try included a 50-minute-dryness time and a 10-minute-toilet study. The student who wet himself was cleaned in another room and his clothes were changed. By doing so, other students were prevented from seeing this situation. While the student was being cleaned and his clothes were being changed, no gestures, mimics or verbal expressions that might give either a positive or a negative reinforcement were made. The student was not punished or given any reinforcement during the session.

There are some procedures that routinely take place at the end of the teaching sessions and before the teaching sessions start. Before starting the procedure and after the procedure, the clothes of the students were changed at the beginning level. The teaching period ended with toilet training. Thus, until the students would reach their homes, any kind of wetting themselves on the way home was tried to be prevented. The families whose children finished the procedures were all asked not to put diapers on the child during the day but only during the nights. All of the parents were notified that this was a necessity to obey this rule.

**Education Phase**

This phase requires a time chart. It includes eight trials in which each trial is 30 minutes long. At the end of the trial the researcher checks the student for dryness. This phase included a time chart consisting of eight tries, 30 minutes of which included a phase where the dryness was checked and 10 minutes of which included a phase where the toilet training was done after the 30-minute-part. Each day was defined as a session and each session included eight tries. At the beginning level, the student showing stable data was passed to the intensive toilet education. The student was exposed to an intensive education from 9:00 in the morning to 2:40 in the afternoon and the training continued during the weekends. In order to serve the students lunch, there was a break from 11:40 am to 12:00 pm.

Due to the nature of the research, two different training processes were used: (1) the training process that takes place when the student doesn’t wet himself during 30 minute part in which dryness is checked and (2) the training process that takes place when the student wets himself during 30 minute part in which dryness is checked. If the student doesn’t have any urinary accidents during the 30-minute-parts in which dryness is checked, these steps are done:

1. When the trial process started, during the time defined for the reinforcement, the drink chosen for the student was given to the student (not more than two glasses of water). However, the student was not forced to drink.
2. Dryness of the student was checked by the applicant every 10 minutes in the 30-minute-part with the verbal expression “Let’s see, are you dry?”
3. On each check, if the student didn’t wet himself, he was given the social reinforcement defined by his/her family.
4. If the student didn’t wet himself on every check, he was reinforced with food that was preferred in the second phase of defining reinforcements process.
5. In the classroom, educational activities
were done with the student for 30 minutes.
6. After the 30 minutes in the classroom, the instruction, "To the toilet", was given.
7. The student was taken to the toilet with someone holding his hand, if he resisted, physically.
8. The pants were taken off by the applicant.
9. The student was made to sit on the toilet with physical help.
10. If the student wanted to get up from the toilet/chamber pot, he was prevented by the applicant and he was made to sit on the toilet/chamber pot.
11. The student was allowed to interact with the toy which was defined in reinforcement defining process as long as he sat on the toilet.
12. If the student urinated on the toilet/chamber pot, he was given the reinforcement defined by his/her family.
13. If the student urinated on the toilet/chamber pot, he was given the reinforcement that was preferred in the first phase of the reinforcement defining process.
14. When the student urinated, he was made to get up from the toilet/chamber pot without waiting for 10 minutes to end.
15. If the student urinated on the toilet/chamber pot earlier, he was allowed to interact with the toy, which was defined in the reinforcement defining process, in the classroom environment in the way he wanted for 10 minutes of the 30 minutes when he was supposed to sit on the toilet.
16. If the student didn’t urinate on the chamber pot/toilet, the in-class educational studies continued.

If the student wets himself/herself during 30-minute period in which the dryness is checked, these steps are added to the trials apart from the ones above:

1. If the student wetted himself, the cleaning of the student was done with the least care, which wasn’t any reward or punishment.
2. If the student was playing with the toy when he wetted himself, his toy was taken away from him, stating that "You are not dry" and educational studies continued.
3. No verbal expressions were used indicating the student wetted himself.
4. Mimics and jests like being angry or joking related to student’s wetting himself were not used.
5. The student wasn’t given any reinforcement during the first 10 minutes when he wetted himself, however, if the student was dry, for the next 10-minute periods, he was given reinforcements.

The criteria to end the training was defined as reaching a ratio of 80% or more for urinating in the toilet successfully in three sessions and a ratio of 30% or less for wetting oneself in the same three sessions.

