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# Journal of Child and Family Studies

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# Effects of Triple P on Digital Technological Device Use in Preschool Children

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**Abstract** Recent studies about Positive Parenting Program (Triple P) have documented benefits in preschool children and their parents. Little, however, is known about how Triple P interventions affect young children's digital technological device use. Maternal well-being, which was associated with early digital technological device use, is targeted in Triple P and as a result benefits on maternal well-being and family functioning, and parental and children's digital technological device use can change. This study was conducted using the pretest-posttest quasi-experimental design to determine the effect of Triple P on digital technological device use in preschool children. The study consisted of mothers ( $n = 76$ ) and children ( $n = 76$ ) aged between 3–6 years in a state hospital located in the Cappadocia region in 2016. Triple P was provided to mothers once a week over a total of 3 sessions. A Parent Child Information Form, General Health Questionnaire (GHQ), and Family Assessment Device (FAD) were administered to the participating mothers. It was determined

that after the intervention, the duration of digital technological device use decreased, the aims of using digital technological devices changed, and maternal well-being and family functioning improved. Our findings suggest that family functioning and maternal well-being affect children's digital technological device use, duration, and type. Focusing on families' education and needs may help the development of more beneficial digital technology use.

**Keywords** Digital technology · Family functioning · Maternal mental health · Positive parenting

## Introduction

Today's children are born into a technologically enriched world, which could result in various experiences and opportunities, and they are able to use digital technological devices such as smart phones and tablets anytime and anywhere from early ages (Strader 2010). The rapid adoption of digital technology has caused an explosion in many societies in terms of the use of electronic media games and learning packages by preschool children (aged 3–6 years) (Prensky 2001; Rideout 2013; Vandewater et al. 2007; Vandewater and Lee 2009). These developments suggest that use of digital technological devices will gradually increase, which will further affect our daily lives.

In a study conducted in Hong Kong; Johnson (2010) determined that 70–90% of preschool children encountered computers at home or school. Although the American Academy of Pediatrics (AAP) recommends that children use digital technological devices for less than 2 h a day, this duration is exceeded by approximately 50% in many

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developed societies (AAP 2011, 2013). Promises of developmental or educational benefits of digital technology supports the marketing strategies of producers (Fenstermacher et al. 2010; Garrison and Christakis 2005; Schuler et al. 2012). For example, device use may enable learning, alphabet recognition or reading skills acquisition, or obtain and build language and mathematical skills (Jackson et al. 2011). It may also assist visual intelligence skills and psychomotor skills at the cognitive level (Li et al. 2006).

Digital technology may, however, have negative effects on the physical, psychological and social development of preschool children. It may cause less physical activity, which can result in obesity or musculoskeletal disorders (Bremer 2005). Spending more time with digital technological devices may cause psychological problems such as addiction, depression, as well as aggressive and violent behaviors (Jackson et al. 2011). It has also been observed that preschool children experience difficulties in distinguishing the real life from the virtual world (Subrahmanyam et al. 2000). This may result in a decrease of time spent with the family and intra familial communication, (b) increased social isolation, and (c) damaged interpersonal skills of preschool children (Jackson et al. 2011). Studies showed that parental education and parents' appropriate behaviors aimed at setting appropriate models were important factors for the safe use of digital technological devices in preschool children (Wu et al. 2014; Zhao 2009). When considering the negative effects of digital technological devices, it is thought that families should protect their children accordingly (Wu et al. 2014). However, different attitudes of families towards their children's use of digital technological devices may also affect the children's behaviors towards such devices.

In Lee et al. (2009) study, it was found that family conflict was associated with an increase in television use over time (Lee et al. 2009). In another study, researchers found that family conflict was negatively correlated to educational media use by 2–5-year-old children (Vandewater and Bickham 2004). Valcke et al. (2010) determined that children of families with tolerant attitudes had a higher rate of internet use than children of families with democratic attitudes (Valcke et al. 2010). Hsu (2005) stated that internet addiction was higher in the children of negligent families. For instance, it was stated that there was a direct relationship between the attitudes of families towards the use of the internet and internet addiction (Tsai et al. 2009). In a study conducted with college students in China, it was also determined that most internet-addicted students had a lack of family interest (Huang et al. 2009). Children who are unable to receive necessary support from their families and experience problems with them try to express themselves in the virtual world as a result (Lim et al. 2004). Parenthood

stress may be one of the reasons that prevents or inhibits family support.

