

A Program for Parents' Screen Time Reduction for Preschool Children: A Quasi-experimental Study

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Abstract: Excessive screen time affects the development and health outcomes among children. This quasi-experimental study examined the effects of the newly developed Parents' Screen Time Reduction for Preschool Children Program, a training program for parents' planned behaviors and the screen time reduction of their children. The participants were dyads of parents and preschool children aged 2-5 years, where the child's screen time was more than one hour per day. Sixty-seven parents were recruited from two childcare centers in a province in northeast Thailand, comprising 35 in the experimental group and 32 in the control group. Instruments to measure study outcomes focused on parents' attitudes, subjective norms, perceived behavioral control, and intentions, and the distal result was behaviors. For children, the outcome was screen time reduction. Data analyses were descriptive statistics, chi-square, independent t-test, Mann-Whitney U test, and generalized estimating equations.

The findings revealed that the children's screen time in the experimental group decreased significantly more at one week and two months after the completion of the intervention than that of the control group. The mean scores of parents' attitudes and parents' behaviors in the experimental group were significantly more positive higher than those in the control group immediately after the intervention; the mean score of parents' perceived behavior control was significantly higher than that of the control group two months after the intervention. Nurses and teachers can use this program among parents to perform appropriate screen time behaviors to promote development and health outcomes among children. However, further testing of the program using randomized controlled trials is required before widespread use in practice.

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Introduction

In our technology-based society, various forms of screen viewing are widely and increasingly present in children's lives, including television, tablets, smartphones and game consoles. Many young children around the world are spending more time viewing screens.¹ In Thailand, young children's screen time increases

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continually,² and most children under five use these electronic screen devices. Thai children aged under five years average screen viewing for more than two hours daily.²⁻³ The most frequent media use among Thai children aged 2–5 years is cartoons and movies.⁴

The World Health Organization (WHO) provides recommendations about screen time that children under two years should not be exposed to screen time, and children 2–5 years should have limited screen time of no more than one hour daily.¹ These WHO recommendations are similar to guidelines by the American Academy of Pediatrics (AAP).² The AAP and the Royal College of Pediatricians of Thailand suggested that children under two years can be exposed to video chatting but avoid any screen use. When parents of children aged 18–24 months old want to introduce screen viewing to their children, they should co-view with them and select high-quality programming. Additionally, they should encourage their children to spend time with appropriate activities.^{5,6}

Children growing up in the digital world face negative and positive effects on health outcomes. Studies have indicated positive evidence of screen viewing among young children in that watching high-quality educational programs improved preschoolers' academic skills.⁷ However, several studies have been conducted concerning the adverse effects of screen time among young children. High television exposure among children under five years affects language use, development, executive function and hyperactive behaviors.⁸ Excessive screen viewing among preschool children has been significantly associated with poorer performance concerning child development.⁹ In addition, the externalized problem scores of Thai preschool children increase with more screen viewing time.¹⁰ Time spent with screen viewing is related to children being overweight.¹¹ Increased duration of screen viewing such as television, mobile devices or computers at bedtime during early childhood has been linked to children's sleep time.¹²⁻¹³

Children experiencing screen viewing over two hours daily have a significantly increased chance of hyperactivity and prosocial problems.¹⁴ The results from these studies concluded that a high screen time level negatively affects children's health outcomes. Parents must be concerned regarding this situation to promote good health and appropriate behaviors for their children. Thus, this study sought to develop and test the Parents' Screen Time Reduction for Preschool Children Program (PSTRPP).

Literature Review and Conceptual Framework

The theoretical framework of this study was based on Ajzen's Theory of Planned Behavior (TPB).¹⁵ This theory proposes that changes in human behaviors are associated with attitudes, subjective norms, and perceived behavior control.^{15,16} The TPB focuses on theoretical constructs concerned with individual motivational factors as determinants of the likelihood of performing behaviors.^{15,16} human behavior is determined by intention. The intention is determined by attitude toward the behaviors (negative or positive evaluations of behavior), subjective norms (belief about whether most people approve or disapprove of the behavior), and perceived behavior control (a person's perception of the ease or difficulty of performing the behavior).¹⁵ Thus, increasing these three constructs (attitude, subjective norms, and perceived behavioral control) will strengthen the intention to perform healthy behavior outcomes.¹⁵

