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Examining the effectiveness of education based on social learning theory in fostering self-care and social skills in school children: A randomized controlled trial

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ABSTRACT

Purpose: This study was conducted to examine the effectiveness of a training program prepared on the basis of the Social Learning Theory for teaching self-care and social competence behaviors in preschool children.
Design and method: The sample of the study consisted of 41 in the intervention, 41 in the control group. Data were collected with Demographic Assessment Form, the Self-Care Skills Assessment Scale and the Social Competence and Behavior Evaluation-30 Scale. Using five animated films created on the basis of the Social Learning Theory for fostering children self-care and social competence behaviors.
Results: The scores of the children in the intervention group on the three sub-dimensions of the self-care scale and the total score of the scale were found to be significantly higher than the control group ($p < 0.05$). The intervention group scored significantly higher on the self-care scale and social competence and behavior scales than the control group ($p < 0.05$).
Conclusion: As a result of the research, it was seen that the applied training significantly affected the self-care and social competence behaviors in the intervention group. It was seen that using Social Learning Theory in teaching health behaviors has been effective in the learning process of preschool children.
Implications to practice: In preschool period, children learn by observing and imitating their adopted role models. Since, we suggest that health training program should be based on the stages of Social Learning Theory. Animated films that focus on the target health behaviors can be used as training tools.

Introduction

Preschool is a period in the life of children when they experience rapid cognitive and social development, and their capacity for learning is at its greatest. In this period, children have a natural curiosity, and a desire to learn everything they can, make observations and duplicate the behaviors of others (Tepeli & Köroğlu, 2020). Learning can be defined as a permanent change in the behavior of an individual as a result of experience (Mayer, 2008; Schunk, 2005).

Preschool is an important time of life when behaviors are shaped, habits are formed, and basic health-related behaviors are acquired (Kotler et al., 2012), with self-care being one of the most important acquired behaviors in this period for personal health. Self-care skills can be defined as the daily life skills required for a child to be able to meet their basic needs on their own, without the help of an adult, at home, at school or in other settings. The self-care skills that children acquire as they develop, such as those related to eating, dressing, personal care and toileting, are vital components of a bio-psycho-socially healthy life (Dinçer et al., 2017; Varol, 2016). Self-care plays an important role in the development of positive health behaviors and quality of life (Yavuz & Çimen, 2007).

The healthy self-care behaviors expected from preschool children include an ability to wash oneself without wetting one's clothes, brushing teeth at least twice a day without help, toilet hygiene, healthy eating and nutritional habits, dressing skills, separating clean and dirty clothes, dressing for the weather, covering one's mouth when sneezing or coughing, using a tissue to wipe a runny nose and combing one' hair without help (Oktay, 2007; Varol, 2016). Social learning refers to learning in a social environment. Social learning theory argues that human behaviors are shaped by the interactions between cognitive, behavioral and environmental factors (Ergün, 2004; Erşan, 2016; Ertürk & Şirin, 2011). According to social learning theory, learning takes place via reactions and modeling (Bandura, 2001). Bandura, a leading proponent of

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social learning theory, claims that many behaviors are learned through the observation and modeling of the behaviors of others (Bandura, 2002).

Positive peer relationships in preschool help children adapt to school and acquire emotional control, conflict resolution and self-regulation skills, while also improving their social competencies (Gülay, 2011; Li, Coplan, Archbell, Bullock, & Chen, 2016; Luczynski & Hanley, 2013), and contributing to their psychosocial, cognitive, affective and moral development. In this period, peers function as sources of information, models and interlocutors, and facilitate the learning of new knowledge, skills and behaviors (Guhn et al., 2016; Perren et al., 2007).

Contemporary media, including smartphones, tablets, PCs and television, in particular, play an undeniable role among children. Children have at their disposal a wealth of technological devices through which they can interact with others at all hours of the day, providing them with easy access to information and other content that can shape their individual behaviors. The presence of the tendency to take role models and the desire to imitate in preschool children increases the rate at which they are influenced by what they watch (Gümüş & Adam, 2020). Social learning theory is based on the fact that children identify with characters in TV shows, and cartoons in particular, and adopt the behaviors and attitudes displayed by those characters by making a conscious effort to copy them. Cartoon characters on TV play an important role both in shaping the characters of children, and can aid them in the acquisition of health-related behaviors (Tripathi et al., 2016).

In order to create a healthy society in the future, the training to be given to children in the preschool period about self-care and social competence, the methods to be used in this training are of critical importance. There is, however, a need for effective intervention programs targeting the improvement of self-care skills and social competence levels in children (Lobo & Winsler, 2006). Given the long-term negative effects of deficiencies in social competence and emotional control skills, it is great importance for school nurses to identify at-risk children as early as possible, and provide guidance for proper counseling. It is very important for nurses to implement health-promoting nursing interventions in order to ensure that the child is best prepared for life and has the chance to realize himself throughout his life (Özdemir et al., 2008; Ulutaşdemir et al., 2016). Thus, school nurses can play an important role in training parents and preschool teachers on the acquisition of positive health behaviors by children.

A review of literature revealed a lack of training programs in Türkiye that use animated cartoon characters to improve the self-care and social competence skills of children. This research was conducted to examine the effectiveness of a training program based on social learning theory in teaching self-care (general body hygiene, nose and ear cleaning, dental health, hand hygiene) and social competence skills to children five and six years of age. The hypotheses tested in the study are presented in the following.

Hypotheses

H1: We hypothesize that children in the intervention group show higher scores in self-care than children in the control group.

H2: We hypothesize that children in the intervention group show higher scores in social competence than children in the control group.

Methods

Design and sample

A randomized controlled intervention design was used in this study. The population of the study consisted of official kindergartens affiliated with the Ministry of National Education in a province. The selected province had 25 districts, one of which was selected using simple random sampling. This district had 18 official kindergartens affiliated with the Ministry of National Education, and one was selected using simple random sampling.

Participants and randomization

The power analysis conducted using the software G*Power 3.0.10 showed that in a study design with 5 repetitions and 2 groups (intervention and control), a sample size of 82 was required for an effect size of 0.7362, power of 95% power, and 5% margin of error. In the sampling, two schools selected by lottery from the list were assigned as intervention and control groups. The first school chosen in the draw forms the intervention group, and the second school forms the control group. The two kindergartens included in the study had a total of 180 children five and six years of age. Taking into account the losses that may occur as a result of the sample size determined by the power analysis, the process continued until 43 of the children who agreed to participate in the study, were between the ages of 5–6, and had parents who gave their written consent for the study, were assigned to the intervention group and 43 to the control group. Thus, given the risk of attrition, a total of 86 children were included in the study. Since the children assigned to the intervention and control groups were from two different schools, they did not interact with each other (Fig. 1 CONSORT).

