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Improving Screen Time Review and Adherence to Age-based Limits in a FQHC

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Improving Screen Time Review and Adherence to Age-based Limits in a FQHC

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DNP Final Project

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Approval Page

This is to certify that the DNP Project Final Report by Erin Milner, BSN, RN, CCRN

has been approved by the DNP Project Team on October 31, 2022

for the Doctor of Nursing Practice degree

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I would like to thank my DNP project advisor Dr. Johnson and my DNP practice mentor Dr. Hussain for all their guidance throughout this entire process. I would also like to thank all the staff at the practice setting where this project was implemented. Without the staff, this project would not have happened.

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Abstract

Background

Children in the US spend an average of 7.5 hours a day in front of a screen, well above the recommended 2 hours per day for entertainment. Screen time of greater than 3 hours per day is associated with higher body mass indices and insulin resistance that can lead to type 2 diabetes. Providers should review and reinforce age-appropriate screen time guidelines at well-child visits. Screen time education and behavior contracts can be used to facilitate age-appropriate screen time.

Project Goals

1. To implement screen time education and behavior contracts in a pediatric population in a federally qualified health center (FQHC) from November 2022 to February 2023.
2. To reduce individual screen time to meet the recommended ≤2 hours per day except for homework in a pediatric population from November 2022 to February 2023.

Methods

Screen time education and agreement were available in English and Spanish and were included in 4 visits. Participants set their own weekly screen time goal. Weekly follow-up calls on average weekly screen time were conducted from December 28, 2022 to March 1, 2023. Participants could opt out of the weekly calls.

Results

A total of 35 participants (66.03%) completed the screen time education and agreement and agreed to be contacted. At least 1-week of follow-up data was available for 29 (82.86%) participants. Overall, 16 (55.17%) participants met the guidelines of ≤2 hours per day. There were 14 participants who set a screen time goal of >2 hours per day and by the end of the pilot

period, 7 (46.67%) met the goal of ≤2 hours per day. Of the 15 participants that set their screen time goal at ≤2 hours per day, 6 (40%) reported weekly average screen times greater than their goal. Two school vacations occurred during the pilot period with parents reporting higher screen times for entertainment. On average, it took about 10 minutes at each visit to complete the intervention.

Conclusion

Screen time education and agreements with annual physicals and follow up visits helped children meet the guidelines of ≤2 hours per day with little additional visit time. The practice change should be adopted extended and changes to improve the process efficiency like having the nurse or medical assistant give the screentime education and contract during rooming in should be tested. (e.g., having the nurse or medical assistant give the screentime education and contract during rooming in).

Key words screen time, computer, tablet, or mobile phone; BMI or obesity or overweight; and Hispanic/Latino children

Problem Identification and Evidence Review

In the United States (US), children 8 to 18 years of age spend an average of 7.5 hours per day in front of a screen (CDC, 2018). Screen time of 3 or more hours per day has been associated with higher measures of body fat, body mass indices (BMI), and resistance to the hormone insulin which can lead to type 2 diabetes (T2DM) (Nightingale et al., 2017). Higher daily averages in screen time have been reported for Black (10.06 hours) and Hispanic (8.73 hours) adolescents compared with White (6.98 hours) adolescents (Nagata et al., 2022).

Description of the Local Problem with National Context

From 2017 to 2020, the prevalence of childhood obesity in the US was 19.7% with the highest childhood obesity rates among the Hispanic/Latino population at 26.2% (CDC, 2022). The prevalence of obesity in CT Hispanic or Latino/a children from 2014 to 2016 was 17.1% (Department of Public Health (DPH), 2018). Nationally, the prevalence of T2DM among children ages 10 to 19 years has increased from .33 per 1000 in 2001 to .66 per 1000 in 2017, with the greatest increases observed among Hispanics (.57 per 1000) and non-Hispanic Blacks children (.85 per 1000) (Lawrence et al., 2021).