Parental stress, which starts with having children, increases even further in the course of time (Glading 2002). Changes in the family system, recently acquired roles, values, limits of family members or difficulties, or changes experienced by family in the course of life may cause parents to have stress (McKenry and Price 2005). In addition, the increase of parents' stress may cause the decrease of their positive perceptions concerning parenting roles and affect the family functionality (Respler-Herman et al. 2011). Studies have also revealed that stress causes inappropriate parenting attitudes (Azar and Weinzierl 2005; Respler-Herman et al. 2011). Mental health and depression of mothers in particular are among the most important risk factors for a child's social, emotional, and cognitive development (Linderkamp 2006). Maternal depression causes both introversion and extroversion problems of children (Stein et al. 2008), and maternal depression might also be related with preschool children's digital technological device use. Pempek and McDaniel (2016) study showed that maternal personal and relational well-being was negatively related with children's tablet use. It was previously shown that difficulties in mother-child interaction, which is influenced by maternal stress, were associated with many addictions (De Rick and Vanheule 2007; Kassel et al. 2007; McNally et al. 2003; Şenormancı et al. 2014). A recent study also revealed the relationship between anxious or ambivalent mother-child attachment and internet addiction (Shin et al. 2011).

Parent training programs could primarily be evaluated as a factor in the arrangement of behavior patterns of parents towards their children and the regression of psychological problems experienced by parents, such as stress, depression, and anxiety, owing to their positive effects in helping to construct more healthy parent-child communication (Joussemet et al. 2014). In studies conducted with parenting programs (Triple P, Chicago Parent Program, Webster-Stratton Incredible Years), it was determined that the implementation of such programs resulted in decreased negative parenting (decreased rate of authoritarian attitudes, fewer conflicts with children); development of positive parenting skills such as supporting positive relations, teaching the child new skills and behaviors, efficiently managing problematic behaviors, supporting the child regarding behaviors to be learned; and positive developments in the mental health of mothers (Adamson et al. 2013; Breitenstein et al. 2012; Morawska et al. 2014; Sanders et al. 2014, 2016; Wilson et al. 2012; Wittkowski et al. 2016).

Preschool years can be considered as a formative period for lifelong physical and mental health. As such, these years may be important for early effective intervention. In fact,

parenting behaviors play significant roles in the optimization of child development (Bögels and Brechman-Toussaint 2006). Furthermore, interventions for parents can be thought as efficient and cost effective methods for improving child behavior and adjustment (Dretzke et al. 2005; Sanders et al. 2014, 2016; Taylor and Biglan 1998; Wyatt Kaminski et al. 2008; Wilson et al. 2012; Wittkowski et al. 2016).

The Positive Parenting Program (Triple P) is one such program that was developed by Matt Sanders in 1977 at the University of Queensland in Australia. It is organized as a preventive program that includes family support strategies, and has the target group of children aged between 0 and 16 years (Sanders and Turner 2005; Sanders et al. 2008). The program aims to build a positive relationship between children and parents, develops positive parenting skills, supports children's abilities and development, and provides skills for parents to manage problematic behaviors (Sanders and Turner 2005). In addition, the program also aims to teach effective communication skills to parents and reduce parental stress. Positive parenting characteristics in the program are defined as parents who can create safe and positive learning environments, implement effective discipline methods, and target realistic goals (Sanders and Turner 2005; Sanders et al. 2008).

To the best of our knowledge, the effects of Triple P on digital technological device use has not been examined in the literature. Triple P, which is an easily accessible parenting program, may also be effective for uncontrolled digital technological device use. It is hypothesized that Triple P will be effective on increasing parental knowledge about digital technological devices, efficient on decreasing maternal stress and family conflicts, and consequently, children's digital technological device use will become more appropriate. In line with above, the aim of this study was to examine the effects of Triple P on the use of digital technological devices by preschool children, family functionality, and mental health of mothers. Additionally, this study investigated the following research question: "Is it possible to reduce screentime with Triple P?"