To test the comprehensibility of the cartoons prepared and the data collection forms, a pilot study was conducted with 10 children attending one of the schools sampled. G*Power analysis was based on data from this pilot study. Children who participated in the pilot study were excluded from the main study.

Blinding

It was not possible to blind the researchers to the intervention and control groups for randomization. However, the data collection process was blinded by using classroom teachers who work in the kindergarten included in the study. Self -care and social competence scales were administered by the teachers who were unaware of the intervention and

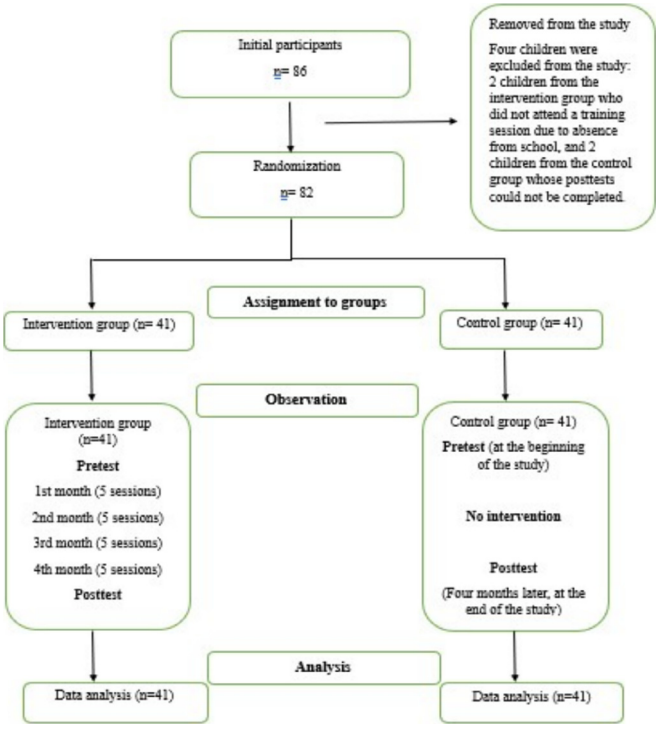

Fig. 1. Consort flow diagram.

control groups of the children. The teachers in the classes where the research was conducted do not have information about the training to be provided. While the children in the intervention group were receiving training and during the control group visits, the teachers were not in the classroom and the training was carried out by the researcher. Only the purpose of the research was explained to the teachers and they took part in collecting data in the study. In addition, the teachers in the intervention group and the teachers in the control group do not have any interaction because they work in different schools. In this way, they do not have information about the number of measurements. Thus, bias was prevented by blinding the data collection. On the other hand, the statistician who analyzed the data carried out the analysis without knowing which group the data belonged to (groups were coded as G1, G2).

Inclusion and exclusion criteria

Children who were five or six years of age and did not have any cognitive or sensory issues were included in the study.

Children with cognitive or sensory issues requiring special education were not included in the study.

Variables

Mean scores of the intervention and control groups on the self-care, social competence and behavior evaluation scales were the dependent variables. Independent variables were the training program –which involved animated films on self-care and social competence skills– and sociodemographic variables.

Data collection tools

Data for the study were collected using the Demographic Assessment Form, the Self-Care Skills Assessment Scale for 3- to 6-Year-Old Children and the Social Competence and Behavior Evaluation–30 Scale.

Demographic Assessment Form: This form contained items on age, hand washing habits, tooth brushing frequency, number of meals a day, peer activities, number of screen hours (TV, computers, tablets, smartphones), whether they watched advertisements, and if so, which attracted their attention, and the ages and incomes of parents, among others. This form was filled out by the parents.

Self-Care Skills Assessment Scale for 3- to 6-Year-Old Children: The Self-Care Skills Assessment Scale was developed by Bayer et al. (2020) for the evaluation of the self-care skills of three- to six-year-old children. The test consists of 50 items scored on a 5-point Likert-type scale with the options: strongly agree, agree, neutral, disagree and strongly disagree. The test items are grouped into six categories (hygiene and personal care, eating, resting, accident avoidance and organizing one's environment). The tests were filled out by class teachers for each student, and the total scores from the test were calculated by summing up the scores given for the individual items. The total scores ranged between a minimum of $50 \times 1 = 50$ and a maximum of $50 \times 5 = 250$. The content and construct validities of the Self-Care Skills Assessment Scale were examined, and the test was found to have a Cronbach's alpha value of 85 (Bayer et al., 2020). The Self-Care Skills Assessment Scale has been reported to have a reliability coefficient of 0.88 for 6-year-old children. For our study, the Cronbach Alpha reliability coefficient of the scale was calculated as 0.98 for the total self-care scale. Permission was obtained from Bayer et al. (2020) for the use of the Self-Care Skills Assessment Scale.

Social Competence and Behavior Evaluation-30 Scale (SCBE-30): The Social Competence and Behavior Evaluation-30 Scale (SCBE-30) was developed by LaFreniere and Dumas (1996), and the scale was adapted for Turkish by Çorapçı et al. (2010), who also assessed its validity and reliability. The scale evaluates the cognitive and social behaviors of preschool children and comprises 30 items grouped under three subscales: Social Competence (10 items), Anger-Aggression (10 items), and Anxiety-Withdrawal (10 items). The "Social Competence" subscale measures positive traits such as cooperating with peers and looking for solutions to problems; the "Anger-Aggression" subscale evaluates problem indicators such as arguing with adults, problems in getting along with peers, and aggressive behaviors; and the "Anxiety-Withdrawal" subscale measures problem indicators related to internalization such as depressive mood and being timid in group settings. There are no reverse scored items in the scale. The scale is reported to have a Cronbach's alpha internal consistency coefficient of 0.88 for the "Social Competence" subscale, 0.87 for the "Anger-Aggression" subscale, and 0.84 for the "Anxiety-Withdrawal" subscale (Çorapçı et al., 2010). The Cronbach Alpha reliability coefficients of the scale for our study are 0.64 for the total scale, 0.73 for the "Social Competence" subscale, 0.69 for the "Anger-Aggression" subscale and 0.72 for the "Anxiety-Withdrawal" subscale. The scale comprises 6-point Likert-type items.