Screen time usage among children under 18 has increased in the past years. Per Rideout and colleagues (2010), children aged 8 to 18 spend an average of more than 7.5 hours of screen time, 7 days a week. Over the past five years, children aged 8 to 18 have increased their screen time by 1 hour and 17 minutes daily. Screen time's as high as 13.44 hours per day have been reported during the pandemic (Nagata et al., 2022). In CT, 42.3% of children under 18 have 3 hours or more of screen time per day (DPH, 2018). The American Academy of Pediatrics (2016) state that providers should be reviewing age-appropriate screen time guidelines with their patients and parents/guardians to prevent obesity. The CDC recommends children ages 5 to 18

should limit screen time to less than or equal to 2 hours per day except for homework (CDC, 2018). Increased screen time usage is associated with increased BMI (Wu et al., 2016; Goncalves et al., 2019; Kolovos et al., 2019; Mitchell et al., 2013) and this can increase the risk of developing T2DM. Interventions that target reducing screen time are shown to reduce BMI (Wu et al., 2016).

The local practice setting is a federally qualified health center (FQHC) in the largest city in CT that ranks third for the largest Hispanic population in 2022 (Kolmar, 2022). Dr. Hussain, the practice mentor and expert for this project, and Ms. Leigh, a registered dietician and practice expert for this project, are a team that co-treats and manages overweight and obese children in this setting. The majority of these children are Hispanic/Latino. Ms. Leigh reviews dietary guidelines and physical activity guidelines. However, screen time guidelines are rarely discussed. Increased screen time has been associated with an increase in the prevalence of obesity (Goncalves et al., 2019; Kolovos et al., 2019; Mitchell et al., 2013; Wu et al., 2016). The next step in this project is to conduct an evidence review to identify interventions to decrease screen time. Interventions found to be effective at reducing screen time may help to decrease obesity and T2DM rates in these children.

Focus Clinical Question to Guide Evidence Search

In Hispanic/Latino children (P) how does screen time program/guidelines for age (I) compared with usual state (C) affect BMI (O)?

Methods for Gathering External and Internal Evidence

External Evidence. Databases searched included Cochrane Central Register of Controlled Trials, CINAHL, and PubMed. Keywords used included screen time or technology or computer or tablet or mobile phone or smartphone or internet; BMI, or body mass index or

obesity or overweight; and Hispanic/Latino children. Search methods and results are described in Appendix A. The Rapid Critical Appraisal (RCA) Tools from Melnyk & Fineout-Overholt (2019) were used to critically appraise the selected articles.

Internal Evidence. As previously described in the description of the local problem, the obesity rates in the Hispanic/Latino pediatric population are high. Dr. Hussain and Ms. Leigh are both interested in piloting evidence-based interventions in this patient population to address the rising obesity and T2DM rates.

Evidence Search Results

Appendix A depicts the search strategy for this project. Most articles were pulled from PubMed. A total of 12 articles were pulled from the literature and critically appraised. Seven out of the 12 articles were systematic reviews. RCAs were done on each article and an example appears in Appendix B.

Evidence Appraisal Summary, Synthesis, and Recommendations

A total of 12 articles were pulled from the literature that focused on interventions to decrease screen time. In these articles screen time was defined as any use of a screen (e.g., phone, tablet, computer, and TV monitor) for entertainment. Appendix C displays the pertinent information from these articles. Seven out of the 12 articles are systematic reviews with the remaining six articles a mixture of Level II, IV, and VI evidence.

> In summary, decreasing screen time reduces BMI (Goncalves et al., 2019; Kolovos et al., 2019; Mitchell et al., 2013; Wu et al., 2016). Teaching behavioral self-management skills such as goal setting, self-monitoring, and behavior contracts were the most effective methods of reducing screen time. Additionally, education consisting of coaching and counseling and peer or family-based support was shown to be effective in reducing

screen time. Evidence supporting these interventions can be found in Appendix D in the Outcome Synthesis Table #2. Short term interventions spanning under 1 year with smaller sample sizes were shown to reduce screen time more effectively (Jones et al., 2021; Wu et al., 2016).