## Method

### Participants

Before the study, training sessions were announced on the internet page of the related state hospital and Public Health Center and the public was informed through brochures in the hospital and Public Health Center. Following this advertising stage, 92 mothers with children aged 3–6 years participated in the first session of the study; 72 of the 92

mothers participated in all training sessions. It is noted that participation in the study was voluntary.

### Procedure

This study was conducted using a pretest-posttest quasi-experimental design. The study was conducted in a state hospital in the Cappadocia region, Turkey. In the study, positive parenting training sessions (Triple P) were conducted with participants in a total of 3 sessions (one session per week, 2 h per session on average) over the course of three weeks.

### Implementation of Training

Training sessions were held in the hospital's meeting room. This room had enough equipment and lighting facilities to accommodate the presentations, which were used as educational materials, and allow group members to interact with each other; no breaks were taken during the sessions. Lectures, question-answer drills, and discussion methods were used in the sessions. In addition, the mothers were asked to share their own experiences and contribute to finding solutions in a "What would you do if you were them?" activity. At the end of the sessions, parents who needed further assistance and support were directed to the psychiatry clinic and child psychiatry department.

### Program Content

The Triple P seminar series provided guidance on basic healthcare services and moderate behavioral problems. The seminars were short and included primary prevention interventions aimed at providing behavioral guidance for the early diagnosis of children with mild behavioral and emotional problems by parents. The purpose was to eliminate important behavioral problems at the beginning. The Triple P seminar series consisted of 3 seminars of approximately 120 min duration. Seminar subjects were 'The Power of Positive Parenting,' 'Raising Confident, Competent Children,' and 'Raising Resilient Children.' These 3 seminars were independent of each other and the parents could participate in any one they chose or in all. The seminars were informative short sessions aimed at raising awareness of parents (Sanders and Turner 2005; Sanders et al. 2008). Each seminar included presentations, questions and answers, and at the end of the seminar, parents were directed to the relevant departments of child psychiatry and psychiatry for further assistance and support.

Triple P seminars are second level interventions in the Triple P system. Five different levels of service delivery types (group, self-directed, individual, telephone-assisted) are adapted according to the families' changing need levels

and preferences (universal, selective, primary care, standard, enhanced). This cover, which provides universal parenting information through visual and targeted initiatives, was performed with the help of booklets. This method allows the creation of a greater public health impact by reaching greater numbers of people, especially in rural areas (Markie-Dadds and Sanders 2006; Nowak and Heinrichs 2008). Level 2 (selective) Triple P was used in the in present study.

As can be seen in Tables 1, 36.6% of participating mothers ( $n = 28$ ) were aged 30 years and older, and 63.4% ( $n = 48$ ) were younger than 30 years. Fifty-two (68.4%) mothers had graduated from high school, 15.8% ( $n = 12$ ) were university graduates, 52.6% ( $n = 40$ ) were housewives, and 13.2% ( $n = 10$ ) were separated from their husbands. Regarding the children, 52.6% ( $n = 40$ ) were boys and 34.2% ( $n = 26$ ) were aged 3 years.

At the end of the study, mothers whose GHQ scores were higher than 8 were directed to adult psychiatry for further assistance. Of the mothers identified as needing further assistance and support, 12 were referred to psychiatry. Seventeen children, whose mothers were concerned about behavioral problems, were referred to child psychiatry.

## Measures

### *Parent child information form*

The form focused on the demographics of the children, parents, home environment, patterns of parent-child interaction, and children's digital technology use (including type, availability, content, purpose and frequency/duration of child's digital technology use in the last 1 month). Initial questions were about activities that included the use of TV, tablet, and smart phones. Duration of TV, tablet, and smart phone use within a time period of one week was investigated in the second part. Knowledge of parents about the negative effects of digital technology (e.g., radiation problems, physical inactivity) were inquired in the next step. Finally, the mothers were asked about levels parental supervision they provided. This form was created by reviewing the related literature.