After-Education Home Trainings

After intensive toilet training, parents can negatively respond to students about wetting him or herself in home since they weren’t permitted to put on diapers. Therefore, the main objectives of home-training process after intensive toilet training applications are to minimize the effect of this situation on the student’s learning performance, to prepare the toilet training conditions for the student and to minimize the student’s wetting ratio in home.

The families are asked to take the students right to their houses as soon as the intensive toilet training finished. Twenty minutes after the intensive toilet training finishes, the two-hour-trial time starts. During this trial time, the student isn’t taken to the toilet for 1 hour and 50 minutes and 1 hour 50 minutes later, the student is taken to the toilet. The family is asked to give the instruction, “Let’s go to the toilet” before taking the students to the toilet and the family is asked to hold the student by the hand. If the student doesn’t want to go to the toilet, it is stated that the student mustn’t be forced to go by the family. After the student enters the toilet, the pants of the student are taken off by the family and he is made to sit on the chamber pot/toilet. It is stated by the applicant that the student shouldn’t be forced to sit back if the student gets up from the chamber pot/toilet. If the student urinates on the chamber pot/toilet, it is wanted that the student should be given social reinforcement by the family. In addition to these, during the time the student is in the toilet, the family is asked not to give reinforcements for any rea-
son, or give any positive or negative reactions. Similarly, if the student wets himself, the family are asked to obey the wish of the applicant. The families were asked to record the wetting and urinating on the toilet on the “Post Intensive Training Sessions Home-Training Data Recording Form.”

Inter-Observer Reliability and Application Reliability

Independent observers collected inter-observer reliability data, by attending 33.3% of all of the sessions. Inter-Observer Reliability was calculated with the data of the researcher and independent observers: “View Unity/View Unity + View Variance × 100” (Richards, Taylor, Ramasamy & Richards, 1998). On the beginning level and probe sessions, inter-observer reliability was found to be 100% for all of the students and in the training sessions 100% for all of the students.

To evaluate the application reliability data, Billingsley, White and Munson developed this formula (as cited by Tekin-Iftar & Kircaali-Iftar, 2006, p. 67): “Number of Behaviours Appropriate to the Plan × 100/short-acting anticholinergics (%) Total Number of Behaviours that Define Reactions Appropriate to the Plan.” When the data collected by the independent observers on the training level were calculated, the application reliability for each student was like this: For Mehmet, 94.28%; for Sevi, 98.95%; for Erdem, 99.62%.

Results

In this research, the data collected during training are analysed graphically. In the analysis of the data, linear graphic technique, one of the graphical analysis techniques, was used. The data were analysed with two different figures because this research included two dependent variables, urinating in the toilet and staying dry.

As seen in Figure 1, while Mehmet could not fulfil the ability to urinate in the toilet at all at the beginning level, on the third session of these educational studies for this ability, he fulfilled his ability at the level of 87.5% and in the sixth session he came to a point to correspond to the criteria. According to these results, it can be said that in the studies done with Mehmet, MITTM is effective in teaching him the ability to urinate in the toilet. In the graphic in Figure 2, when the PITSHT data are examined, it is seen that Mehmet showed a progress in his ability to urinate in the toilet at home and after third application session, he reached 100% rate of urinating in the toilet.

As seen in Figure 1, while Sevi could not fulfil the ability to urinate in the toilet at all at the beginning level, on the fifth session of these educational studies, she fulfilled her ability at the level of 87.5% and in the seventh session, she corresponded to the criteria. According to these results, it can be stated that in the studies done with Sevi, MITTM is effective in teaching her ability to urinate in the toilet. Since Sevi’s family didn’t obey the rules of PITSHT, no meaningful data could be collected on this subject.

As seen in Figure 1, while Erdem could not fulfil the ability to urinate in the toilet at all at the beginning level, on the third session of these educational studies, he fulfilled his ability at the level of 100% but on the fifth session, he met criteria of the research. According to these results, it can be stated that in the studies done with Erdem, MITTM is effective in teaching the ability to urinate in the toilet. In the graphic in Figure 3, when the data of PITSHT are examined, it is seen that during the training process, Erdem showed a progress in his ability to urinate in the toilet at home and that in the second session, he reached the 100% rate of urinating in the toilet. It is also seen that the student kept this rate until the end of the training.

