

The Effectiveness of Family-Centered Teaching in Developing Self-Care Skills for Children with Autism Spectrum Disorder¹

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Abstract

Teaching of self-care skills with the participation of families at home, which is the natural environment of the child, contributes to effective and permanent results. Even though it is preferred that the family take an active part in teaching, most parents who plan to work with their children have difficulties in how they teach. The previous studies demonstrate that when adequate support is provided to parents, they can teach their children the skills they need. This study aimed to investigate the effectiveness of a family education program developed for teaching self-care skills to individuals with autism spectrum disorder. A mother and her child with autism spectrum disorder participated in the study. The study was designed with multiple probe with probe conditions across behaviors/skills which is one of the single subject research designs. The finding demonstrates that the mother was able to teach self-care skills (hand washing, toileting, and dressing) by using the least to most prompting teaching method and following the procedure properly during the teaching period. Additionally, the mother expressed her satisfaction with the teaching sessions. The results concluded that she realized the effect and importance of the systematic and planned teaching.

Keywords: autism spectrum disorder, self-care skills, family education, least-to-most prompting, family-centered teaching.

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Introduction

Autism spectrum disorder (ASD) is a neurological disorder accompanied limited interests and repetitive behaviors and negatively affects the communication and social interaction of the individual (American Psychiatric Association [APA], Diagnostic and Statistical Manual of Mental Disorders-5 [DSM-V], 2013). The main purpose in the education of individuals with ASD is to enable them to lead their life independently or with minimal support and to increase their adaptation to social life. For this purpose, it is essential to support the development of individuals with ASD by using strategies and techniques in their intervention programs that aim to meet their needs in areas where they have deficiencies (Ardic & Cavkaytar., 2014). As in every individual, the first step of independence is taken by meeting the most basic needs necessary for daily life by the individuals themselves. Acquiring the skills that are essential for daily life not only provides a successful and quality life for individuals but also creates a positive effect on the life of those around these individuals (Cannella-Malone et al., 2006; Keen et al., 2010; Minjarez et al., 2013).

Many of these skills, which have an impact on the quality of daily life (eg., feeding, using the toilet, bathing, and dressing), usually develop spontaneously by observing and modeling adults' behavior using cognitive skills (Spriggs et al., 2017). Individuals with ASD may have difficulties in learning and generalizing skills that include the needs of daily life, as in most academic and social skills. The findings of the studies show that individuals with ASD have difficulties in performing self-care skills (Eaves & Ho, 2008; Flynn & Healy, 2012; LaVesser & Berg, 2011) and that the limitations in the development of these skills make it difficult to participate in a social and working life (Farley et al., 2009; Kellems et al., 2018). Therefore, it is necessary to start the education of individuals with ASD as early as possible and support their individual needs with the most appropriate educational opportunities.

Research on ASD condenses family education as beneficial for children with ASD to gain independent living skills (Black et al., 2018). Effective and permanent results can be achieved for these children when parents can provide systematic instruction to their children and apply it properly (Cruz-Torres et al., 2020; Kellems et al., 2018; Vismara et al., 2009). This not only contributes positively to the development of the children, but also increases the participation of family members in daily activities and reduces stress (Keen et al., 2010; Minjarez et al., 2013). However, most parents who plan to work with their children have difficulties knowing how to teach (McConachie & Diggle, 2007). To gain more effective results, families should have knowledge of planned, systematic, and scientifically based interventions to use in the education of children with ASD (Cruz-Torres et al., 2020; Kellems et al., 2018). The findings of the studies demonstrate that when adequate support is provided to parents, they can teach their children the skills they need. Although skills differ, there are many studies showing family members can become active members of the education when effective support is provided (Elisa et al., 2019; Hancock et al., 2002; Kaiser et al., 2000; Najdowski et al., 2010; Stiebel, 1999).

Parents' involvement in the process of gaining self-care skills for their children is preferable. Because, teaching these skills with the participation of families at home, which is the natural environment of the child, is more appropriate (Bettison, 1982). However, the needs of families of children with ASD show that families require assistance in taking an active part in their children's education (Dunst & Espe-Sherwindt, 2016). The differentiation of the needs and learning methods of individuals with special needs necessitates disseminating family education programs by conducting studies that include different examples in family education. The realization of family-centered teaching practices based on needs of families constitutes an important reason for this study. Accordingly, this research stemmed from a mother's need to teach her child self-care skills and examined whether the mother was able to teach her child and the effects of her teaching on the child.

Based on this need, the aim of the study was to determine the effect of the teaching practices carried out by a mother who participated in the family education program adapted from Cavkaytar (1999). The family education program includes teaching self-care skills by using the least to most prompting procedure. Accordingly, answers to the following questions were sought in this study:

1. Is the program effective on the mother's level of knowledge about skill teaching?
2. Is the teaching provided by the mother to her child with ASD effective in learning the determined self-care skills?
3. What are the views of the mother about the family education program and the implementation process?