Upon reviewing the literature, recommendations for decreasing screen time include implementing a behavioral contract identifying limits for screen time and rewards for adhering to limits. Having parental involvement is shown to help children adhere to and retain behavioral self-management skills and is strongly recommended as a method to reduce screen time guidelines. Implementing a short-term intervention such as meeting every month and having patients keep track of daily screen time use is shown to be effective in reducing screen time versus long-term interventions over 1 year. Education consisting of coaching and counseling was shown effective in reducing screen time and should be included in an intervention to reduce screen time. Evidence supporting these interventions can be found in Appendix D in the Outcome Synthesis Table #2.

Project Plan

Project Goals

1. To implement screen time education and behavior contract in a pediatric population in a FQHC from November 2022 to February 2023.
2. To reduce individual screen time to meet the AAP recommendation of ≤2 hours per day except for homework in a pediatric population from November 2022 to February 2023.

Project Team and Roles

Dr. Hussain is a pediatrician who works in the pediatric department at the FQHC. Rachel Leigh is a registered dietician at the FQHC. Dr. Hussain and Ms. Leigh are a team that co-treats

and manages overweight and obese children. Ms. Leigh reviews dietary guidelines and physical activity guidelines. Screen time is rarely discussed in these sessions.

Framework

The framework used to guide the behavior change contracts intervention is the Transtheoretical Model of Change (TTM). TTM poses that changes in behavior occur through a cyclical process. Below details the stages of behavior change. Appendix H shows a depiction of how the stages interact (Behavioral Change Models, n.d.).

1. **Precontemplation**. In this stage, people do not plan to change behavior within the next 6 months. In this phase, people are unaware that their behavior needs to change.
2. **Contemplation**. People intend to change their behavior within the next 6 months. They recognize their behavior needs to change. People may still feel ambivalent towards changing their behavior.
3. **Preparation**. People plan to change their behavior within the next 30 days. People recognize that changing their behavior can benefit them.
4. **Action**. People have changed their behavior within the last 6 months.
5. **Maintenance**. People sustain the behavior change for longer than 6 months and intend to continue the behavior change.
6. **Termination**. People have no desire to return to their previous behavior.

With this DNP project, the goal is to use the screen time intervention to move children from the precontemplation, contemplation, preparation phases to the action phase where behavior change in made. Furthermore, the goal is for children to move from action to the maintenance phase where the behavior change is maintained long term.

EBP/Implementation Model

The Iowa Model Revised is being used to guide the EBP and implementation (Buckwalter et al., 2017). The trigger issue for this project is the rising obesity and T2DM rates in Hispanic/Latino pediatric population and the variability of clinicians reviewing screen time guidelines at visits. The project purpose is described under the description of the practice change section. The team for this project and the evidence search, appraisal, and synthesis has been described in previous sections. In the next several sections the plan for the project design, piloting the practice change, integrating, and sustaining the practice change, and disseminating the results is described.

Context

Description of the setting and population. Southwest Community Health Center is a FQHC in Bridgeport, CT. The pediatric staff provides comprehensive health care to newborns to patients reaching 21 years of age. Visits may be for immunizations, well (physical) exams, preventative services, and sick care. The target population is children and their parents who receive healthcare at this FQHC. Most of these children have CT Husky (e.g., Medicaid) insurance. Specific to this project, Dr. Hussain and Ms. Leigh see overweight and obese children for weight checks and diet coaching every 3-months.

Description of Practice Change

The purpose of this project is to improve the existing weight management visits of all overweight and obese children at a FQHC. As part of standard care, during each visit clinicians will review age-based screen time guidelines, give children the screen time versus lean time infographic (Appendix G) from the CDC and ask patients to complete a screen time agreement (see Appendix E). The screen time education is described in Appendix H with the teaching plan (Appendix F). A sample screen time agreement is found in Appendix E. This agreement may be

between parent/guardian and child and/or child and clinician. Patients and/or their parents or guardians will be asked to track their screen time using a monthly calendar (see Appendix I) provided by the project team. Weekly reminders with encouragement by phone call or text message if free for child/parent or guardian will be done to facilitate tracking of the child's screen time.