For the use of the Turkish version of the Social Competence and Behavior Evaluation-30 Scale (SCBE-30), permission was obtained from Çorapçı et al. (2010), who examined its validity and reliability.

Data collection

The data of the research was collected between January 20 and June 16, 2023. At the end of the monthly training sessions for the intervention group, evaluations were made with scales every month. The first evaluations and pre-tests were made to the intervention group before the training started and simultaneously to the control group on January 20, 2023. After the training sessions were completed, end-of-month evaluations were made to the intervention group on 24 February 2023, 24 March 2023, 21 April 2023, 22 May 2023. Post-test evaluations were applied to the intervention and control groups simultaneously on June 16, 2023. Children's own classroom environments were used for training sessions. Each classroom has a computer and a 82-in. LCD TV. Children were shown cartoons using this computer and TV.

Self-care and social competence training program implementation stages

A group training approach was preferred to encourage interactive interaction among the children and thus increase the effectiveness of the training program. What is more, skills that are acquired in a group setting, such as listening carefully when others speak, and displaying love and respect toward one another help children develop interpersonal relationships. These training programs are important in helping children develop their social competence skills, to improve their psycho-social health and to reduce problem behaviors. Group-based training programs for children tend to be more effective than individual training. Previous studies have reported that such programs focus on supporting important skills, and help children develop social interaction, cooperation, empathy and problem-solving skills, among others (Jones et al., 2019; NIEER, 2020).

While preparing the animated films on self-care and social competence-related issues for the training program, care was taken to avoid the use of scientific terminology and a simple and easy-to-understand language was used to help the participants better understand the issues. Goals were set for each of the self-care and social competence behaviors the children were expected to acquire, and tables of specifications were prepared to support the creation of animated film scripts containing the target behaviors.

Before creating the scenarios for the cartoons, the researcher scanned the literature, and read the most popular children's books, examining them in terms of language, expression and content. Most popular children's cartoons were also watched and examined in terms of the messages given and the understandability of the language, and to get an idea of what type of content to create (Korkmaz, 2023; Küçükkaragöz, 2023). Five cartoon scenarios were then created in line with the targets set regarding desired behaviors. When determining

these target behaviors, the behaviors in the scales used were taken as basis. Expert opinion was obtained for the scenarios from two nurse academicians in the field of pediatric nursing, a clinical child psychologist and an academician in the field of educational sciences regarding the targets, the table of specifications and the suitability of the content / scenario. The scenarios were finalized by making necessary adjustments in line with expert opinions.

In the end, a total of five cartoons were prepared: two cartoons for self-care behaviors, two cartoons for social competence behaviors, and one cartoon to summarize the importance of both self-care and social competence behaviors for children. Cartoons were prepared by a professional team of experts in their field using the 2D Animation Studio. Expert opinion was obtained for the cartoons as well. The average duration of the cartoons was 6 to 7 min.

Procedures for intervention and control groups

Intervention group procedure

Pretest: In this session, children in the intervention group, who met the inclusion criteria for the study and agreed to participate, were informed about the training they were to receive. Teachers were also informed about the self-care and social competence scales they were to administer to the children.

To have pretest measurements prior to the training program, the Self-Care Skills Assessment Scale and the Social Competence and Behavior Evaluation-30 Scale were distributed to the teachers to be filled out, while the parents were asked to fill out the Demographic Assessment Form.

The monthly training program was as follows

The application of self- care and social competence training program according to the stages of Social Learning Theory is illustrated in Fig. 2.

After the children watched the cartoons, a discussion was held on correct and incorrect behaviors for approximately 15 min. Before starting to watch the cartoons in the next session, topics discussed in the previous session were briefly discussed for 10 min and the events in the cartoon were recounted. Thus, the average session lasted approximately 30 min.

1. **Session on Self-Care Training I:** In this session, before watching the cartoon, an approximately 10-min discussion was held on what children knew about hand, face, toilet and general body hygiene and healthy self-care behaviors. Then, the first cartoon on children exhibiting positive and negative self-care behaviors, lasting 4 min and 21 s, was shown At the end of the cartoon, a discussion was held for approximately 15 min about the right and wrong behaviors displayed by the characters. This training session lasted approximately 30 min.
2. **Session on Self-Care Training II:** Before starting this session, topics discussed in the previous training session were recounted for approximately 10 min, focusing on right and wrong behaviors in the cartoon. Then, participants watched a 5-min and 33-s-long animated film, the second cartoon, showing children who exhibited positive and negative behaviors such as being able to put on and take off their clothes unaided and correctly, choosing clothes suitable for weather conditions and paying attention to clothing cleanliness, nutritional hygiene, washing hands before and after meals, and brushing teeth. At the end of the cartoon, a discussion was held for approximately 15 min about the right and wrong behaviors displayed by the characters. The session lasted approximately 30 min.

   Since the duration of the cartoons used in the first and second training sessions on self-care was short, the first two sessions were held 4 days apart in the same week. Other training sessions were administered one week apart. Thus, a total of 5 training sessions were completed within one month.
1. **Session on Social Competence Training I:** Before this session started, a discussion was held with the children about positive social competence behaviors for approximately 10 min and their attention was drawn to the subject. Then, the third cartoon on social competence behaviors, lasting 6 min and 19 s, was shown. Social competence skills discussed in this cartoon included being outgoing in group settings, being able to control one's emotions, being active in a group, participating in activities, being able to use one's own belongings and shared items carefully, being respectful to one's teacher and friends in the classroom, and being able to accept the consequences when one misbehaves. At the end of the cartoon, a discussion was held with the children about the right and wrong behaviors in the cartoon for approximately 15 min. The training session lasted approximately 31 min.
2. **Session on Social Competence Training II:** Social competence behaviors discussed in this session included being able to help and cooperate within the group, not taking out one's anger on physical objects, being able to seek solutions when in conflict, and knowing what to do in case of anxiety, fear and panic. Before watching the cartoon, a brief discussion was held on the topics discussed in the previous training session for approximately 10 min, and the right and wrong behaviors in the cartoon were recounted so that the children could remember them. The fourth cartoon shown to the children in this session lasted 6 min and 04 s. At the end of the cartoon, a discussion was held with the children about the right and wrong behaviors in the cartoon for approximately 15 min. The training session lasted approximately 31 min.
3. **Session on Reinforcing Self-Care and Social Competence Training:** The cartoon shown in this session covered both self-care and social competence behaviors. Behaviors discussed in this session included being able to follow hygiene rules when coming home from outside (washing hands with soap, washing face, etc.), changing into clean clothes at home, being able to wash hands before eating when it's meal time, taking on necessary responsibilities (helping to set and remove the table, etc.), cover covering one's mouth and nose with a tissue when sneezing or coughing and cleaning up afterwards, and putting on pajamas and brushing teeth before going to bed. Before watching the cartoon, a brief discussion was held on the topics covered in the previous training session for approximately 10 min, and the right and wrong behaviors in the cartoon were recounted so that the children could remember them. The fourth cartoon shown to the children in this session lasted 9 min and 04 s. At the end of the cartoon, a discussion was held with the children about the right and wrong behaviors in the cartoon for approximately 15 min. The session lasted approximately 34 min.