The data collected in the research show that the students with autistic characteristics cannot fulfil the ability to urinate in the toilet at the beginning level, that there is an improvement in this ability with the usage of MITTM, and that the students with autistic characteristics fulfil this ability in accordance with the objectives of research.

As can be seen in the graphic in Figure 4, whereas at the beginning level, Mehmet’s rates of wetting his underclothes were 66.6%, at the end of the training, in the fourth session, this rate declined to 25%. Thus, Mehmet could correspond to the necessary criteria of the research in the sixth session. According to these results, it can be said that in the studies
done with Mehmet, MITTM is effective in teaching the ability not to wet one’s underclothes/to stay dry. In the graphic in Figure 5, when the data of PITSHT are examined, it is seen that after the fourth session, in the home-training, Mehmet didn’t wet his underclothes. In the sixth training session, the rate of urinating in the toilet at home decreased to 75% but no increase was observed in the rates of wetting one’s underclothes.
As seen in the graphic in Figure 4, while at the beginning level, Sevi’s rate of wetting herself was 33.3%. At the end of the training, in the third session, this rate declined to 25%. Sevi finally corresponded to the criteria of the research in the seventh session. According to these results, for the studies done with Sevi, it can be said that MITTM is effective in teaching the ability not to wet oneself/to stay dry. Sevi’s family didn’t fulfill the requirements of PITSHT. Therefore, data about this subject could not be reached.

As seen in the graphic in Figure 4, while at the beginning level, Erdem’s rates of wetting himself was 50%. At the end of the training, in the third session, this rate declined to 12.5%. So Erdem could finally correspond to the criteria of the research in the fifth session. According to these results, for the studies done with Erdem, it can be said that MITTM is effective in teaching the ability not to wet oneself/to stay dry. In the graphic in Figure 6, when the data of PITSHT are examined, it is seen that after the third session of Home-Training, Erdem’s rates of wetting himself declined to 33% and that it has been stable at this rate.

The data collected within the research show that the students with autistic characteristics cannot fulfil the ability not to wet oneself/to stay dry at the beginning level. After the usage of MITTM during the teaching process, the students with autistic characteristics fulfil these abilities in accordance with the objectives of the research.

As seen in Table 1, there are 144 trials over eight complete sessions for the training in the research. In these trials, whereas there were 43 situations totally in which the students wet themselves, there were 109 situations totally in which the students urinated in the toilet. For Mehmet, to correspond to the criteria of the research, there were 48 tries over six complete sessions. In these tries, there were 38 cases where the student urinated in the toilet while there were 17 cases where the student wetted himself. For Sevi to correspond to the criteria of the research, there were 56 trial applications over seven complete sessions.

In these trials, there were 14 cases in which the student wetted herself while there were 37 cases where the student successfully urinated in the toilet. For Erdem to correspond to the criteria of the research there were 40 trial trainings over five complete sessions. In these trials, there were 12 cases in total in which the student actually wetted himself whereas there were 34 cases in total in which the student successfully urinated in the toilet. In evaluating these data, it must be kept in mind that within a trial process for a student, both cases of wetting oneself and urinating in the toilet can be observed.

At the end of this research, the validity of the research was examined by consulting the students’ families who attended the research and interviewed their opinions about the research and its results. All families who attended to the research stated that they were happy to have participated in the research. Except for Mehmet’s family, other families stated that their expectations were thoroughly satisfied. Mehmet’s family stated that their expectations were not satisfied in a great scale and as an excuse; they stated that the research didn’t include the bowel control.

Discussion

In this research, with the adaptation of Intensive Toilet Training Method which was developed by Azrin and Foxx (1971), it was exam-
ined how this method could be effective in teaching students who carry autistic characteristics the abilities to stay dry and to urinate in the toilet at the acquisition level. The results showed that the adapted intensive toilet training technique was indeed effective in teaching the students with autistic characteristics the abilities to urinate in the toilet and to stay dry.

Figure 4. Rates of Wetting Oneself for Mehmet, Sevi, and Erdem
on the acquisition level. When the data collected during the teaching process were examined, it was seen that the students with autistic characteristics learnt these abilities in a short period of time.