Method

Participants

The child who was an 11-year-old boy with ASD and his 41-year-old mother participated in the study. Some criteria were taken into consideration in determining the participants. The criteria for the determination of the parent: (a) Having a child with ASD, (b) Having a need to improve in self-care skills of the child, (c) Being literate enough to understand the family education program, (d) Being willing to participate in the family education program, (e) Signing the prepared consent form. The criteria for the determination of the child: (a) Not being able to fulfill at least six self-care skills, (b) Not having a physical disability that would prevent the learning of skills, (c) Having a receptive language at a level to understand and fulfill the instructions.

In line with these criteria the Snowball Technique was used to determine the child and the mother who participated in the Teaching of Self-Care Skills Family Education Program (SCS-FEP). Adhering to the snowball technique, the study was announced to the parents through the special education teachers and Guidance and Research Center. Parents were also asked to convey the study to

other parents. As a result of the announcements, interviews were held with parents who volunteered to participate in the study. A mother and her child with ASD who fully met the participant criteria was selected and the mother was very willing to participate in the program. The content of the program was explained to the mother, and she was asked to read and sign the participant consent form. The characteristics of the mother and her child are given below.

Mother was 41 years old and had a high school degree. After working for many years, she ended her work life due to the care and education of her son. She had been attending a sewing course supported by Public Education Center within her child's school. Therefore, she was at school full-time during school hours. The mother had not participated in any family education program before.

The child was a 11-year-old boy diagnosed with ASD. He was continuing to the 5th grade in a special education practice school affiliated with the Ministry of National Education. He has good receptive language skills but uses alternative communication in expressive language. He had the ability to imitate and can follow instructions. He enjoys participating in simple game activities (e.g., throwing/shooting the ball) with his peers and can interact in the game environment. A large part of self-care and daily living skills needed to be developed.

Settings and Materials

The family education sessions in the Family Education Program were held in three different environments, depending on the mother's preference and availability: at home, at school, and at the sewing course room. For the family training sessions, a "Self-Care Skills Teaching Hand Manual (SCS-THM)" was developed. SCS-THM (30-page) It was adapted from the program developed by Cavkaytar (1999). Additionally, the tools and equipment such as plates, forks, spoons, food, clothes were used for studying daily living skills with the mother in family training sessions.

After completing the family training sessions with the mother, the skill teaching done by the mother was carried out in the family's home environment. During the teaching sessions, the bathroom of the house was used for hand washing and toileting skills. The bathroom, which was an average size of 10 m², contained a toilet, sink, shower cabin, washer, bathroom rug and other materials required for teaching (hand towel, soap, toilet paper, etc.). Dressing skill teaching was held in the child's own room which contains a bed, closet, toys, and a medium-sized carpet. Elastic waist and wide cut sweatpants were preferred in teaching the skill of wearing pants.

Ethical Procedures

The research was carried out with the date of March 3, 2019, and the number of 21572 Anadolu University University Ethics Committee Approval. Ethical principles, such as volunteering and

confidentiality, were adopted for the participants. These ethical principles were included in the consent form and shared with the mother.

Research Design

The study was designed with a multiple probe with probe conditions across behaviors/skills, which is one of the single case research methods. Three dependent variables (three behaviors/skills) are determined according to multiple probe with probe conditions across behaviors/skills model. In this model the baseline data of all three skills are taken simultaneously and when stable data was obtained in the first skill, the first skill teaching was carried out. When the achievement criterion of the skill was reached during the teaching, all skills were measured. After the stable baseline data for the second skill were provided, the teaching of the second skill was implemented. This process was repeated in the same way until the third skill teaching was completed (Horner & Baer, 1978; Ledford, 2018). To visualize the data and monitor the process more easily, the obtained data was illustrated in graphics.

The independent variable of the study was the instruction of the mother which was the Self-Care Skills Teaching Family Education Program developed for this study. The dependent variable was the ability of the child with ASD to fulfill the target self-care skills taught to him by his mother within the program.

Teaching of Self-Care Skills Family Education Program (SCS-FEP)

SCS-FEP is a program designed to provide parents with the knowledge and skills they need to teach self-care skills to their children with ASD and to support the parents' teaching competencies. SCS-FEP is a home-centered family education program based on the approach that considers parents as teachers. SCS-FEP consists of two phases: (1) family training sessions, (2) skill training sessions for children held by the family. Figure 1 illustrates the stages of the program in a general framework.