The preschool period is a critical time among children in developing health behaviors, especially screen time behaviors formed during childhood.¹⁶ Parents are influential individuals in guiding their children's screen viewing.¹⁷⁻¹⁸ TPB is appropriate for training the parents because previous research has shown effectiveness in using the TPB to examine the critical beliefs in health behaviors, particularly parental

behaviors for a child's health outcomes¹⁶ including sexual health,¹⁹ and aggressive behaviors reduction.²⁰

A review of the literature demonstrated that sustaining changing behaviors depends on attitude, subjective norms and perceived behavior control.¹⁶ For example, when parents evaluated the adverse outcomes of excessive screen time in children, they decided to decrease the amount of screen viewing in their child.^{16,21} Previous studies found that parents' attitudes²¹⁻²² and parents' behaviors were associated with children's screen time.²³ Additionally, subjective norms were influenced by parents' intention to perform children's health behaviors about screen time.^{16,21} Activities to increase parents' perceived behavioral control or self-efficacy can encourage parents to reduce their children's screen time.¹⁷ Parental rules were associated with less screen viewing among children.²³ Increasing parent-child interaction with young children is positively associated with less screen time for their child.²⁴⁻²⁵ Therefore, parents are key individuals in guiding a child's screen-viewing behaviors.

Various interventions tested to decrease screen viewing indicated multiple strategies were used to reduce children's screen time, such as educational sessions,^{17,26-27} counseling calls,¹⁸ and physical activity sessions.¹⁸ However, effective strategies to decrease screen time among young children involve maintaining high parental involvement in the program.²⁶ Additionally, most interventions in related studies were behavioral interventions aiming to improve parenting skills and their child's behaviors regarding screen viewing.²⁸ Interventions focusing on decreasing screen viewing may be beneficial for younger children.^{23,27-29} In Thailand, most studies have examined the negative effects of screen time among children, including poor sleep^{4,14} and externalizing problems.¹⁰ Thus, this current study focused on developing a program to reduce screen time among preschool children, including parental involvement.

This present study established parents' positive attitudes toward children's screen time reduction through group discussions and group activities. The primary

investigator (PI) provided assisted parents in developing strategies through monitoring, planning and goal setting. Moreover, promoting parent-child interaction through playing and reading can decrease screen time in children. This program was expected to be effective and sustainable at least two months after the completion of the intervention.

This TPB-based intervention study aimed to build parents' positive attitudes toward children's screen time reduction and perceived the norm of group approval, increasing parents' confidence, intentions and performing behaviors to reduce children's viewing screen time. The study measured parents' attitudes, subjective norms, perceived behavioral control, and intentions concerning their child's screen time reduction as the proximal outcomes and behavior as distal outcomes. For children, screen time was the outcome.

The following hypotheses for this study were:

- 1) Parents in the experimental group would have higher scores on proximal outcomes, attitudes, subjective norms, perceived behavioral controls and intentions for their child's screen time reduction than those of the control group immediately after (posttest 1) and two months after the intervention (posttest 2).
- 2) Parents in the experimental group would have higher scores on the distal outcome of performing behaviors for their child's screen time reduction than those of the control group at one week (posttest 1) and two months after the intervention (posttest 2).
- 3) Children in the experimental group would have lower screen time than those in the control group at one week (posttest 1) and two months after the intervention (posttest 2).

Methods

Design: This was quasi-experimental with two groups, and we used the Transparent Reporting of Evaluations with Non-randomized Designs (TREND) guidelines/checklist to report the study here.

Sample and setting: The settings were two childcare centers with similar characteristics in size

(large) in one province, northeastern Thailand, then these centers were randomly assigned to the experimental or control settings. The sample size was calculated based on the effect size of a related study at 0.31³⁰ with a power of .80 and a significance level of .05. The estimated sample size was 29 per group. Regarding the dropout rate, the attrition rate was 20%.³¹ Thus, the participants comprised 35 dyads of parents and their children per group. The inclusion criteria of the parents were: they had preschool children exhibiting screen time of more than one hour per day; they were living together in the same household with the primary responsibility for their child's care; and they could read and write Thai. The inclusion criteria for children were aged 2–5 years with screen time of more than one hour per day.