These results show a coherence with the other research results which were also found in literature. Azrin and Foxx (1971) found that the Intensive Toilet training (ITTM) was effective in teaching the ability to stay dry and to urinate in the toilet during the day in a research in which they applied it to nine adults with mental disabilities. In addition to this, Azrin and Foxx stated that this method was effective in defecation control and that no other method was needed. During the training process, it was observed that Erdem and Sevi defecated in the chamber pot a couple of times and similar observations were reported to the researcher by the students’ families.

The results of this research are also consistent with the research results which included the time charts that was used by Azrin and Foxx (1971) during Intensive Toilet Training Method and that was conducted by Cicero and Pfadt (2002) on three individuals with autism and that included model of Van Wagenen’s process of disposing the behaviour of going to toilet with clues without the over-correction process. In this adapted training studies, Cicero and Pfadt showed that the ITTM could be effective without including over-correction process. In addition to this, they defined the criteria of the research as never wetting oneself in the research, they stated that correspondence to the criteria was a success (Cicero & Pfadt, 2007). It is clearly seen that both Mehmet and Erdem reached the rate of 0% for wetting themselves in examining the research results of examination sessions without the over-correction process as Cicero and Pfadt mentioned. These results are in coherence with the results of the study that was carried out by Cicero and Pfadt. However, the results of Sevi are not consistent with this situation. In her last examination session, it was seen that she had a rate of 12.5% of wetting herself, which was the same as the rate observed in other examination sessions. The reason for this situation can be explained by the fact that Sevi’s family did not follow the time chart in Home-Training. Therefore, the data of PITSHT could only be collected on two students. Therefore, it is difficult to make an evaluation about these data.

The adapted Intensive Toilet Training Method that was used in this research ended with the fact that the students would gain the ability by this technique in six sessions (days) on an average and each session ought to include a 6-hour-intensive-training. In the research, which was carried out by Azrin and Foxx (1971), the acquisition time for the abilities were a 4-day-length time of education and eight hours a day for studying. In the research, carried out by Cicero and Pfadt (2002), this was an 11-day-length of time of education and approximately 5.5 hours a day for studying. When the data are examined according to
these results, the results of this research were consistent with the research results in the literature. The studying hours of this research are less than the one carried out by Azrin and Foxx and more than the one carried out by Cicero and Pfadt. Because of this, the time required for the acquisition of these abilities are in between the two studies (on an average 6 sessions/days). However, there is a point that shouldn’t be missed; the objectives of the research that were carried out by Cicero and Pfadt are different from the objectives of this research. In the research carried out by Cicero and Pfadt, the self-demand of the students to go to toilet by themselves was an expectation. Thus, the fact that the acquisition time of these abilities might be longer can be accepted as ordinary. In this research the self-demand of students to go to toilet by themselves is not an objective. However, the students’ families stated that both during social validity studies and during training, Sevi and Erdem developed this ability.

The study carried out by Post and Kirkpatrick (2004) about a child with pervasive developmental disorder is different from this research because the former didn’t include the increase in taking liquid systematically and in the former, the child kept using his/her diapers. However, both studies are similar because they don’t use sensors to prove the act of urinating in the toilet and they don’t include over-correction method. Post and Kirkpatrick found that the method they were using was effective without increasing the liquid intake. The research report of Post and Kirkpatrick didn’t include any data related to the time that the student took to achieve the acquisition level. However, when the graphic of the research was examined and when the training, first stage of research process, was accepted as acquisition stages of 30-minute-long staying dry and 20-minute-long sitting in the toilet, the number of sessions that the students needed to acquire the abilities were seven sessions/days. In these sessions, the study hours were defined to be 8–10 hours. In accordance with these data, when the results of these two studies are examined, it can be said that the times required for acquisition are different from each other. This situation shows that the time needed to acquire these abilities can be shortened as a result of making the increased liquid intake a component of the research.

This research is also consistent with the results of the research carried out by LeBlanc et al. (2005) with three students who show autistic characteristics. The research carried out by LeBlanc et al. is similar to this research in terms of the fact that it includes time chart for going to the toilet and sitting on the toilet, the increase in the liquid intake, and the applications of reinforcements. However, the research of LeBlanc et al. is different from this research in terms of the fact that it includes urination sensors and alarms, positive application for wetting one’s underclothes and the desire to go to toilet automatically. The results of this research differentiate from those of carried out by LeBlanc et al. in terms of the fact that it doesn’t include urination sensors and alarms and positive applications as much as the one carried out by LeBlanc et al. The time required for acquisition is not defined. Therefore, a comparison couldn’t be made.