At the bottom of the screen time agreement, permission will be obtained for the DNP student to contact the parent/guardian and child weekly for 2 weeks and monthly for 2 months with screen time tracking reminders. The screen time agreement will be copied by the secretary or DNP student and scanned into the electronic health record. The DNP student will meet with Ms. Leigh to identify the patients/parents/guardians that need to be called. The DNP student will record information for each patient/parent/guardian called and leave this information with Ms. Leigh and Dr. Hussain and update it after each contact. For the project evaluation, the DNP student will ask Ms. Leigh to de-identify the data before the student does the evaluation.

Evaluation

To evaluate Goal #1, this DNP student will track number of weight management visits where screen time education was done and agreement offered and compare to visits that this was not done and why. To evaluate Goal #2, children will track their daily screen time as "yes less than or equal to 2 hours per day" or "No, greater than 2 hours per day, _____ (fill in the blank with hours)" and this DNP student will collect this information weekly by calling the child/parent. The DNP student will compare the child's first week trend with their last week trend looking for change to <2 hours of screen time per day.

Barriers to Implementation and Sustainability with Mitigation Plan

Table 1 has possible barriers and strategies to overcome them.

Table 1. *Possible Barriers and Strategies to Overcome these Barriers*

Barriers	**Strategies to Overcome Barriers**
Child/Parent or Guardian forgetting to log screen time	Weekly reminders with encouragement by phone call or text message if free for child/parent or guardian will be done to facilitate tracking of the child's screen time
Child/parent or guardian reluctant to be a part of project	Educate child/parent/guard about benefits of reducing screen time and what they will have to do for the project
Child/parent or guardian don't come to appointment	Can call to remind parent/guardian about appointment and encourage to reschedule if they can't attend

Key Stakeholders, Staff, and Buy-in

Key stakeholders for this project include the FQHC pediatric service staff, patients, and their parents and/or guardians. To gain buy in an open dialogue about implementation of the project will be conducted with all key stakeholders. Feedback on the proposed practice change will be solicited and this can promote staff buy in. Buy in can be created for parents by appealing to the parents about the child's wellbeing. Reducing screen time has been shown to reduce BMI (Goncalves et al., 2019; Kolovos et al., 2019; Mitchell et al., 2013; Wu et al., 2016). Buy in can also be created by celebrating successes at multiple points during the project implementation. What this will look like can be determined by what the staff would like.

Timeline

Appendix L displays the project timeline.

Resources/Budget

Table 2 displays the anticipated costs for this project. Full-time equivalent (FTE) is 150 hours per month x 12 months. The project lead will spend 5% of FTE managing entire project.

Time will be dedicated to PowerPoint creation, project implementation, evaluation, and dissemination.

Table 2. *Cost Analysis*

Expenses	
Materials	Cost
Calendar printout (Staples Hammermill Copy Plus 10-ream paper) (8x11)	$37.99
Infographic printout	$37.99
Human	
Project manager (5% of annual salary of 150,000)	$7500
Technology	
Power point presentation (Microsoft office)	$114.99
Total Estimated Cost	$7652.98

Dissemination Plan

The plan for dissemination includes the following:

- Executive summary for practice setting
- Abstract and project poster for the DNP program faculty, staff, and students and the staff within the pediatric department at the practice setting
- An abstract will be submitted for a poster presentation to a state practice organization, most likely CT APRNs.
- Explore writing a manuscript to submit to a practice organization journal like Journal for Nurse Practitioners.

Ethical Review

This DNP student will present the project proposal to the Chief Medical Officer (CMO) at the practice setting as well as Dr. Hussain, Ms. Leigh, Dr. Johnson, and other key

stakeholders. At this presentation, approval to conduct the project will be sought from the CMO. Per the DNP program policy, the quality improvement (QI) checklist was completed and demonstrated that this was a QI project (Appendix J). Per Sacred Heart University policy, this project must be reviewed by the Institutional Review Board (IRB). Once the DNP project proposal is approved by the DNP project team and CMO, this DNP student will submit an IRB application requesting an exemption because this is an evidence-based QI project.