   During the discussions, children were asked to practice the desired behaviors shown in the cartoons, and appropriate feedback was given.

Assessment of Self-Care and Social Competence: During the four months of the intervention, after a total of five training sessions on self-care and social competence were completed at the end of each month, classroom teachers administered the Self-Care Skills Assessment Scale for 3- to 6-Year-Old Children, and Social Competence and Behavior Evaluation Scale-30 to evaluate children's behaviors in the areas of self-care and social competence. Thus, children in the intervention group were evaluated five times in total, including the first evaluation before the start of the study and the evaluations at the end of each month.

Control group procedure

Pretest: The self-care and social competence skills of the children in the control group were assessed at the beginning of the study together

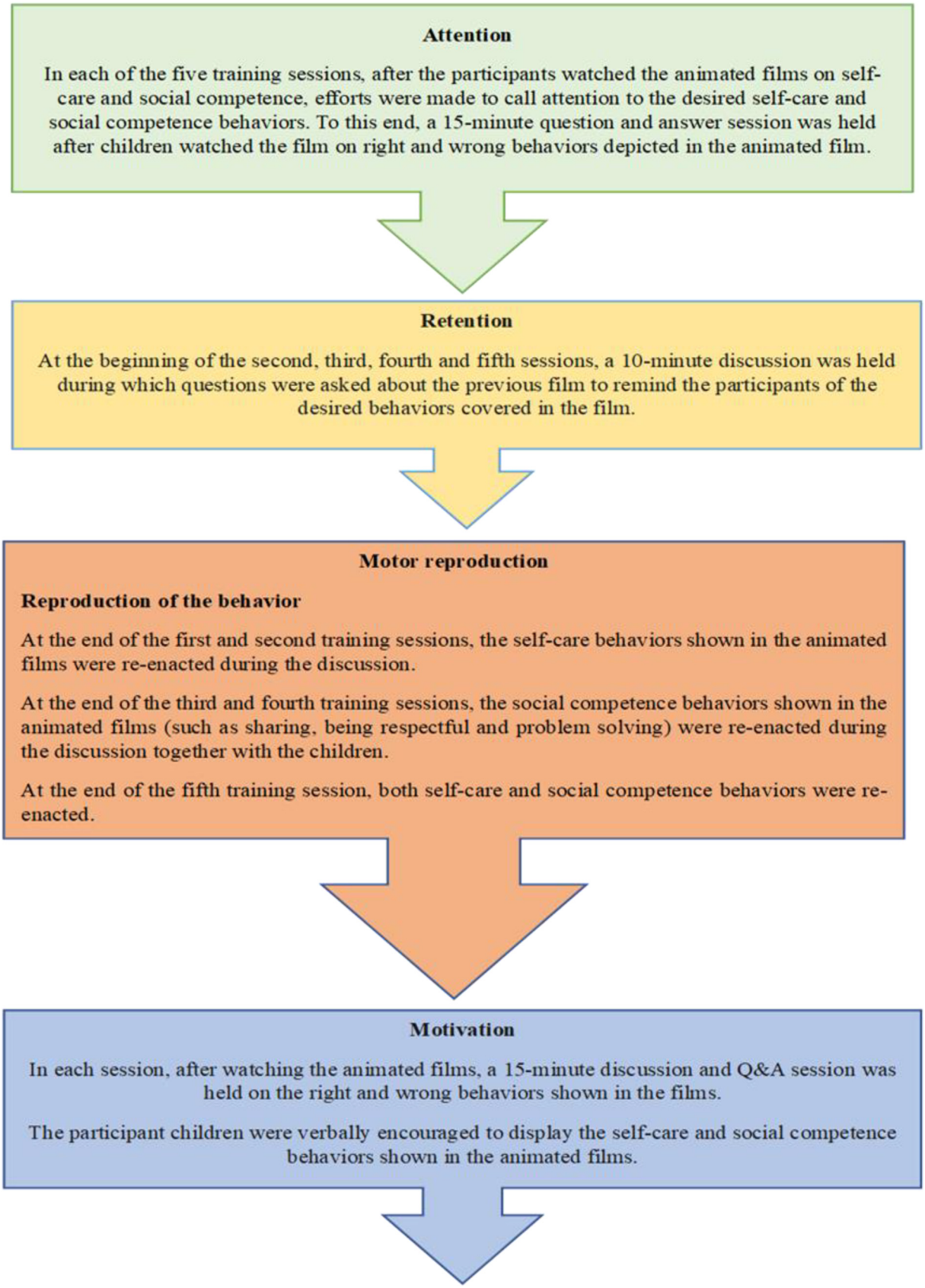

Fig. 2. Implementation of the self-care and social competence training on the basis of the stages of social learning theory.

with the intervention group. To this end, pretests of the Self-Care Skills Assessment Scale for 3- to 6-Year-Old Children, and the Social Competence and Behavior Evaluation – 30 Scale were filled out by the teachers, while the parents were asked to fill out the Demographic Assessment Form.

Posttest: The children in the control group received no extra self-care or social competence training besides that provided by the teachers for one week as part of the regular curriculum. For the posttest of this group, the Self-Care Skills Assessment Scale for 3- to 6-Year-Old Children was used, as well as the Social Competence and Behavior Evaluation–30 Scale, both of which were filled out by the teachers at the end of the fourth month.

At the same time that the intervention group was receiving training, visits were made to the control group and the children were chatted with, and activities unrelated to the subject desired by the children were carried out, apart from the cartoons used in the research. No other assessments were carried out after these visits.