### *The McMaster family assessment device (FAD)*

The FAD was developed by Epstein et al. (1983). The FAD was administered to the parents to evaluate family functioning and to outline the problematic dimensions of family functioning (Epstein et al. 1983). It includes 60 items that are divided into seven different areas: (1) Problem Solving, (2) Communication, (3) Roles, (4) Affective Responsiveness, (5) Affective Involvement, (6) Behavior Control, and (7) General Functions. Scores for the scale range between

**Table 1** Sociodemographic features of mothers and children

	n (%)
Children's age	
3 years	26 (34.2%)
4 years	26 (34.2%)
5 years	14 (18.4%)
6 years	10 (13.2%)
Children's gender	
Female	36 (47.8%)
Male	40 (52.6%)
Maternal age	
20–30 years	48 (63.4 %)
>30 years	28 (36.6 %)
Mothers' education	
Reading-writing	2 (2.6%)
Primaryschool	10 (13.2%)
High school	52 (66.4%)
University	12 (15.8%)
Working status	
Housewife	40 (52.6%)
Special work	10 (13.2%)
Officier	26 (34.2%)
Marital status	
Married	66 (86.8%)
Divorced	10 (13.2%)
Socioeconomic status (Due to maternal informations)	
Low income	12 (15.8%)
Middle income	50 (65.8%)
High income	14 (18.4%)

1.00 (healthy) and 4.00 (non-healthy). Generally, scores above 2.00 are accepted as a non-healthy tendencies in family functioning. The reliability and validity of the Turkish version of FAD has previously been conducted by Bulut (1990) who reported the test–retest reliability of the device as ranging between 0.62 and 0.90. Therefore, instead of re-translating the FAD, Bulut's (1990) Turkish version of the survey was used in this study.

The subscale of "Roles" in the FAD is an evaluation that determines the levels of family members fulfilling their tasks. By virtue of information and experiences acquired from the seminars, parents become knowledgeable about their attitudes and behaviors to be displayed in their parenting roles and fulfil their roles much better. The subscale of "Affective responsiveness" could be described as showing the appropriate reaction against the stimuli. The subscale of "Communication" in the FAD evaluates intra-familial communication. Similarly, the subscale of "affective involvement" includes the interest, care and love of

family members toward each other, and it is very important for this interest to be sufficient. The subscale of "Behavior Control" includes an evaluation concerning discipline applied by parents.

*General health questionnaire (GHQ)*

The GHQ is a screening device for identifying minor psychiatric disorders in the general population and within community or non-psychiatric clinical settings such as primary care or general medical outpatients GHQ-12 (Goldberg and Blackwell 1970). Kilic (1996) completed the Turkish forms' validity and reliability in 1996 and its Cronbach's alpha is 0.94. Thus, the Turkish version of GHQ was used to examine maternal mental health in this study.

*The ethical dimension of the Study*

This study was conducted in accordance with the principles of the Helsinki Declaration. Prior to the administration of the questionnaire and the scales, mothers present in the training sessions were informed about the purpose of the study and that participation in the study was voluntary. Ethical committee approval (Nevşehir Hacı Bektaş Veli University Ethics Committee), institutional approval from the relevant State Hospital, and verbal and written consent from the mothers were received in order to conduct the study.

**Data Analyses**

The data analysis was performed using IBM SPSS Statistics 18.0 (Statistical Package for the Social Sciences) software package and *P* values of  $p < 0.05$  were accepted as statistically significant. Continuous variables are summarized and presented accordingly. This (unless otherwise stated) refers to the number of patients (*n*), mean, and

standard deviation (SD). Categorical data are presented using either absolute or relative frequencies. The data obtained from the measurements are shown as the arithmetic median and quartiles, and data obtained by counting are shown as percentage. The change from baseline to end-of-program measurements was compared using the Wilcoxon test because the scores were not normally distributed. Assumptions of normality were evaluated using the Shapiro–Wilk test.

**Results**

The analysis of the responses revealed a statistically significant difference between pre- and post-test results in GHQ ( $p = 0.001$ ), behavior control ( $p = 0.002$ ), affective involvement ( $p = 0.01$ ), affective responsiveness ( $p = 0.037$ ), and roles ( $p = 0.022$ ) in subscales of the FAD (see Table 2).