Project Implementation

This project was reviewed by the SHU IRB and given an exempt status on November 22, 2022 (IRB #221111A, Appendix K) . Implementation of this project was in December 2022. The original plan was for the screen time intervention to be added to the medical/diet and physical activity co-visits by Dr. Hussain and Ms. Leigh. However, these co-visits had been discontinued. The plan was adjusted so that implementation of the screen time intervention was conducted at any pediatric clinic within the FQHC. This DNP student went to three pediatric clinics and introduced herself to the providers and asked to implement the screen time intervention for any patients meeting the screening criteria. Providers agreed at the three locations. Final screening criteria were any patient aged 5 to 21 years, with a BMI in the 85th percentile or above, and spoke English or Spanish. Few patients qualified for the screen time intervention with these criteria, so the criterion of BMI was dropped. Additionally, the providers wanted to give to all their patients. Five years of age was chosen for the cut off as most children at this age can read, understand the intervention, and participate in the intervention. The education materials and screen time agreement were in Spanish or English languages. The DNP student used Marti translation services for Spanish speaking patients and their parent/guardian. If the patients and their parent/guardian did not complete the screen time agreement, they were asked why not.

Weekly follow up phone calls were conducted after the patient completed the screen time agreement. During these phone calls the following questions were asked. ‘Is the child following the screen time agreement?’ (yes/no), and if the answer was no, a follow up question was asked, ‘Why not?’ This open-ended question allowed for data collection on why the screen time agreement was not followed. Question two was, ‘On average how much screen time is your child engaging in every day?’. For calls where the patient or parent/guardian spoke Spanish, Marti translation services were used. If parents/guardians did not answer the phone after two weeks of follow up phone calls, these patients were not called back. These phone calls took approximately 1 to 2 minutes. These weekly phone calls continued until the end of February when this phase of the project ended. At the end of the project, all participants were called to give the parents/guardian a final opportunity to provide data and to let the parents/guardians that the project was ending.

Barriers Encountered During Implementation

The first barrier was the discontinuation of the co-visits by Dr. Hussain and Ms. Leigh. The changes to the plan were described in the previous section. The second barrier was the practice mentor, Dr. Hussain, had a family emergency that required she take time off from December 2022 to February 2023. This DNP student stepped in and communicated directly with the staff and providers about the practice change. This DNP student already had buy-in from the staff and providers as she completed her clinical rotation in the FQHC. Having buy-in from the staff was key to being able to continue the project.

Project Evaluation

Results

There was a total of 53 participants. The average age was 9.74 ± 3.42 years. Twenty-four participants (45.28%) were male. Twenty-seven participants (50.94%) had a normal BMI. Thirty-nine participants completed a screen time agreement. Four participants (10.26%) completed an agreement but opted to not be contacted. Table 3 describes the participants who completed an agreement, agreed to be contact and had at least one follow up phone call with data.

Table 3.

Participant Characteristics Completed Agreement, Follow-up Permitted, At Least One Week of Data (n=29)

Characteristic	***f*(%)**
Gender	
Male	13(44.82)
Female	16(55.17)
BMI >85th Percentile	20(68.96)
Met American Academy of Pediatrics Recommendation of ≤2hours	16(55.17)
Set screen time goal greater than 2 hours	14(48.27)
	Mean(SD)(Range)
Age	9.59(3.24) (8-20)
Screen time goal	2.56(1.25) (1/2 hour to 5 hours)

Follow up phone calls started at week 2 and ended at week 10. The number of phone calls per week ranged from 4 in week 1 and 27 in week 10. The least amount of phone calls occurred in week 1 and each week more participants were added, and the number of phone calls scaled up. The last week of the project, all participants were called to give the parents/guardian a final opportunity to provide data and to let the parents/guardians know that the project was ending.

Total weeks of follow up data per participant ranged from 1 to 7 weeks. The average weeks of data missed were 1.83 weeks ± 1.26 weeks, range 1 to 4 weeks. The average number of weeks that data were reported is 2.90 weeks ± 1.68 weeks. Four participants had no missing data. Nine participants missed 1 week of data. Eight participants missed 2 weeks of data. Four participants missed 3 weeks of data. Four participants missed 4 weeks of data. Six participants (17.14%) had no data at all.