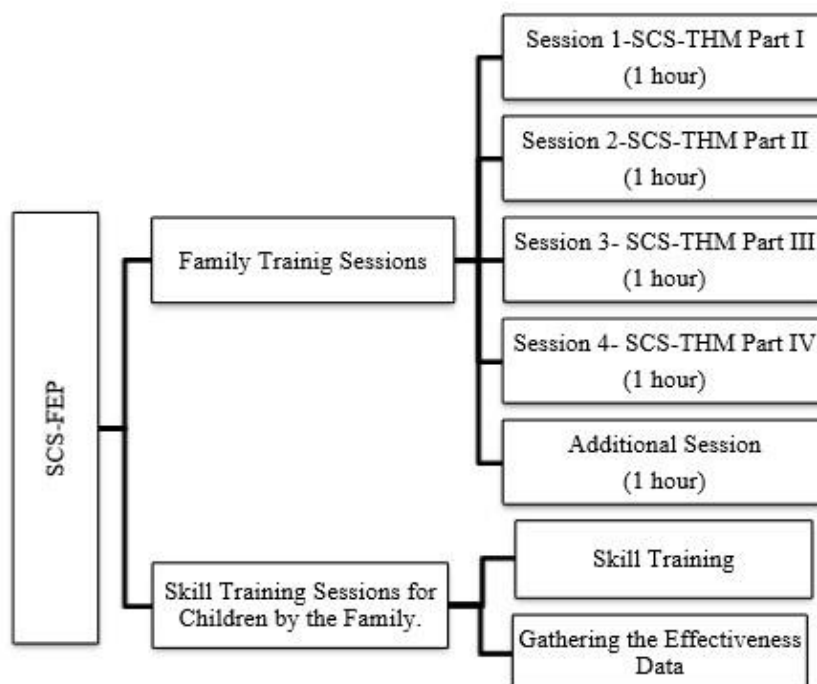


Figure 1. *Phases of SCS-FEP*

As illustrated in Figure 1, family training meetings of the program lasted for a total of five hours in five sessions. For each meeting session, the parts of the SCS-THM were presented. Figure 2 shows brief information about the content of the SCS-THM.

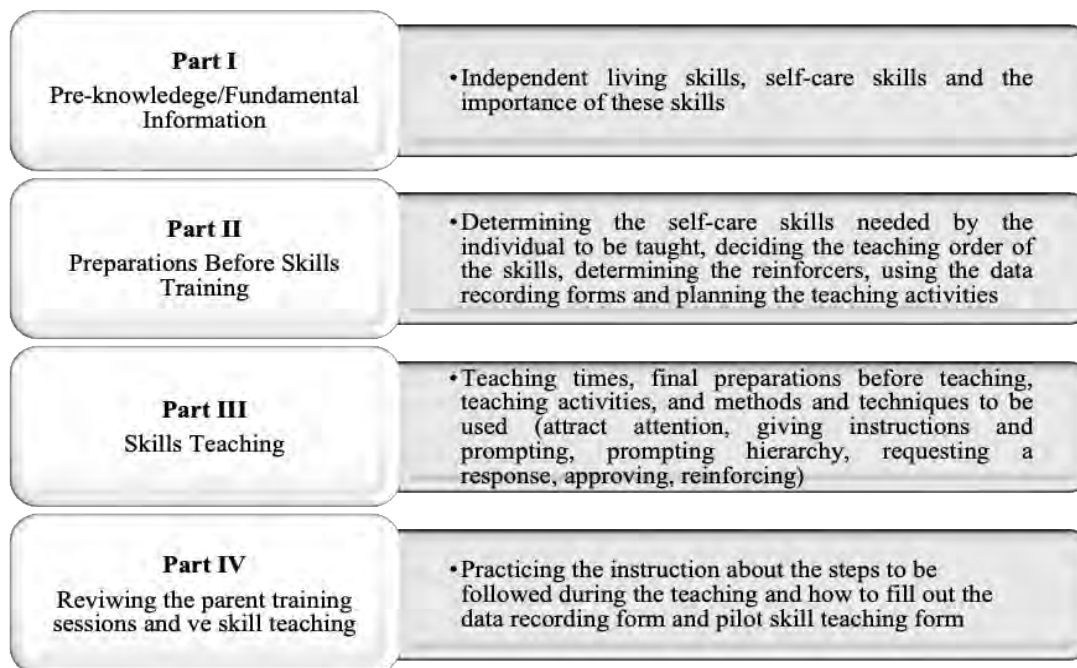


Figure 2. *The Content of SCS-THM*

As illustrated in Figure 2, SCS-THM consists of four parts: pre-knowledge/fundamental information covering independent living and self-care skills, preliminary preparations before skill teaching, skill teaching, reviewing the program and implementing the sample skill teaching. The SCS-THM also includes charts, lists and data recording forms to be used before and during the skill teaching by the parents.