Ethical considerations

Ethics board approval for the study was obtained from a university's Directorate of Ethics Boards for Human Studies, with decision no. 192831, dated July 25, 2022, and protocol no. 283. Permission for the study was obtained from the Ankara Provincial Directorate of Education dated August 24, 2022, no. 605.99–55,821,342. The families of the children included in the study were informed about the study design and gave written consent for the inclusion of their children, while verbal consent was obtained from the children themselves.

Data analysis

Prior to conducting further statistical analysis, the Shapiro-Wilk test was used to see if the sample had a normal distribution and the data was found to have a normal distribution. Thus, parametric tests were used in the study. Levene's test was used to test for homogeneity of variance (heteroscedasticity) in intervention and control groups.

The mean scores from the Self-Care Assessment Scale and the Social Competence and Behavior Scale administered to the participants were calculated. As the numbers of participants in the intervention ($n = 41$) and control ($n = 41$) groups were larger than 30, parametric tests were used for the comparison of group means (Ghasemi & Zahediasl, 2012; Koh & Ahad, 2020; Kwak & Kim, 2017). A reliability analysis was carried out and Cronbach's alpha coefficient was calculated for each of the scales, including the subscales.

The applied parametric tests included a paired samples *t*-test and a repeated measures ANOVA for the comparisons within the intervention and control groups, and an independent samples t-test for the comparisons of the intervention and control groups.

An analysis of the correlation between the intervention and control groups was carried out using Fisher's and Pearson's Chi-square tests. Descriptive statistics for the categorical variables (demographic traits) were presented as frequencies and percentages, while descriptive statistics for numerical variables were reported as means (M) and standard deviations (SD). In all calculations and interpretations, a $p < 0.05$ level of significance was used. All statistical analyses were conducted using IBM SPSS Statistics (Version 28.0. Armonk, NY: IBM Corp.).

Results

Table 1 presents the demographics of the intervention and control groups in the study, revealing no statistically significant differences ($p > 0.05$) between the two groups (in terms of sex, birth order, mother's and father's educational attainment, family income, frequency of bathing, access to computers/tablets/smartphones in the home, TV viewing time at home and viewing ads).

Table 2 shows that there were no statistically significant differences between intervention and control groups in terms of their pretest scores on three dimensions of the self-care scale (hygiene and personal care,

Table 1
Demographics of intervention and control groups.

Variable	Intervention	Control	Test statistic	p
	n (%)	n (%)		
Sex				
Female	23 (56.10%)	19 (46.30%)	0.781	0.508
Male	18 (43.90%)	22 (53.70%)		
Mother's educational attainment				
High school graduate	6 (14.60%)	9 (22.00%)		
College graduate	29 (70.70%)	27 (65.90%)	0.762	0.683
Post-graduate	6 (14.60%)	5 (12.20%)		
Father's educational attainment				
High school graduate	5 (12.20%)	9 (22.00%)		
College graduate	29 (70.70%)	25 (61.00%)	1.439	0.487
Post-graduate	7 (17.10%)	7 (17.10%)		
Average monthly income (TRY)				
12,001–15,000	2 (4.90%)	0 (0.00%)		
15,001–20,000	7 (17.10%)	8 (19.50%)	2.082	0.353
20,000 or above	32 (78.00%)	33 (80.50%)		
Bathing frequency				
Once a week	12 (29.30%)	16 (39.00%)		
Twice a week	23 (56.11%)	22 (53.70%)	1.594	0.451
Three times a week	6 (14.60%)	3 (7.30%)		
Access to computers/tablets/smartphones in the home				
Yes	37 (90.20%)	40 (97.60%)	1.917	0.116
No	4 (9.80%)	1 (2.40%)		
Watches TV at home				
0–2 h	15 (36.60%)	21 (51.20%)		
2–4 h	20 (48.80%)	17 (41.50%)	2.743	0.433
4–6 h	5 (12.20%)	3 (7.30%)		
6 h or more	1 (2.40%)	0 (0.00%)		
Watches advertisements				
Yes	9 (22.00%)	6 (14.60%)	0.734	0.569
No	32 (78.00%)	35 (85.40%)		

n: number of observations.

Table 2
Within- and between-group comparisons of the mean scores from the self-care scale of the intervention and control group participants.

Mean Scores from Self-Care Scale and its Dimensions	Intervention (n = 41)					Control (n = 41)		Between-Group Statistical Analysis	
	First Administration (Pre-test)[a]	Second Administration (1st Month)[b]	Third Administration (2nd Month)[c]	Fourth Administration (3rd Month)[d]	Fifth Administration (Post-test)[e]	First Administration (Pre-test)	Fifth Administration (Post-test)	First Administration (Pre-test)	Fifth Administration (Post-test)
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD		
Hygiene and personal care	79.14 ± 12.78	79.92 ± 11.87	83.92 ± 7.12	84.39 ± 7.12	90 ± 0	75.90 ± 20.09	84.22 ± 5.17	$t = 0.87$	$t = 7.16$
Within-Group Statistical Analysis	$F = 24.28$					$t = -2.80$		$p = 0.386$	**$p < 0.001$**
	$p < 0.001$ (a < c, d, e) (b < c, d, e) (e > a, b, c, d)					**$p = 0.008$**			
Eating	47.22 ± 8.00	47.48 ± 7.69	50.29 ± 4.6	50.36 ± 4.65	55 ± 0	45.36 ± 9.01	47.04 ± 5.88	$t = 0.98$	$t = 8.64$
Within-Group Statistical Analysis	$F = 29.06$					$t = -1.31$		$p = 0.328$	**$p < 0.001$**
	$p < 0.001$ (a < c, d, e) (b < c, d) (e > a, b, c, d)					$p = 0.195$			
Resting	15.02 ± 2.61	15.12 ± 2.57	16.90 ± 1.31	17 ± 1.39	20 ± 0	15.56 ± 3.34	16.80 ± 2.27	$t = -0.80$	$t = 9.00$
Within-Group Statistical Analysis	$F = 82.65$					$t = -2.68$		$p = 0.421$	**$p < 0.001$**
	$p < 0.001$ (a < c, d, e) (b < c, d) (e > a, b, c, d)					**$p = 0.01$**			
Dressing	36.46 ± 4.44	36.63 ± 4.24	41.12 ± 2.62	41.36 ± 2.96	43.41 ± 2.28	43.14 ± 11.09	43.70 ± 5.32	$t = -3.57$	$t = -0.32$
Within-Group Statistical Analysis	$F = 63.80$					$t = -0.42$		**$p = 0.001$**	$p = 0.74$
	$p < 0.001$ (a < c, d, e) (b < c, d) (e > a, b, c, d)					$p = 0.677$			
Accident avoidance	10.87 ± 0.71	10.87 ± 0.71	13 ± 0.86	13.04 ± 0.92	14.12 ± 0.51	11.95 ± 2.40	12.73 ± 1.98	$t = -2.73$	$t = 4.33$
Within-Group Statistical Analysis	$F = 389.02$					$t = -3.51$		**$p = 0.009$**	**$p < 0.001$**
	$p < 0.001$ (a < c, d, e) (b < c, d) (e > a, b, c, d)					**$p = 0.001$**			
Tidiness	16.48 ± 2.78	16.48 ± 2.78	17.65 ± 1.93	17.75 ± 1.94	19.43 ± 0.50	18.22 ± 2.20	18.31 ± 2.12	$t = -3.12$	$t = 3.28$
Within-Group Statistical Analysis	$F = 41.87$					$t = -1.43$		**$p = 0.003$**	**$p = 0.002$**
	$p < 0.001$ (a < c, d, e) (b < c, d) (e > a, b, c, d)					$p = 0.160$			
Self-Care Scale	205.22 ± 28.29	206.53 ± 26.58	222.90 ± 15.68	223.92 ± 16.21	241.97 ± 2.74	210.14 ± 36.77	222.82 ± 18.88	$t = -0.68$	$t = 6.42$
Within-Group Statistical Analysis	$F = 53.26$					$t = -2.51$		$p = 0.499$	**$p < 0.001$**
	$p < 0.001$ (a < c, d, e) (b < c, d) (e > a, b, c, d))					**$p = 0.016$**			