Goals and Achievement

1. To implement screen time education and behavior contract in a pediatric population in a FQHC from November 2022 to February 2023.
2. To reduce individual screen time to meet the AAP recommendation of ≤2 hours per day except for homework in a pediatric population from November 2022 to February 2023.

Goal number 1 was achieved with screen time education and behavior contracts implemented in a pediatric population in a FQHC from December 2022 to February 2023. Of the visits where screen time education was offered, 53 participants got the education, and 39 participants completed a screen time agreement (73.58%). Going forward, these data may be used as a baseline for pediatric patient participation in screen time education and agreements.

In assessing goal number 2, 16 participants (55.17%) met the AAP guideline of reviewing screen time with pediatric patients at well care visits and CDC guideline of ≤2 hours per day of screen time over and above school/homework. Fourteen participants set a screen time goal higher than 2 hours per day. At the end of the pilot period, 7 (50%) meet the goal of ≤2 hours per day. Of the 15 participants that set their screen time goal at ≤2 hours per day, 6 (40%) did not meet this goal. Two school vacations happened during data collection and

parents/guardians mentioned that entertainment screen time usage was increased due to vacation. On average, it took about 10 minutes at each visit to complete the intervention.

Process Evaluation

Due to the paired visits not occurring anymore, this DNP student was the individual who completed the entire process. This DNP student went to the FQHC 1 to 3 days per week each week for 10 weeks from December 2022 to February 2023. On average, the intervention took 10 minutes each visit to complete. This DNP student would screen the patients on the providers schedule per the screening criteria. Any patient who met the screening criteria were given screen time education and asked to complete a screen time agreement. At the bottom of the screen time agreement, patients could agree to or opt out of weekly follow up phone calls. Follow up phone calls started at week 2 and ended at week 10. These weekly phone calls were conducted from December 28, 2022 to March 1, 2023. These follow-up calls lasted on average 1 minute. The first week had the fewest calls (n=4) while in the last week, 27 calls were made, with each week more participants added. The last week of the project, all participants were called to give the parents/guardian a final opportunity to provide data and to let the parents/guardians know that the project was ending.

In reviewing this process, it worked because there was only one person completing it. Additionally, this intervention added minimal additional time to the visit. In the future, the medical assistant can administer the screen time agreement during the rooming-in process. The provider can then review the completed screen time agreement during the visit.

Value of Investment (VOI)/ Return on Investment (ROI)

The VOI of this project in terms of parent/guardian satisfaction with the screen time agreement and the engagement of the patient and parent/guardian was positive based on their

feedback during the follow up phone calls. This DNP student was unable to calculate the ROI with the available data. However, it is reasonable to assume that reducing screen time may reduce sedentary activity and in turn, BMI. Reducing BMI can reduce comorbidities such as Type 2 DM. This can translate into less money being spent on healthcare costs for this patient population. The final expenses for the project were the same as those listed in Table 2.

Key Lessons Learned

A key lesson learned from this project was the value of getting buy in from the staff. Due to the previously described barriers encountered during implementation, creating buy-in was necessary for the success of implementation of this project. Having previous encounters and letting the staff get to know the project leader allowed the project leader to create buy-in for this project. Without having this buy-in, this project would not have been successful.

Another lesson learned was with the follow up phone calls. These follow up phone calls took a long time to complete. Additionally, many patients did not answer these phone calls after multiple attempts. This could be because they were busy, or they did not recognize this DNP student's number. In having to complete this project again, these phone calls could be completed every 2 weeks or 4 weeks to reduce the amount of time spent on these phone calls. Phone calls could also be included as a telehealth visit completed by a registered dietician. At these telehealth visits, the screen time agreement can be reviewed, and nutritional counseling can be given. Additionally, the DNP student could proactively tell patients what number she was going to call from or use FQHC number and give a time frame for patients to anticipate the phone call. This may help with patients not answering phone calls.

Sustainability

Possible barriers to sustainability were discussed above under project plan. During the weekly phone calls, all parents/guardians were able to give an estimate of how much screen time they believed their child engaged in on average every day. While this was an estimate, it provided data regarding how much screen time the patients engaged in on average each day. Most patients were agreeable to completing the screen time agreement after completing the education on screen time reduction. Through the education, patients, parents, and guardians realized the impact of excess screen-time and the importance of reducing screen time. Patients missing appointments did not become a relevant barrier as only the patients who came to their appointments were screened.