In the experimental setting, 57 parents and their children dyads met the inclusion criteria, and 35 pairs were randomly selected. In the control setting, 60 dyads met the inclusion criteria, and 35 were randomly selected. Thus, the participants for this study totaled 70 dyads. However, three dyads in the control group withdrew from this study. Finally, 35 parents and their children dyads comprised the experimental group, and 32 formed the control group.

Ethical Considerations: This study was reviewed and approved by the Ethics Committee on Human Rights Related to Research Involving Human Subjects, Faculty of Medicine Ramathibodi Hospital, Mahidol University (MURA2020/1679). All participants meeting the inclusion criteria were provided with detailed information, including study purpose, process, confidentiality, anonymity issues, the right to withdraw from the study and rights as research participants. Written and verbal consent were obtained from participants.

Instruments: The instruments for this study were the intervention program and six questionnaires developed by the primary investigator (PI) from elicited research and literature review. The program's contents and the questionnaires were validated by five experts, including a pediatrician, a pediatric nursing instructor, a community health nursing instructor, a psychiatric nursing instructor and an early childhood education instructor.

The Demographic Questionnaire was composed of two parts 1) parent's demographic data, including age, marital status, occupation, educational level, family monthly income, and relationship with children, and 2) children's demographic data consisting of age, gender, and screen time per day.

The Parents' Attitudes regarding Children's Screen Time Questionnaire contained 18 items asking parents about their beliefs regarding their child's screen time. It employs a 5-point Likert scale ranging from 1 = disagree to 5 = strongly disagree. The total scores range from 18 to 90 points. The questionnaire includes both positive and negative statements, and higher scores indicate a higher positive of parents' attitude toward children's screen time reduction. An item example is, "Parents are important individuals for limiting children's screen time." The content validity index (CVI) was 1.00. The Cronbach's alpha coefficient in the pilot and the main study were 0.84 and 0.81, respectively.

The Parents' Subjective Norms regarding Children's Screen Time Reduction Questionnaire contains 11 items asking parents about normative beliefs concerning their child's screen time reduction. It employs a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree, and total scores range from 11 to 55. Higher scores indicate a greater level of parents' agreement with subjective norms regarding children's screen time reduction. One item example is, "Family members think I should set the rules for limiting children's screen time." The CVI was 0.91, and Cronbach's alpha coefficients in the pilot and the actual study were 0.93 and 0.89, respectively.

The Parents' Perceived Behavioral Control concerning Children's Screen Time Reduction Questionnaire contains 15 items asking parents about their control beliefs regarding their child's screen time reduction. It employs a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The total scores range from 15 to 75 points. Higher scores indicate a higher level of parents' perceived behavioral control regarding children's screen time reduction. One item example is, "You are certain you can reduce children's screen time to no more than one hour daily." The CVI was

1.00, and Cronbach's alpha coefficients in the pilot and actual study were 0.93 and 0.90, respectively.

The Parents' Intentions concerning Children's Screen Time Reduction Questionnaire contains four items asking parents about their intentions regarding their child's screen time reduction. It uses a 5-point Likert scale from 1 = the least to 5 = the most and total scores range from 4 to 20. Higher scores indicate a higher level of parents' intentions to perform behaviors concerning children's screen time reduction. One example is, "I intend to be a role model for children in screen use. The CVI was 1.00, and Cronbach's alpha coefficients in the pilot and the actual study were 0.85 and 0.87, respectively.

The Parents' Behaviors concerning Children's Screen Time Reduction Questionnaire contains 22 items asking a parent about their behaviors regarding their child's screen time reduction. It uses a 4-point Likert scale from never =1 to always = 4. The total scores range from 22 to 88 and the questionnaire includes both positive and negative statements. Higher scores indicate a higher level of parents' performance behaviors concerning their child's screen time reduction. One example is, "I don't use a mobile phone when playing with my children. The CVI was 1.00, and

Cronbach's alpha coefficients in the pilot and the actual study were 0.83 and 0.84, respectively.

The Children's Screen Time Diary: Parents reported their child's screen time and types of screen use such as television, smartphone, and tablet in one day via a children's screen time diary.