SD: Standard deviation F: Repeated measures ANOVA * Independent samples t-test used to compare intervention and control groups. * Paired samples t-test used to compare pre-test and post-test scores.

eating, resting) ($p > 0.05$). The two groups did significantly differ, however, in terms of their pretest scores on three other dimensions of self-care (dressing, accident avoidance, and tidiness) ($p < 0.05$), with the control group scoring higher in these dimensions. the intervention group, there were statistically significant differences between pretest and posttest scores on all dimensions of the self-care scale, as well as between total scores on the scale ($p < 0.05$). The posttest scores of the intervention group were also significantly higher than the scores received in the second, third, and fourth administrations of the scale, both for individual dimensions and for the scale as a whole ($p < 0.05$).

In the control group, there were statistically significant differences between pretest and posttest scores on three dimensions of the self-care scale (hygiene and personal care, resting, accident awareness), as well as between total scores on the scale ($p < 0.05$). In all these cases, posttest scores were significantly higher ($p < 0.05$).

There were statistically significant differences between the intervention and control groups in terms of their mean posttest scores on three dimensions of the self-care scale (hygiene and personal care, eating, resting) and on the scale as a whole ($p < 0.05$), with the intervention group having higher scores in all cases.

Table 3 shows that in the intervention group, there were significant differences between pretest and posttest scores on the social competence and behavior scale for individual dimensions of the scale ($p < 0.05$). Pretest scores on the social competence and behavior scale were significantly lower compared to posttest scores. Moreover, pretest mean scores on the anger-aggression and anxiety-withdrawal dimensions were significantly higher than posttest scores ($p < 0.05$).

In the control group, there were statistically significant differences between pretest and posttest mean scores for individual dimensions of the social competence and behavior scale ($p < 0.05$). Posttest mean scores were significantly higher than pretest scores for the social competence dimension. For anger-aggression and anxiety-withdrawal dimensions, on the other hand, as well as for the scale as a whole, posttest scores were significantly lower than pretest scores ($p < 0.05$).

In the pretest, there were no statistically significant differences between intervention and control groups in terms of mean scores on individual dimensions of the social competence and behavior scale ($p > 0.05$). In the posttest, however, there were statistically significant differences between intervention and control groups in terms of their mean scores on all dimensions of the social competence and behavior scale ($p < 0.05$). Children in the intervention group received significantly higher posttest scores on the social competence dimension of the social competence and behavior scale, compared to the control group. They received significantly lower posttest scores, however, on two dimensions of the social competence and behavior scale (anger-aggression and anxiety-withdrawal) ($p < 0.05$).

Table 3
Within- and between-group comparisons of intervention and control group participants in terms of mean scores on the social competence and behavior scale.

Mean Scores in the Social Competence and Behavior Scale and Its Dimensions	Intervention ($n = 41$)					Control ($n = 41$)		Between-Group Statistical Analysis	
	First Administration (Pre-test)[a]	Second Administration (1st Month)[b]	Third Administration (2nd Month)[c]	Fourth Administration (3rd Month)[d]	Fifth Administration (Post-test)[e]	First Administration (Pre-test)	Fifth Administration (Post-test)	First Administration (Pre-test)	Fifth Administration (Post-test)
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD		
Social competence	44.82 ± 8.70	47.24 ± 5.53	46.95 ± 6.77	51.53 ± 3.31	54.82 ± 2.39	45.09 ± 11.38	48.41 ± 7.46	$t = -0.12$	$t = 5.24$
Within-Group Statistical Analysis	F = 60.91					$t = -3.94$		$p = 0.905$	**$p < 0.001$**
	$p < 0.001$ (a < b, d, e) (b < d, e) (c < d, e) (d < e)					**$p < 0.001$**			
Anger-Aggression	16.41 ± 3.66	15.31 ± 3.37	15.19 ± 3.45	11.51 ± 1.26	10.68 ± 0.87	16.92 ± 7.10	12.07 ± 2.01	$t = -0.41$	$t = -4.04$
Within-Group Statistical Analysis	F = 77.86					$t = 5.63$		$p = 0.683$	**$p < 0.001$**
	$p < 0.001$ (a > b, c, d, e) (b > d, e) (e < a, b, c, d)					**$p < 0.001$**			
Anxiety-Withdrawal	16.56 ± 5.92	15.29 ± 4.53	14.85 ± 4.24	12.70 ± 2.14	10.61 ± 0.89	18.85 ± 9.84	14.68 ± 4.18	$t = -1.27$	$t = -6.10$
Within-Group Statistical Analysis	F = 42.75					$t = 3.908$		$p = 0.206$	**$p < 0.001$**
	$p < 0.001$ (a > b, c, d, e) (b > d, e) (e < a, b, c, d)					**$p < 0.001$**			

SD: Standard deviation F: Repeated measures ANOVA * Independent samples t-test used to compare intervention and control groups. * Paired samples t-test used to compare pre-test and post-test scores.