Evaluation of the Program

To determine the success of the family education program on the level of knowledge acquisition related to the teaching of the self-care skills and to evaluate the teaching competency of the parents, the Family Education Program Evaluation Form (FEP-EF) and Skills Teaching Data Record Form (ST-DRF) were prepared. The forms contain the aims of the program. FEP-EF, which sets the baseline of the SCS-THM, aims to evaluate the participant parent's knowledge level of teaching. The FEP-EF consists of four main sections and a total of 31 items. Three experts in the field of special education evaluated the content of the program, FEP-EF, and ST-DRF. Necessary editing was made based on the corrections and changes requested by the experts.

The ST-DRF was developed to assess the ability of the parents participating in the family training sessions to practice skill-teaching. The ST-DRF form includes task analysis of the skills and columns that require marking checkboxes in accordance with the prompting hierarchy. This form was prepared to be used in the pilot skill teaching phase and was used for evaluation purposes in the post-test phase. The skills of eating and wearing a jacket were selected for the pilot study. In the pilot teaching phase in which the parent and the expert (the researcher) played a mutual role, the parent's ability to complete the application steps in the ST-DRF was recorded in the FEP-EF.

To analyze the data related to the success of SCS-FEP, a plus (+) is given for each correct mark for each line in the 31-question assessment tool that was applied as pre-test and post-test. The Total number of correct answers/Total number of questions X 100 formula was used for the calculation. The difference between the percentile results of the pre-test and post-test results was visualized with a column chart after analysis.

For the experimental control, some precautions were taken to prevent and/or minimize risk factors that could affect the internal validity of the study. Since possible changes in the dependent variable was expected because of the independent variable, family members and teachers were informed about not doing any teaching activities so the skills (dependent variables) would not be affected by another factor other than the teaching provided by the mother within the program. When the child needed toileting, hand washing and dressing during school hours, the mother and the teacher accompanied the child and gave the necessary support without giving directions that would disturb the data of the study.

For the external validity of the current study, the participants, the settings, and the tools/materials used were clearly defined. The mother's teaching sessions were video-recorded, and the first researcher periodically visited the home where the teaching was carried out by the mother.

Data Collection Instruments and Gathering Data

Data collection consists of two main stages. The first stage aimed to evaluate the success of the family education offered to the mother. In the second stage the data was gathered to evaluate the effectiveness of teaching self-care skills that was carried out by the mother. In addition, implementation fidelity, inter-observer agreement (IOA), and social validity data were collected during the implementation phase.

Effectiveness of the Program (SCS-FEP)

In the study, the data collection was based on the multiple probe with probe conditions across behaviors/skills. So, to determine how the child currently performed and what level the child would acquire the target skills, a baseline phase, intervention phase and probe phase data were collected. To record how the child responded to the steps in the task analysis of the target skills, the Intervention Sessions Data Record Form (IS-DRF) and the Probe Sessions Data Record Form (PS-DRF) were used. The IS-DRF, which was prepared to keep a data record of the skills taught by the mother, consists of columns showing task analysis steps of the skills and sessions. Similarly, the PS-DRF was created by the researchers to record the baseline and attendance data during the implementation process. A separate form was prepared for each skill and the responses of the child to the steps were marked on the form and a data record was kept. The response interval for each step was set at five seconds and the single opportunity method was used. Correct responses given in the five-second interval after the instruction were marked as "+". Incorrect responses or unresponsive steps were marked as "-".

Implementation Fidelity

To evaluate implementation fidelity, a Implementation Fidelity Form (IFF) was used. Thirty percent of the teaching and probe sessions of three skills were determined randomly from the recorded videos. In the video recordings, the behaviors that the mother fulfilled/not fulfilled in accordance with the planned procedure were recorded in the form as "+/-".

The video recordings of the sessions were taken randomly (30%) and watched by a different observer, recorded as "+/-" on the form, and then compared with the records kept by the researcher to determine whether the steps in the task analysis of the skills were performed or not. IOA data were collected by an observer (different researcher) only for handwashing and wearing pants. However, for the toilet skill, it was not collected. The Teaching Sessions Data Collection Form (TS-DR) was used to collect IOA data for the instructional sessions. Thirty percent of the instructional sessions for handwashing and wearing pants were randomly selected by the observer and compared with the data processed by the researcher.

Social Validity

To determine the views and experiences of the participant mother about the program and the process, some questions were posed. For that, The Social Validity Questionnaire consisting of 12 open-ended questions was employed. In the face-to-face interview with the mother, questions were asked, and the mother's answers were recorded using the voice recording feature of a mobile device. Then, the audio recording was transcribed into a Word document. After receiving the approval from the professionals for the document, the mother's answers were written in the Social Validity Questionnaire.