Parents' Screen Time Reduction for Preschool Children Program (PSTRPP)

The PI developed this program from a literature review and focus group interviews, and it is based on Ajzen's Theory of Planned Behaviors.¹⁵ This program comprises three sessions, three hours long, over two weeks. The three sessions include 1) an instructive session, providing recommendations and suggestions regarding the child's screen time; 2) a restrictive session; rules being set to reduce the child's screen time and parental modeling; and 3) parent-child interaction, including alternative activities for children to decrease their screen time. Each session had activities based on the Theory of Planned Behaviors to promote parents' positive attitudes, increase parents' subjective norms, and increase parents' perceived control, behaviors and parents' intentions on their behaviors concerning decreasing their child's screen time. The program is described more fully in **Table 1**.

Table 1. Activities of the Parents' Screen Time Reduction for Preschool Children Program

Week/Sessions	Content and Activities
Week 1: Sessions 1-2: instructive and restrictive sessions (3 hrs.)	<p>Attitude</p> <ul style="list-style-type: none"> - Introduction: Current situation of child's screen time in daily life - Group discussion about attitudes, feelings and problems on the factors and effects of screen time among children - Summary: Effects of screen time among children <p>Subjective norms</p> <ul style="list-style-type: none"> - Group discussion: share experience about how to disapprove or approve of their child's screen time limit <p>Perceive behaviors control</p> <ul style="list-style-type: none"> - Role play: practice dealing with their child to reduce screen time - Group discussion: discuss and share ideas about supporting and inhibiting factors for reducing screen time among children - Feedback and summary: strategies for reducing screen time among children; monitoring, planning, goal setting and role modeling <p>Intentions</p> <ul style="list-style-type: none"> - Planning to set goals for reducing screen time among their children

Table 1. Activities of the Parents’ Screen Time Reduction for Preschool Children Program (Cont.)

Week/Sessions	Content and Activities
<p>Week 2 Sessions 3: Parent-child interaction (3 hrs.)</p>	<p>Attitude and subjective norms Group discussion: - discuss and share ideas about activities for children - discuss how to disapprove or approve alternative activities for children following the sample situations</p> <p>Perceive behaviors control - Role play: alternative activities among children such as playing and reading - Group discussion: discuss and share ideas about their inhibiting and supporting factors for performing alternative activities among children - Summary: alternative activities for children</p> <p>Intentions - Summary: strategies to reduce screen time among children - Providing a parent’s handbook for reviewing the child’s screen time contents</p>

Data Collection: This study was conducted in January–April 2021. After IRB approval, the PI contacted the potential participants and invited them to join the study. After giving the necessary information and gaining informed consent, they were blinded to group assignments.

Two research assistants (RAs), who were pediatric nurses, were trained following the study guideline, in preparing the questionnaires and the data collection process. The experimental group received a 2-week program provided by the PI, while the control group received a child’s screen time handbook after completing the data collection.

The time to measure the outcomes was set according to the TPB, which postulates that human behavior is determined by intention, and intention is determined by attitude toward the behaviors, subjective norms, and perceived behavior control.¹⁵ Thus, the experimental and the control groups answered questionnaires of all outcomes, including parents’ attitudes, subjective norms, perceived behavioral control, intentions, behaviors and children’s screen time viewing before intervention. Immediately after completing the program (posttest 1), parents answered all outcomes except parents’ behavior and children’s screening time. One week after completing the program, they answered behaviors and children’s screen time (posttest 1). Two months after

completing the program, they answered all outcomes again (posttest 2).

Data Analysis: Demographic characteristics were analyzed using descriptive statistics and compared between the experimental and control groups using the chi-square test and independent t-test. The independent t-test was used to examine the differences in parents’ attitudes, subjective norms, perceived behavioral control, intentions and behaviors between both groups at baseline. The GEE was used to describe the difference in the mean scores on parents’ outcomes in both groups and each group across time.

Results

Most parent participants were mothers. The average ages of parents were 27.4 years in the control group and 29.9 in the experimental group. Most parents’ education levels in both groups attended high school. Additionally, most parents in both groups were employees and were similar in the type of screen used, such as television, smartphone and computer. The demographic characteristics of parents showed no significant differences between the control and the experimental groups.