Activities with digital technological devices before and after the intervention are shown in Table 3, and the duration of these activities is detailed in Table 4. Regarding children's activities, as shown in Table 3, watching cartoons was the most preferred activity for TV use, and watching videos was the most preferred activity for tablet and smart phone use. As presented in Table 4, after the intervention, the amount of time of children reported using technological devices decreased. As such, before intervention, 39.6% ( $n = 30$ ) of children watched TV for more than 5 h per week, and this percentage decreased to 3.9% ( $n = 3$ ) after the intervention. Prior to the start of Triple P, 31.58% ( $n = 24$ ) of children spent 3–4 h using tablet computers. However, following the Triple P program, this percentage decreased to 10.4% ( $n = 8$ ). In addition, the percentage of children who reported spending 2 h per week using smartphones decreased from 30.3% ( $n = 23$ ) to 9.2% ( $n = 7$ ) after the intervention.

**Table 2** Comparison of FAD and GHQ scores before and after intervention

	Preintervention median (25th–75th percentile)	Postintervention median (25th–75th percentile)	<i>P</i>
FAD			
Problem solving	2.10 (1.50–2.30)	2.00 (1.50–2.30)	0.663
Communication	2.00 (1.80–2.20)	2.00 (1.60–2.20)	0.055
Roles	2.00 (1.50–2.30)	1.90 (1.50–2.20)	<b>0.022</b>
Affective responsiveness	2.00 (1.50–2.30)	1.80 (1.50–2.00)	<b>0.010</b>
Affective Involvement	2.00 (1.80–2.00)	1.90 (1.40–2.03)	<b>0.037</b>
Behaviour control	2.00 (1.80–2.35)	2.00 (1.20–2.30)	<b>0.002</b>
General functions	2.00 (1.70–2.00)	2.00 (1.70–2.00)	0.127
GHQ	3.00 (2.00–4.00)	2.80 (2.00–3.00)	<b>0.001</b>

FAD Family Assessment Device, GHQ General Health Questionnaire

Statistically significant values are in bold

**Table 3** Activities with digital technology before and after intervention

Activities	Preintervention			Postintervention		
	TV n (%)	Tablet, computer	Smart phone	TV	Tablet, computer	Smart phone
Videos	–	62 (81.5)	60 (78.9)	52 (68.4)	5 (3.9)	–
Cartoons	74 (97.3)	21 (27.6)	4 (5.2)	72 (94.7)	21 (27.6)	–
Music	8 (10.5)	52 (68.4)	30 (39.4)	4 (5.2)	41 (53.9)	4 (5.2)
Photos you take	6 (7.8)	60 (78.9)	52 (68.4)	4 (5.2)	41 (53.9)	40 (52.6)
Videos you make	4 (5.2)	56 (73.6)	52 (68.4)	4 (5.2)	40 (31.7)	40 (52.6)
Games for fun	4 (5.2)	20 (26.3)	41 (53.9)	2 (2.6)	10 (13.1)	24 (31.5)
Games for learning	2 (2.6)	22 (28.9)	33 (43.4)	4 (5.2)	16 (21.0)	20 (26.3)

**Table 4** Duration of digital technology before and after intervention

Duration	Preintervention			Postintervention		
	TV n (%)	Tablet, computer	Smart phone	TV	Tablet, computer	Smart phone
0 h	–	8 (10.5)	12 (15.8)	–	8 (10.5)	29 (38.1)
Less than 1 h	–	–	4 (5.2)	–	4 (5.2)	11 (14.5)
1 h	–	–	16 (21.1)	2 (2.6)	6 (7.8)	18 (23.7)
2 h	10 (13.2)	12 (15.8)	23 (30.3)	20 (26.3)	28 (36.8)	7 (9.2)
3–4 h	11 (14.4)	24 (31.58)	17 (22.4)	21 (27.6)	8 (10.4)	11 (14.5)
5 h	15 (19.7)	18 (23.7)	4 (5.2)	30 (39.6)	4 (5.2)	–
More than 5 h	30 (39.6)	–	–	3 (3.9)	–	–