Discussion

In this study, we examined the effectiveness of a training program based on the Social Learning Theory for teaching self-care and social competence behaviors.in preschool children. In line with Bandura's theory of social learning, the training program involved attention seeking to desired/positive behaviors, reminding subjects of the learned behaviors, having them display the behavior and motivating them to display the correct behavior. The training tools used in the study were animated films created to demonstrate the target behaviors that children were expected to acquire in self-care and social competence matters.

In the present study, conducted to examine the effectiveness of training provided to children aged 5–6 years in line with Social Learning Theory on self-care and social competence behaviors, the children's scores from the self-care scale were not found to vary significantly by the mother's or father's educational attainment, children's age or family income.

Self-care behaviors

The effectiveness of the training program applied to children aged 5–6 in the preschool period based on Social Learning Theory on self-care behaviors was examined.

Regarding hypothesis H_1, the mean post-test scores of the intervention group from the self-care scale as a whole and three of its dimensions (hygiene and personal care, eating, resting) were significantly higher than in the control group. Increases were noted also in the mean scores of the children in the control group from the self-care scale as a whole and some of its dimensions, which may be attributed to the hand washing, tooth brushing and general hygiene training provided by teachers in the first week of preschool education.

This study included a total of 20 training sessions in which the respondent children were supported in the acquisition of self-care and social competence behaviors over four months, with five sessions conducted each month. Animated films on self-care behaviors were used as training tools in these sessions, which were designed around the main stages of Social Learning Theory (attention, retention, repetition and motivation), which is based on the notion that people learn by observing and imitating the behaviors of others. During primary education, in particular, most of the learning that takes place is social learning.

In the present study, in terms of self-care behaviors, there was a significant increase in the total scale score and subscales of cleaning and personal care, eating and rest in the intervention group compared to the control group.

The self-care skills acquired in the preschool period affect children's future lives and help them progress to become healthy adults. The first 6 years of life are critical for the acquisition of basic health habits concerning eating, cleanliness, dressing, hand and bodily hygiene, toilet hygiene and tooth brushing PEP, 2016). The cognitive levels and psychomotor skills of children should be taken into account when teaching them about health. Children's understanding of health-related concepts begins to develop in preschool, and the knowledge and skills acquired by the end of the development period are reflected in their health behaviors and attitudes (Kang et al., 2012; Şenol & Şenol, 2023).

In a study conducted by Zain and Amat (2021) during the COVID-19 pandemic, preschool children were informed of the importance of personal hygiene through the use of various methods, including reading books, showing animated films, telling stories, simulation techniques, singing, playing games and asking children to talk to their parents about what they learned at school, and it was found that children learned most from animated films and games.

In a study conducted to examine the short-term effects of hygiene education in preschool children, Ramseier et al. (2007) reported that, following training provided in the form of 15-min presentations and practical demonstrations for four weeks, children who received training displayed significantly better hygiene behaviors compared to children who did not receive training.

Calvert (2017) reported that when young children watch videos or television shows they view cartoon characters as social partners, similar to their real-life friends and teachers. In a study of 92 children aged 4–6 years, Zhang et al. (2023) directed one group to watch videos in a training session and used cartoon characters with the other group, and found that the close affinity children had with cartoon characters facilitated their cognitive participation in the content of the training, made them think about the content and improved learning outcomes. Previous studies in literature have shown that the use of cartoon characters as training tools in particular can grasp the attention of young children, and affect their behaviors and attitudes (Halford & Boyland, 2013; Roberto et al., 2010).

The findings of these studies, together with those of the present study, indicate that animated cartoons with characters that children love may be effective in teaching positive health behaviors. This, in turn, underlines the importance of social learning theory. Preschool children, in particular, imitate the behaviors of the characters they take as role models by observing them, and try to act like them in their daily lives. The findings of the present study showed that training provided to the intervention group, which used cartoons designed to support children's learning process, attract their attention, motivate them and facilitate their learning, was effective in helping them acquire target self-care behaviors.

With the technological changes and developments in the field of mass media, the processes described by Social Learning Theory have come to play an important role in the social development of children (Bayrakcı, 2007; Gümüş & Adam, 2020). Studies show that using animated films as learning materials and making the learning process tangible through interactive experiences aid children in the acquisition of knowledge (Wang et al., 2016; Wang et al., 2021).

Bandura argues that many behaviors are acquired through the observation and modeling of those of others. Children can learn positive behaviors from people/characters that they take on as role models, but can also learn negative behaviors such as aggression from live models, symbolic models or verbal directives (Bandura, 2002).

The use of Social Learning Theory for educational purposes requires, first, the identification of the behaviors and people to be modeled. Training can involve live models (e.g. parents, teachers, or peers) or symbolic models (e.g. TV personalities, or characters from books or cartoons) (Bandura, 2002).

Children tend to identify with the cartoon characters they watch and strive to be like them by imitating their behaviors. Preschool children often adopt the cartoon characters that they identify with as role models, and attempt to replicate their behaviors in their daily lives (Bayraktar, 2014; Yağlı, 2013). It was noted in the present study that children in the intervention group identified most with the symbolic cartoon characters that attracted their attention as role models, and started to replicate their positive health behaviors.

A well-written script, high-quality sound and visual effects, and compelling behaviors are important factors influencing the adoption of a cartoon character as a role model by children (Wijethilaka, 2020). The cartoon characters used in the present study were not characters that the children were familiar with, however, the animated films were based on well-written, expert-approved scripts and featured compelling sound and visual effects, increasing their effectiveness. As a result, the animated characters and their behaviors succeeded in grabbing the children's attention, leading to an increase in the positive self-care-related health behaviors of the intervention group than in the control group.

Social competence behaviors

The present study found that children in the intervention group had significantly higher posttest scores on the social competence dimension of the social competence and behavior scale, as well as on the scale as a whole, compared to the control group. Moreover, they had significantly lower posttest scores on the remaining two dimensions (anger-aggression and anxiety-withdrawal) compared to children in the control group (Table 3). These findings are consistent with Hypothesis 2. The training program applied to the intervention group, which used cartoons and was based on the social learning theory, was found to be effective.