Procedure

Family education sessions were held twice a week for two and a half weeks for a total of five sessions. Each session lasted approximately one hour. Each session was planned, and a reminder was made by calling the mother before the meeting. The sessions were held at the mother's home or the school of the child depending on the mother's preference and availability.

In the first session a pre-test was applied using the Family Education Program Evaluation Form. Afterward, detailed information about the purpose and the flow of the program was provided to the mother. The session was ended by giving explanations about independent living skills, self-care skills, and the importance of these skills.

In the second session the second part of the Handbook (Preparations for Skills Teaching), focused on determining the self-care skills that the child needed, deciding on the teaching order of the skills, determining the effective reinforcers, usage of data recording forms and the planning of the skill teaching. Copies of the forms included in the annexes were given to the mother and she was told how to fill in the forms. To make clear explanations, the first researcher used the examples from the Handbook. In the planning part it teaches how to use the data record forms with included examples.

In the third session the skill teaching session, final preparations before teaching, teaching methods and techniques to be used, were handled under the topic of the skill teaching, which is the 3rd part of the Handbook. The mother was informed on issues that are needed during the teaching sessions such as how to attract the attention of the child and provide instructions and prompts, using the prompting hierarchy, approving, reinforcing, and activating.

In the fourth session of the program How to Conduct Teaching Sessions was discussed under Title Four of the Handbook. The steps that the mother should follow during the teaching and how to mark the data record forms were reviewed and revised. A sample session of teaching was done with the mother. In sample teaching the researcher and the mother practiced teaching various skills using role-playing. During the role-playing, feedback was given to the mother and the deficiencies were corrected. At the last stage of this session, a post-test was administered using the Family Education Program Evaluation Form. Successful completion of this session is a prerequisite for the mother to start teaching skills to her child. A success of at least 70% was required from the mother. The pre-test score of the

mother was 12 (38.70%) of the 31 questions. A total of 28 (90.32%) correct answers were obtained in the post-test. Figure 3 illustrates the percentages of correct responses given by the mother.

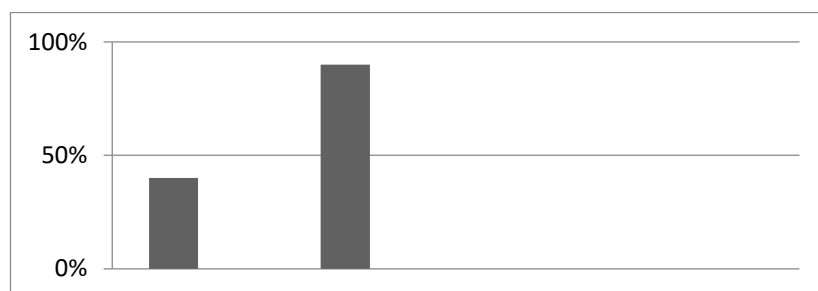


Figure 3. Pre-test and post-test results of the mother

In the fifth session the list of skills and reinforcers that the mother was asked to complete in the previous sessions was checked. Using this list, the skills to be taught and the reinforcers to be used during the teaching sessions were determined with agreement from the mother. Considering the needs of the child, three different skills were determined: (1) Handwashing, (2) Toileting independently, (3) Wearing sweatpants. In addition, the mother was asked to complete the task analysis of the determined skills, and the researcher intervened when necessary. After that, the steps of each skill depending on the task analysis was entered on the Teaching Process Data Record Form and given to the mother to use in teaching. After this stage, the experimental process of the skill teachings to the child was started by the mother.

All sessions for skill teaching were held at home and video recordings were taken with the mother's personal cell phone. For the teaching of the determined skills, the *least to most prompting procedure* was employed by the mother. According to this method, the mother presented her child with prompts according to the prompt hierarchy in cases where she could not get an answer within the five-second response interval or received an incorrect answer to a step.

In all three skills the mother generally used the reinforcers of "playing ball, going out and eating", which her child likes the most and did not get bored. The mother also included social reinforcements (saying well done, hugging, kissing, etc.) in each session. In addition, the mother reminded her child before the teaching with sentences such as "We came from the outside, you need to wash your hands", "We are going to eat, you need to wash your hands", "Put on your sweatpants, let's play soccer." By conducting the teaching in this way, she made the connection between necessity and the child's understanding of the time and necessity of performing the skill.

After the family training sessions ended, to determine the child's performance in three skills, the mother was asked to gather baseline data for each skill under the supervision of the first researcher. When there was consistency in the data for each skill at three consecutive times, the baseline sessions were terminated and the teaching of the first skill was started. The mother recorded the teaching and

probe sessions daily and shared them with the researcher via a mobile application. After the acquisition of all three skills, the probe session data were obtained until at least three sets of stable data were obtained for all skills. In the probe sessions in cases where the child responded incorrectly or did not respond in the response interval, that step was recorded as wrong (-). The researcher accompanied the mother as an observer in obtaining the baseline and probe sessions data for all skills.