The characteristics of children in the two groups were similar, including sex, age, type of screen use, and screen time. Most children participants in this study

were girls. Children's average ages were 3.4 years in the control group and 3.7 in the experimental group, and both groups were similar in the type of screen used, such as television and smartphone. The demographic characteristics of children showed no significant differences between the control and the experimental groups.

The mean scores for normally distributed variables between the control and the experimental groups were

compared using an independent t-test. In contrast, non-normally distributed variables were compared by using the Mann-Whitney U test. At baseline assessment, no significant difference was noted in parents' attitudes, subjective norms, perceived behavioral control, intentions and behaviors between the control and experimental groups (Table 2).

Table 2. Baseline comparisons of study variables between control and experimental groups

Variables	Control group (n = 35)	Experimental group (n = 35)	t / z	p-value
	Mean (SD)	Mean (SD)		
Attitudes	72.86 (8.41)	73.03 (7.28)	-.445	.658
Subjective norms	45.09 (6.23)	46.60 (5.69)	1.06	.293
Perceive behavioral control	60.34 (6.66)	59.66 (6.59)	-.433	.666
Intentions	16.14 (2.35)	16.31 (2.11)	-.526 ^z	.599
Behaviors	71.14 (8.57)	70.54 (7.65)	-.309	.758
Children's screen time (minutes/day)	146.71 ± 44.6	127.14 ± 38.92	-1.955	.055

t = independent t-test

z = Mann-Whitney U test

The result revealed that the mean scores of parents' attitudes and behaviors toward children's screen time in the experimental group were significantly higher than those in the control group at posttest 1.

The mean scores of parents' perceived behavioral control on children's screen time reduction in the

experimental group were significantly higher than the mean scores in the control group at posttest 2. Conversely, the mean scores of parents' norms and intentions in the experimental group were not significantly higher than those in the control group at posttest 1 and 2 (Tables 3 to 4).

Table 3. Comparisons of the effects of the program on parents' proximal and distal outcomes at posttest 1 after the intervention between control and experimental groups by the generalized estimating equations (GEE)

Variables	Baseline	Posttest 1	B	SE	95%CI	p-value
	Mean (SD)	Mean (SD)				
Proximal outcomes*						
Attitudes						
Control	72.86(8.41)	72.80(7.29)				
Experimental	73.03(7.28)	75.34(7.03)	2.37	0.98	0.45, 4.29	.015
Subjective norms						
Control	45.09(6.23)	46.54(5.92)				
Experimental	46.60(5.69)	47.14(5.32)	-0.91	1.31	-3.49, 1.66	.486
Perceived behavioral control						
Control	60.34(6.66)	61.91(6.75)				
Experimental	59.66(6.59)	62.51(5.23)	1.29	1.19	-1.05, 3.62	.281

Table 3. Comparisons of the effects of the program on parents' proximal and distal outcomes at posttest 1 after the intervention between control and experimental groups by the generalized estimating equations (GEE) (Cont.)

Variables	Baseline	Posttest 1	B	SE	95%CI	p-value
	Mean (SD)	Mean (SD)				
Intentions						
Control	16.14(2.35)	16.46(1.75)				
Experimental	16.31(2.11)	16.77(1.68)	0.11	0.52	-0.92, 1.14	.828
Distal outcomes**						
Behaviors						
Control	71.14(8.56)	72.40(8.48)				
Experimental	70.54(7.65)	75.26(7.11)	3.46	1.75	0.03, 6.88	.048

Note *Proximal outcomes = measured immediately after intervention

**Distal outcomes = measured one week after intervention

Table 4. Comparisons of the effects of the program on parents' proximal and distal outcomes at posttest 2 after the intervention between control and experimental groups by the generalized estimating equations (GEE)