Many researchers note that social competence develops fairly rapidly in early childhood (Denham et al., 2012; Thayer, 2012; Vahedi et al., 2012). In a study conducted to examine self-care and social competence behaviors among preschool children, Zhu et al. (2022) found that children made significant progress in terms of acquiring social competence behaviors particularly toward the end of the preschool period. More specifically, they were better at offering explanations, practicing self-control, cooperating, and displaying social competence behaviors in general.

Studies have shown that in the preschool period in particular, children are affected by the animated films they watch, as well as the behaviors of their parents. Children learn and reinforce positive or negative behaviors by imitating cartoon characters, and treat their parents as role models. In a study investigating the effects of television on preschool children, Türkkent (2012) found that children were influenced most by animated films, reporting that a vast majority of the mothers and nearly all the teachers who participated in the study were of the opinion that children were affected by animated films, advertisements and children's programming. Rapid advances in technologies and their widespread adoption mean that children today turn to technology to acquire the training and social competence skills that families used to provide. Due to their level of cognitive development, preschool children may not always distinguish between fact and fiction when watching animated films, and may imitate cartoon characters and copy their behaviors as role models (Gümüş & Adam, 2020). The positive models encountered by children in their social environments or in the animated films they enjoy can initiate the acquisition of healthy behaviors in the personality development of young children, and habits acquired in the preschool period often carry over to adulthood (Gümüş & Adam, 2020; Karaoğlu & Ünüvar, 2017; Yetim & Sarıçam, 2016). Animated films are used in preschool education to instill and shape culturally and socially acceptable behaviors (e.g. being respectful, sharing, cooperating, helping others). Studies on this subject argue that cartoons used in education are effective in helping children acquire positive behaviors (Gümüş & Adam, 2020; Karakuş, 2016). At this point, the impact of social learning theory on children's learning situations also emerges. Children who learn by observing and taking role models begin to behave like them, paying particular attention to the behavior of the characters they watch.

In a study of 180 3–5-year-old children by Li et al. (2021), 90 of the participants were directed to watch 16 animated films depicting fantastic or real events evoking either positive or negative emotions, and after watching each film, the children were asked whether the event could happen in real life. The study found that children who watched the animated films had more positive than negative feelings, and it was thus concluded that animated films could be used to steer children in the acquisition of positive behaviors. It was found also in the present study that training making use of animated films aided the intervention group in the acquisition of positive social competence behaviors, supporting the previous findings supporting the use of animated films based on social learning theory in childhood education.

Wijethilaka (2020) reported that watching animated films affected the likes and dislikes of children, as well as the ways in which they relate to their peers, their manners of speech, their clothing choices, and their eating habits and health behaviors. In a study of 200 children aged 5–10 years, Rai et al. (2016) found that 24% of the sample spent >2 h a day watching animated films, that 61% of the respondents imitated the cartoon characters depicted in animated films, that 73% became more sensitive to others, and that 70% became more likely to share and help others. The study reported further that 73% of the children developed a greater sensitivity to other people after starting watching animated films, and concluded that positive animated films could aid in the teaching of anger management, polite speech, altruism and empathy.

In a study conducted to examine the relationship between social problem solving skills on the one hand and social competence, anger-aggression and anxiety-withdrawal behaviors on the other, among children attending preschool education, Tozduman Yaralı and Özkan (2016) found that children received high scores on the social problem solving scale. They also found that mean scores on the Social Competence and Behavior Assessment Scale were high, while anger-aggression and anxiety-withdrawal scores were low. In a study examining how preschool children are affected by television in their daily lives, Lillard and Peterson (2011) directed one group of children to watch animated films with violent content, and the other group to watch educational animated films, and reported that the preschool children who watched the educational films displayed less aggressive and healthier social behaviors than those who watched the films with violent content. Tripathi et al. (2016) report that children who watch animated films depicting socially positive behaviors can learn how to manage their anger, speak politely, help others, cooperate in a group and avoid being jealous of peers.

The findings of these studies are consistent with those of the present study. Social competence training conducted on the basis of the main stages of the Social Learning Theory (attention, retention, repetition, and motivation) is effective in acquiring skills to children such as speaking up in the classroom, listening to classmates when they talk, sharing, offering help, and waiting for one's turn. It was found that, after receiving training on the basis of the social learning theory, children in the intervention group received lower scores on the anger-aggression and anxiety-withdrawal dimensions of the social competence and behavior scale. This finding underlines the importance of learning from role models and via observation, especially in the preschool period. Cartoons can be used as an effective tool in providing social learning theory-based training to help preschool children acquire desired behaviors.

Implications to practice

After receiving training that made use of cartoons prepared on the basis of social learning theory, children in the intervention group received significantly higher scores on the self-care scale and the social competence and behavior scale, compared to the control group. In addition, they received significantly lower scores on two dimensions of the social competence and behavior scale (anger-aggression and anxiety-withdrawal), compared to the control group. These findings indicate that the training provided to the intervention group was successful in significantly improving self-care and social competence behaviors among preschool children.

School nurses, in particular, play an important role in the health education provided to preschool children. In preschool period, children learn by observing and imitating their adopted role models. Due to this reason, health training program should be based on the stages of Social Learning Theory. Animated films created around scripts that focus on the target behaviors to be acquired by children can be used as training tools by school nurses for the provision of health training to preschool children.

Limitations

The findings of the present study are limited to the sample, and cannot be generalized to other age groups.

Since the scale forms used in this study were filled out by teachers, blinding was applied to the teachers. However, it is considered that children may share information with their teachers after the training provided. This situation is thought to be a limitation for the study.

Different numbers of repeated measurements were conducted for the intervention and control groups. The uncertainty about whether the difference arises from the repeated measurements is considered a limitation for the study.

Conclusions

In the present study, a total of 20 training sessions were hosted over four months based on the stages defined in Social Learning Theory, making use of animated films focused on target behaviors related to self-care and social competence as training tools. The training program was found to have a significant effect on the self-care and social competence behaviors of the intervention group. The use of Social Learning Theory in the training process is effective in the acquisition of the desired behaviors through attention, retention, reproduction and motivation.

The animated films supported the learning processes of the children while they had fun. To foster children for acquiring desired behaviors, it is important to offer them proper role models that they can observe. Future studies with different age groups of children should test the effectiveness of Social Learning Theory in teaching other health-related behaviors.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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