When the achievement (80% and above) in the first skill (handwashing) was obtained three consecutive times, the first researcher visited the home. Probe sessions were held by the mother for all skills and when three stable data were obtained, the teaching of the first skill was terminated and the second skill teaching session was started. The same procedure in the first skill was repeated exactly in the second skill (toileting independently) and the third skill (wearing sweatpants). When the success was met in the third skill, the experiment was terminated.

Data Analysis

In the experimental data analysis, the number of correct responses was divided by the total number of steps, and the percentage of correct responded steps was calculated for the baseline, teaching, and probe sessions. The steps for which the prompts were provided were considered incorrect, and only the steps with the correct response were included in the calculation. Then, the percentage values were plotted on the graph. To evaluate the implementation fidelity, the formula “observed implementer behavior/planned implementer behavior X 100” was used. In the inter-observer agreement data, the formula “agreement / (agreement + disagreement) X 100” was used. For the social validity report the audio recordings of the semi-structured interview with the mother was transcribed into a MS Word document. Data were taken from this document and analyzed. To determine the accuracy of the transcription, the document was shared with a professional in the special education department. The professional confirmed the accuracy of the transcribed records. Then, the data was processed into the Social Validity Data Form.

Findings

Intervention

In figure 4 the graph indicates the findings regarding the teaching of the mother regarding the self-care skills and the level of the child's realization of these skills in the baseline, intervention (teaching), and probe sessions. According to the graph the baseline level of the child on handwashing skill was 5% on average. After the teaching sessions, this level increased to 86% by the seventh session and 100% by the eighth and ninth sessions. In the probe phase the child independently demonstrated a handwashing skill of 100% in three consecutive sessions. For the second skill (using the toilet), the baseline level was 0%. In the probe sessions held after the teaching of the first skill, the child demonstrated an average level of 3.7% for this skill. As seen in the graph, a level of 88% was obtained

by the 7th session. The baseline level to wear sweatpants was 0%. After the 13th session, stable data at a level of 88% was obtained.