Table 5 shows the parents' level of knowledge of the negative effects of digital technology before and after the intervention. The aims of using digital technology are shown in Table 6. After the intervention, parents' levels of knowledge increased and their aims of using digital technology changed positively. Radiation problems, physical inactivity, and addiction risk were little-known negative effects of digital technological devices. After the intervention, these ratios increased by a great extent. For example, before the intervention, the number of parents who reported knowing about radiation problems that could be caused by the use of digital technology was 31, and this increased to 76 after the intervention (see Table 5). After the Triple P sessions, the percentages of parents' aims for using digital technology for the following purposes increased; (a) learning (b) language development, (c) development of eye hand coordination, and (d) improved visual memory.

## Discussion

This study investigated the effects of Triple P on the use of digital technological devices by children. The results suggested a decrease in the durations of children's digital technological devices use. In addition, the purpose for using digital technological devices, which was explained by mothers, changed from having fun and spending free time to learning and development of eye-hand coordination,

**Table 5** Knowledge of parents about digital technology before and after intervention

Knowledge of parents	Preintervention n (%)	Postintervention n (%)
Radiation problem	31 (40.8)	76 (100)
Not suitable for preschool children	14 (18.4)	64 (84.2)
Negative effects on child development	12 (15.8)	68 (89.5)
Physical inactivity	17 (22.4)	49 (64.5)
Contributes to introversion	11 (14.5)	69 (90.8)
Health hazard	13 (17.1)	71 (93.4)
Addiction risk	3 (3.9)	68 (89.5)
Time with parental supervision		
0 h	48 (63.2)	
1 h	18(23.7)	40 (52.8)
2 h	10(13.2)	21 (27.6)
3–4 h		15 (19.7)
5 h		

visual memory, and cognitive skills. The results also showed that families' awareness of the possible harmful effects of using digital technological devices increased. As a secondary outcome of this study, the mental health of mothers and family functioning improved after Triple P.

**Table 6** Aims of using digital technology before and after intervention

Aims	Preintervention			Postintervention		
	TV n (%)	Tablet, computer	Smart phone	TV	Tablet, computer	Smart phone
Learning	40 (52.8)	49 (64.5)	21 (27.6)	48 (63.2)	63 (82.8)	36 (47.4)
Fun	68 (89.5)	69 (90.8)	57 (75)	66 (86.8)	61 (80.2)	55 (72.4)
Language development	12 (15.6)	21 (27.6)	13 (17.1)	26 (34.2)	24 (31.6)	22 (29)
Development of eye hand coordination	8 (10.5)	12 (15.6)	10 (13.2)	4 (5.2)	21 (27.6)	24 (31.6)
Development of visual memory	34	36 (47.3)	32 (42.1)	62 (81.5)	47 (61.9)	49 (64.5)
Adaptation of technology	21 (27.6)	39 (51.3)	34 (44.7)	18 (23.6)	58 (76.3)	61 (80.2)
Development of cognitive skills	21 (27.6)	18 (23.7)	13 (17.1)	17 (22.4)	32 (42.1)	34 (44.7)
Spending time	68 (89.5)	65 (85.5)	54 (68.2)	21 (27.6)	25 (32.9)	24 (31.6)

Consistent with the findings of previous studies, which found that tablet use of children and parents had increased in recent years (Rideout 2013; Wartella et al. 2013), 62 (81.5%) families in our sample owned a tablet and 52 (66.4%) had smart phones. This supports the idea that using digital technological devices is much quicker nowadays; therefore, parents play an important role concerning the healthy use of digital technological devices by their children (Zhao 2009; Wu et al. 2014).

In the present study, it was observed that parents allowed their children to use digital technological devices mainly for education and learning after Triple P. This could be associated with the fact that Turkish culture attaches great importance to academic achievement and future success, and this was a result of its perception as “good” parenting, which has also been observed in many other cultures (Chan and Au 2011; Lim and Soon 2010; Şenormancı et al. 2014). Another study conducted in China showed that the use of technology in preschool children was related to education at the rate of 60%, and giving importance to education was also associated with “good” parenting in this culture (Wu et al. 2014).