Variables	Baseline	Posttest 2	B	SE	95%CI	p-value
	Mean (SD)	Mean (SD)				
Proximal outcomes*						
Attitudes						
Control	72.86(8.41)	72.41(9.04)				
Experimental	73.03(7.28)	74.54(7.86)	2.06	1.45	-0.79, 4.91	.156
Subjective norms						
Control	45.09(6.23)	46.44(4.25)				
Experimental	46.60(5.69)	47.09(5.62)	-0.55	1.38	-3.24, 2.15	.690
Perceived behavioral control						
Control	60.34(6.66)	61.41(6.71)				
Experimental	59.66(6.59)	63.09(5.77)	2.63	1.24	0.19, 5.07	.035
Intentions						
Control	16.14(2.35)	16.47(1.87)				
Experimental	16.31(2.11)	16.86(2.28)	0.25	0.58	-0.89, 1.39	.667
Distal outcomes**						
Behaviors						
Control	71.14(8.56)	73.50(8.32)				
Experimental	70.54(7.65)	74.00(7.53)	1.64	1.68	-1.65, 4.92	.330

Note *Proximal outcomes = measured 2 months after the intervention

**Distal outcomes = measured 2 months after the intervention

The findings of this study showed children's screen time in the experimental group significantly differed from those in the control group ($p < 0.05$). Children in the experimental group exhibited lower screen time than those in the control group at posttests

1 and 2. Additionally, children's screen time in the practical decreased from 127.14 minutes/day to 70.64 minutes/day at posttest 1 and 77.14 minutes/day at posttest 2 (Table 5).

Table 5. Comparisons of the effects of the program on children's screen time at posttest 1 and posttest 2 after intervention by generalized estimating equations (GEE)

Variables	Baseline	Posttest 1	Posttest 2	B	SE	95%CI	p-value
	Mean (SD)	Mean (SD)	Mean (SD)				
Children's screen time							
Control	146.71(44.62)	139.57(52.54)	-				
Experimental	127.14(38.92)	70.64(41.45)	-	-49.36	9.55	-68.07, -30.64	<.001
Control	146.71(44.62)	-	130.63(38.52)				
Experimental	127.14(38.92)	-	77.14(45.64)	-37.31	11.43	-59.71, -14.91	.001

Discussion

The PSTRPP based on TPB in this study was found to be helpful in decreasing children's screen time. The children in the experimental group exhibited lower screen time than those in the control group after the intervention. The result of the present study met the WHO guidelines for using screen viewing among children recommending that screen time should be no more than one hour daily among children aged 2 to 5 years.¹

The results found that the intervention increased parents' positive attitudes and perceived higher behavioral control and behaviors in reducing their children's screen time. This program aimed to build positive attitudes to decrease children's screen viewing. Group discussion and situation analysis were the intervention activities to increase parents' positive attitudes toward reducing children's screen time. Parents held discussions and explored attitudes or shared regarding the factors influencing their child's screen time and the effects of screen time among children. Our finding was supported by previous studies in that the training methods by group discussion and situation analysis encouraged parents to increase more positive attitudes toward decreasing children's screen viewing.^{17,30} Similarly, Ajzen explained that the formative process of attitudes occurs when people perceive the expectation value model.¹⁵ That is, when the parents were sharing and discussing the effects of screen time on children, their attitudes were shaped automatically concerning reducing their child's screen time.

When parents held positive beliefs in reducing screen time among their children, they increased perceived behavioral control to limit their child's screen viewing time. For example, parents exhibited confidence in several ways: setting rules to limit screen use in the family, acting as role models, and limiting screen use during meals. Parents also reported confidence in reading with their children. Thus, the results of this study indicated that parents in the experimental group had developed perceived behavioral control from the program activities. The findings of the present research are congruent with related studies. They found that increasing parents' self-efficacy could reduce screen time among children.²⁶⁻²⁷ In addition, this finding confirmed those in other studies that parental role modeling in screen use is one strategy for decreasing children's screen time.^{28,32}

However, our study found no significant difference in the parents' intentions scores in reducing children's screen time between the control and experimental groups. Still, the mean scores of parents' intention in the experimental group at baseline, posttest 1 and posttest 2 were high. This could be explained in that the participants were parents meeting the inclusion criteria and willing to participate in this study. For this reason, they probably believed in the program's benefits and thus had high intention scores along the three testing time points.

The parents' behaviors on children's screen time scores of the experimental group continuously increased after completing the intervention and showed a decreasing trend by the second month after the

intervention. However, the parents' behaviors on children's screen time scores of the experimental group were higher than those of the control group after completing the interventions across two-time measurements. Additionally, parents shared experiences in reducing their child's screen time. For instance, "I tried to decrease television viewing of my son by playing with him more often," "I tried to reduce telephone use of my child before he went to bed; it's difficult for me," and "I don't use the telephone when I play with my daughter." As a result, parents could apply the techniques they learned from the program to reduce their child's screen time. Therefore, the PSTRPP, based on the Theory of Planned Behaviors, reduced screen time among young children.