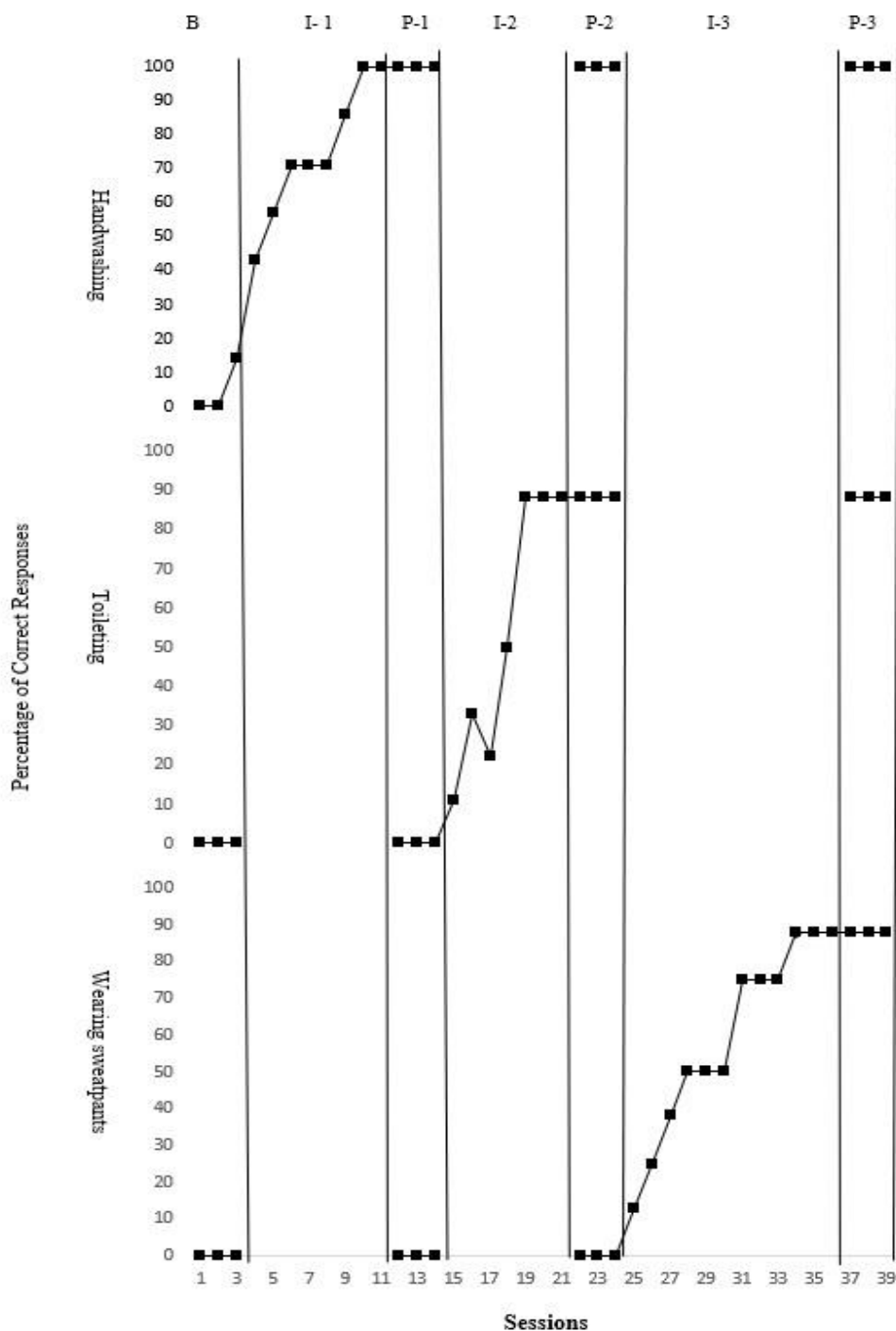


Figure 4. The Child’s Correct Response Percentages of Skill Levels at Baseline and Intervention

*B: Baseline, I: Intervention, P: Probes

The data indicates that there is a significant difference between the baseline and teaching phases for all three skills. This reveals that the independent variable has an effect on the dependent variable.

Therefore, it is possible to conclude that the teaching carried out by the mother who completed the SCC-FEP was effective for the skill acquisition of her child with ASD.

Fidelity Data Findings

The implementation fidelity findings indicating the extent to which the mother implemented the teaching and probe sessions as planned. Implementation fidelity level for the baseline and probe sessions of the hand washing, toileting, and wearing sweatpants skills were 100%. Implementation fidelity for the teaching sessions of handwashing was 89.7%, toileting 88%, and wearing sweatpants was 93.8%. Additionally, the data analysis for the inter-observer agreement for baseline and probes indicates 100% accuracy for handwashing and wearing pants skills.

Social Validity Findings

The mother expressed her satisfaction with the teaching sessions that she carried out with her child and enjoyed participating in the program. She stated the following about the contribution of the program to her own development. "I was teaching something before, but this time I learned to teach like a real teacher. I learned to be more patient. Thanks to the program, I learned how to teach appropriately. I also thank you. Glad I joined."

The mother answered the question "Was teaching with the least to most prompts' procedure helpful for your child in learning self-care skills?" "As I said before, this method did not work for him. No, the model now works for him." The mother stated that the child's acquisition of the self-care skills within the program contributed a lot to her daily life. "I no longer have to interfere in the toilet and hand washing. Especially in terms of school, these made me very comfortable."

She expressed how the independence gained by his child in these skills had an impact on their lives. Another question was asked. "With the knowledge and skills, you learned from this program, do you plan to teach different skills to your child in the future?" "Of course, I will teach. For example, from now on I will teach him to put on his shoes by himself," she said. She stated that there was nothing she didn't like about the program. She only had some problems with the school during the study, so sometimes she was stressed. Although the mother was stressed and had anxiety about non-program factors that she sometimes mentioned in the studies, this did not affect the study overall. The reason why she stayed with the program and the teaching with determination through stressful times during the program was "I don't have the personality to give up. This is important both for him to be able to do something on his own and for the burden of caring for him be lifted off me."

Social reliability findings of the study shows that the family education program can provide the knowledge and ability for the mother to teach the determined self-care skills to her child like a teacher. It has been revealed that the skills acquired by the child contribute positively to their lives both in the

home and in the school. Additionally, the results confirm that she realized the affect and importance of the systematic and planned teaching.

Conclusion, Discussion, and Suggestions

The aim of this study was to determine the effectiveness of a family education program developed for teaching self-care skills to individuals with ASD. Therefore, a mother and a child with ASD participated in the study. The findings of the study indicated that the mother's teaching to her child with ASD within the program gained the targeted self-care skills. As a result of the Family Education Program, the mother was able to teach by using the least to most prompting procedure and was able to record the data reliably during her teaching.

The findings of the current study are consistent with the findings of other studies that consider parents as teachers in teaching self-care skills (e.g., Cavkaytar, 1999, 2007; Ozcan & Cavkaytar, 2009; Sonmez & Aykut, 2011; Sonmez & Varol, 2008). In the study carried out by Cavkaytar (1999), the parents participating in the program improved the self-care and domestic skills of their children with intellectual disabilities. The aim of the current study was to disseminate Cavkaytar's study by conducting his program with individuals with different types of disability into different regions. It was seen that the SCS-FEP developed on the teaching of self-care skills is effective in developing self-care skills in a child with ASD. Similarly, in a study conducted by Ozcan and Cavkaytar (2009), a family training program for teaching toileting skills was developed and the effectiveness of the program was investigated. The findings of the study show that providing systematic trainings to the families improves the teaching competencies of the families. In the study, the families could learn how to teach toileting skills to their children with special needs and implement effectively what they learn within the program.