The results obtained in the current study indicate that providing developments in family functionality in the preschool period can decrease children’s duration of using digital technological devices. This suggests that it is possible to develop children’s abilities of appropriately using digital technological devices with the help of early interventions in family functionality. In their large-sample study, Yen et al. showed that children’s unhealthy family relationships and domestic conflicts were associated with excessive and inappropriate use of the internet and digital technology overuse (Yen et al. 2007). In other studies, it was also indicated that domestic violence and miscommunication were associated with internet abuse in children, and it was recommended that families be involved in the treatment of internet addiction (Park et al. 2008). In the present study, it was found that the mental health of

mothers and family functioning improved after Triple P, and it was an important development for preventing possible problems that might be caused by inappropriate technological device use. Owing to the results of the present study, it is considered that changes in the duration of children’s digital technological device use, the ways of using them, and family functioning affect each other reciprocally. On one hand, difficulties in the mental health of mothers may result in the excessive use of digital technological devices, on the other, the recovery of the mental health of mothers may enable children to use digital technological devices less and more appropriately under the supervision of their parents.

On evaluating the mental health of parents in the present study, a significant decrease was determined in the post-program GHQ scores of parents compared with pre-program scores. The last and largest meta-analysis of Triple P (Sanders et al. 2014) showed that it was very effective in dealing with parenting stress (Sanders et al. 2014). When comparing the mean scores obtained by parents from the subscales of “Communication,” “Roles,” “Behavior Control,” “Affective responsiveness,” and “Affective involvement” in the FAD before and after the program in the present study, there was a statistically significant decrease in the post-program mean scores. In a Triple P study conducted in Turkey for the purpose of evaluating family functionality using the FAD, it was determined that the scores of problem solving, communication, intra-familial roles, affective involvement, behavior control, and general functioning subscales of the FAD were statistically significant decreased (Öztürk 2013). In Triple P studies conducted with children and adolescents, families were evaluated with different scales and it was found that there was a decrease in non-functional attitudes of families and an increase in their communication with each other (Bor et al. 2002; Hoath and Sanders 2002). Also, in the study conducted by Treacy et al. (2005), a 9-week family training treatment was applied to the families of children with attention deficit hyperactivity



disorder (ADHD). The general functioning of families was evaluated with the FAD and a significant increase was observed for the experimental group compared with the control group in the post-training period.

It is very important to provide positive parenting roles and display positive parenting attitudes in order to be more mature and develop positive family relations (Şenormancı et al. 2014). Similarly, children will become healthy adults only when they are raised in families with healthy functionality, and it is possible to increase intra-familial communication by distributing intra-familial roles, showing appropriate and efficient discipline, and affective involvement (Siomos et al. 2012).

As it was found in present study, improving affective involvement and family functioning may be efficient regarding appropriate use of digital technological devices. The increase of intra-familial communication may bring about the reality and joy of learning and having fun in the real world compared with the virtual world.

This study has several limitations that should be considered. The lack of a control group and the small sample size certainly restrict the conclusions. Another limitation is that only mothers were asked to provide their child's digital technology use. Research about children's TV watching indicated that parent reports were less accurate than other methods such as viewing diaries (Anderson et al. 1985). Furthermore, studies that use media-use diary methods to determine frequency and duration may more accurately measure time spent on certain activities. The further support information that was given to the participants may also have affected the post-test results.

Even though this study revealed that the Positive Parenting Program provided development upon children's use of digital technological devices, family functionality, and mental health of mothers, it is important to examine the long-term effects of the program for evaluating its efficiency. Further detailed studies with larger samples are required in order to evaluate the efficiency of the Positive Parenting Program on children's use of digital technological devices, strengthening the mental health of mothers, and increasing family functions.

**Author Contributions** G.Ö.: designed and executes the study and wrote the paper; Ç.D.: collected the data and forms; Z.Ç.: provided the data analysis and wrote the results; D.E.: collaborated with the design and writing of the study.

#### Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no competing interests.

**Ethical Approval** All procedures performed in the present study were in accordance with the ethical standards of Nevşehir Hacı Bektaş Veli University Ethics Committee and with the 1964 Helsinki declaration and its later amendments.

**Informed Consent** Informed consent was obtained from all individual participants included in the study.

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