Limitations

This study has at least two limitations. Firstly, the generalizability was limited because only two child development centers under the local administration department in the Northeast of Thailand were purposely selected. Secondly, settings were randomly assigned to the experiment or control environment, not individually randomly assigned. Thus, the threat to internal validity could not be avoided since, as researchers, we could not assure the equality of all factors of the two settings.

Conclusions and Implications for Nursing Practice

According to this study's findings, the intervention's effects on parental outcomes showed improvement in some parents' variables, such as attitudes, perceived behavioral control and behaviors regarding decreasing their child's screen time. The outcome was that the program could reduce children's screen time compared to the control group after the intervention. Thus, nurses and teachers working with young children should encourage parents to realize the impacts of reducing screen time for more appropriate behaviors for their

children. Nurses and teachers can apply this program to their parents to reduce children's screen time. However, further testing of the program in other settings with randomized controlled trials is needed before it can be widely used.

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โปรแกรมการลดการใช้สื่อผ่านจอสำหรับเด็กวัยก่อนเรียน

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บทคัดย่อ: การใช้สื่อผ่านจอในเด็กเป็นระยะเวลาานอาจส่งผลต่อพัฒนาการและสุขภาพของเด็ก การศึกษาถึงการทดลองนี้ศึกษาผลของโปรแกรมอบรมพ่อแม่ต่อพฤติกรรมพ่อแม่ตามทฤษฎี พฤติกรรมตามแผนและการลดระยะเวลาในการใช้สื่อผ่านจอของเด็ก กลุ่มตัวอย่าง คือ พ่อหรือแม่ของเด็กวัยก่อนเรียนอายุ 2-5 ปี โดยที่เด็กใช้สื่อผ่านจอมากกว่าหนึ่งชั่วโมงต่อวัน กลุ่มตัวอย่าง 67 คน ถูกคัดเลือกจากศูนย์พัฒนาเด็กเล็กที่ตั้งในจังหวัดทางภาคตะวันออกเฉียงเหนือของประเทศไทย แบ่งเป็นกลุ่มทดลอง 35 คน และกลุ่มควบคุม 32 คน เครื่องมือในการศึกษานี้วัดผลลัพธ์ด้านทัศนคติ การรับรู้ บรรทัดฐานของสังคม การรับรู้ความสามารถ ความตั้งใจ และพฤติกรรมของพ่อแม่ในการลดการใช้สื่อผ่านจอของเด็ก และวัดผลลัพธ์ด้านระยะเวลาในการใช้สื่อผ่านจอของเด็ก วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา chi-square, independent t-test, Mann-Whitney U test และ generalized estimating equations ผลการศึกษา พบว่า ระยะเวลาในการใช้สื่อผ่านจอของเด็กในกลุ่มทดลองลดลงมากกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติหลังสิ้นสุดโปรแกรม 1 สัปดาห์และ 2 เดือน พ่อแม่กลุ่มทดลองมีทัศนคติเชิงบวก และพฤติกรรมการลดการใช้สื่อผ่านจอของเด็กสูงกว่ากลุ่มควบคุมหลังการทดลองทันที และมีการรับรู้ความสามารถตนเองสูงกว่ากลุ่มควบคุมหลังการทดลอง 2 เดือน ผลการศึกษามีข้อเสนอแนะว่า พยาบาลและครูผู้ดูแลเด็กควรจัดโปรแกรมนี้ในพ่อแม่เด็กวัยก่อนเรียนเพื่อส่งเสริมให้เด็กมีพฤติกรรมการใช้สื่อผ่านจอที่เหมาะสมนำไปสู่การมีสุขภาพและพัฒนาการตามวัย และในการศึกษาครั้งต่อไปควรศึกษาแบบการทดลองแบบกลุ่มและมีกลุ่มควบคุมเพื่อที่จะสามารถนำไปปฏิบัติได้อย่างกว้างขวาง

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