The training method that Chung (2007) carried out with a 12-year-old student who had developmental deficiency overlapped with the method of this research. Chung found at the end of the research that the adapted method of Azrin and Foxx (1971) was effective. Chung stated that over-correction process had no effect in increasing the number of times urinated in the toilet whereas it would be an effective method in decreasing the rates of wetting one’s underclothes. Similar findings can be expressed for the results of this research. The fact that the students’ rates of wetting themselves are consistent with literature may be stemming from the fact that nearly all of the researches don’t include any kinds of over-correction processes. In the research carried out by LeBlanc et al. (2005), it must be kept in mind that the usage of positive application method for wetting one’s underclothes could be a more effective method in decreasing the student’s rates of wetting themselves.

The results of this research don’t have the rates of wetting oneself which were found in the research carried out by Chung (2007). In this research, the time of acquisition for the abilities is less than the one conducted by Chung. This situation may stem from the fact that the characteristics of the students are dif-
When the research results are examined by the students, it is seen that the third subject, Erdem, could acquire the abilities in a shorter time when compared to other students. This situation may make us think that an effect of lining may have occurred. However, during the training, Erdem was observed to be very disturbed by being wet. This situation may have helped Erdem acquire these abilities before the other students did.

The research findings show that the method of Azrin and Foxx (1971) adapted for the students that show autistic characteristics can be applied effectively in educational environments and without delaying the educational studies much. In the light of these data, this method can be used effectively in teaching the toilet abilities in educational environments.

Findings collected in this research show that the MITTM is effective in teaching the abilities to stay dry and to urinate in the toilet to the students that show autistic characteristics and these findings are in coherence with other researches in the literature. However, while evaluating the results of the research, the restrictions of the research should be kept in mind. These restrictions can be outlined as: First, after intensive training sessions, the families are asked to record their children’s time of staying dry and asked to take them to the toilet every 110 minutes. Because the researcher had to work during these trainings, he couldn’t go to students’ houses and couldn’t observe these trainings. The results of the research are restricted in this way. Second, this research evaluates the students’ abilities to stay dry and to urinate in the toilet at the acquisition level. The results of the research don’t show any implications of what kind of findings could be found in follow-up studies are done and the time of staying dry is made longer. In this case, the research has limited information in terms of the acquisition permanence created by the method used. It is also effective in generalizing the acquired abilities to any environments. Third, the data of PITSHT are not complete because one of the student’s family (Sevi) didn’t stick to the time chart which was needed to collect data.

The research results are not complete on this topic as well.

In the light of these findings, the following can be offered: In order to increase the generalization of the findings collected in the research, the same research can be carried out from the beginning for different subjects with different characteristics, in different environments and by different applicants. Moreover, a follow-up studies about these acquired skills might be give more satisfying information about the effectiveness of MITTM. In accordance with this, planning of the research can be advantageous to the special education literature. Other research could evaluate the effectiveness of the applying educational objectives in 30-minute-periods saved for the check of dryness and to check whether MITT trainings could provide healthy conditions for education or not. Thus, some scientific support can be provided for the applicability of the effectiveness-proven technique in educational environments without interrupting the education process.

This research can be broadened to include independent toilet skills and findings to be achieved by systematizing PITSHT to serve the objectives of this research. Finally, to broaden MITTM to include the skill of announcing the participant’s own desire to use the toilet by himself/herself and to add newer techniques to support it to training method would contribute to Special Education literature.

As a result of the findings achieved in this research, these suggestions can be made towards training: a) MITTM, of which its effectiveness was proven by this research, can be used in Special Education Centres and schools, at homes by parents or the assistants and in other institutions by educators, b) in this research, in order to protect both internal and external validity, many variants had to be taken under control and due to this situation, it took more time to conduct the research than planned. In application environments, this method can be used with less effort and time because such requirements will not have to be taken into consideration.

References


Received: 28 August 2012
Initial Acceptance: 30 October 2012
Final Acceptance: 7 February 2013