The examination of the studies shows that family training programs provide positive outcomes for the individuals with special needs and parents. The studies that consider family members as educators in teaching the new skills to individuals with special needs prove that if planned and systematic instructions are provided for parents and other family members, they can implement what they learn and teach their children appropriately (e.g., Batu, 2008; Bearss et al., 2015; Cankaya & Kuzu, 2018; Cavkaytar, 1999; Doan & Toussaint, 2016; Kurtoglu & Cavkaytar, 2022; Nefdt et al., 2010; Schertz & Odom, 2007; Tekin-Iftar, 2008; Ulugol & Cavkaytar, 2020). Although most of these studies focus on different teaching methods, different disability types and skill areas, it is seen that family centered teaching practices realize the knowledge and skill competencies of family members for teaching and are effective in teaching the targeted skills. Similarly, in this current study, the mother's program-based test result rates increased from 38.70% to 90.32%. She was able to teach the determined skills appropriately to her child and the child developed the skills.

Social validity findings show that the mother was satisfied with the program. She noticed the mistakes that she knew to be true while teaching her child before, and that it became important to be

systematic and planned when teaching her children. In studies dealing with the factors that make it difficult for individuals with ASD to participate in social life and work, limitations in self-care skills are seen as a barrier and prevents participation (Farley et al., 2009; Kellems et al., 2018). As in the current study, families see self-care skills as a factor that facilitates daily living and social life.

It was observed that the mother, who was the participant of the study, was hopeless from time to time in the family training sessions and during the teaching sessions to her child. The mother expressed her opinion that the methods to be used while planning the study would not work. The fact that the mother did not receive a systematic and planned education before can be explained as one of the reasons for this. In addition, the fact that his knowledge and skills were not sufficient in teaching his child caused him to think negatively at the beginning. But after the program, the mother's success in teaching changed her thoughts positively. This situation once again revealed the importance of providing more education opportunities to families. Especially families with limited access to services have more difficulties in this regard (Mello, 2016). Therefore, family education provides an opportunity to meet these needs.

The study has some limitations. This study was limited to a mother and a child with ASD and three self-care skills. This limits the generalizability for the study. However, the detailed description of the study in terms of participants, environment, equipment, and procedure allows it to be repeated by different researchers with different participant groups.

Regrettably, after the study was completed, monitoring data based on the data recording form could not be obtained because the family moved to a different home environment outside the city and the mother did not volunteer to provide formal information. In the phone conversations with the mother, it was learned that the child continued the skills. He performs these skills in a different home environment which is an important indicator in terms of generalization between environments. In addition, inter-observer data were not gathered for toileting skill because it involves privacy, and the mother did not want the video to be shared with anyone else. The first researcher watched the videos of toilet skill on the mother's phone for implementation fidelity data.

The teaching of self-care skills is best implemented in the home, which is the natural environment of the individuals. Family members play a critical role in learning these skills. However, some families who want to teach their children have difficulties in some cases regarding what, how and which methods and techniques they will use. Family education programs like these provide useful opportunities. Organizing a systematic and structured family training program focusing on the teaching of self-care skills based on the needs of different types of disabilities and evaluating their effectiveness is key to the success of these types of programs.

Additionally, conducting dissemination activities about the family education programs can make significant contributions to the community. The availability of resources provides important

support to family members and educators, and institutions that cooperate with families. In this respect, bringing together existing family education programs in handbooks and improving their accessibility through online modules and/or mobile applications can be beneficial in terms of supporting families in need of information and guiding teachers.

Lastly, the mother stated that she spends more time on the education of her children compared to her husband. These statements of the mother are similar to the findings of the other studies (Carpenter & Towers, 2008; Johnson & Simpson, 2013; Smith et al., 2010). According to research, mothers have a great responsibility in the care of their children with special needs. However, fathers do not provide enough support to the mother. This may be explained by the role of fathers to provide for the house or mothers' traditional role of being primary caregiver. The support of each family member is important for the development of individuals with special needs. All parents' involvement provides mutual support to each other and is considered natural support for individuals with special needs. Therefore, more efforts should be made to involve fathers and other family members. However, primarily it should be aimed to change the attitudes of fathers to become more involved in their children's education.

Statement of Responsibility

The authors contributed equally to the related research. Therefore, each author is equally responsible.

Ethical Procedures Statement

The research was carried out with the date of March 3, 2019, and the number of 21572 Anadolu University University Ethics Committee Approval.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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