In order to maintain sustainability, at the end of implementation, the project lead gave copies of the screen time agreements to all the providers at each site. The goal is that the providers will continue to use these screen time agreements to reduce the amount of screen time each patient engages in. In the future, the medical assistant can administer the screen time agreement during the rooming-in process. The provider can then review the completed screen time agreement during the visit. In having to complete this project again, these phone calls could be completed every 2 weeks or 4 weeks to reduce the amount of time spent on these phone calls. Phone calls could also be included as a telehealth visit completed by a registered dietician. At these telehealth visits, the screen time agreement can be reviewed, and nutritional counseling can be given.

Dissemination

Dissemination

Dissemination of this project includes:

- An executive summary [Appendix N] and project poster for the practice organization [Appendix O]
- A project poster for the students, professors, and staff in the DNP/FNP program
- An abstract will be submitted to CTAPRNs annual conference in November 2023

Implications of Project Results to Organization, Practice Community

Using a screen time agreement was a successful strategy for meeting the AAP guideline of reviewing screen time with pediatric patients at well care visits and CDC guideline of ≤2 hours per day of screen time over and above homework. The next step for this project is to train the nursing staff (RN and LPN) and medical assistants to distribute the screen time agreement to all patients 5 to 18 years and their parent/guardian as part of the rooming in process. During the visit, the APRN or MD will assess each patient's average weekly screen time, review the screen time agreement with the patient, and encourage its use as a strategy to meet the guidelines.

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Appendix A

Search Terms and Search Results by Database: Cochrane Central Register of Systematic Reviews

Search Terms	Number of hits	Number of title & abstract reviewed	Number of full-text articles reviewed	Number of articles selected for this review without duplicates
Screen time or technology or computer or tablet or mobile phone or smartphone or internet AND BMI, or body mass index or obesity or overweight AND Hispanic/Latino children	0	0	0	0
Screen time or technology or computer or tablet or mobile phone or smartphone or intranet AND BMI, or body mass index or obesity or overweight	22	0	0	0

Search Terms and Search Results by Database: Cochrane Central Register of Controlled Trials

Search Terms	Number of hits	Number of title & abstract reviewed	Number of full-text articles reviewed	Number of articles selected for this review without duplicates
Screen time or technology or computer or tablet or mobile phone or smartphone or internet AND BMI, or body mass index or obesity or overweight AND Hispanic/Latino children	0	0	0	0
Screen time or technology or computer or tablet or mobile phone or smartphone or intranet AND BMI, or body mass index or obesity or overweight	1172	0	0	0

Search Terms and Search Results by Database: PubMed

Search Terms	Number of hits	Number of title & abstract reviewed	Number of full-text articles reviewed	Number of articles selected for this review without duplicates

Screen time or technology or computer or tablet or mobile phone or smartphone or internet AND Hispanic/Latino children	120	3	3	3

Search Terms and Search Results by Database: CINAHL complete

Search Terms	Number of hits	Number of title & abstract reviewed	Number of full-text articles reviewed	Number of articles selected for this review without duplicates
Screen time or technology or computer or tablet or mobile phone or smartphone or internet AND Hispanic/ Latino children	3	0	0	0

Appendix B

Rapid Critical Appraisal for Article 1

Rapid Critical Appraisal of a Systematic Review/Meta Analysis of Quantitative Studies

Project Title: Identifying effective intervention strategies to reduce children's screen time: a systematic review and meta-analysis

Date: August 18, 2022

PICOT Question: not included

Article citation (APA): Jones, A., Armstrong, B., Weaver, R.G., Parker, H., von Klinggraeff, L., & Beets, M.W. (2021). Identifying effective intervention strategies to reduce children's screen time: a systematic review and meta-analysis. International Journal of Behavioral Nutrition and Physical Activity, 18(126), 1-20. Doi: https://doi.org/10.1186/s12966-021-01189-6.

Indicate the level of the study you are appraising: Level 1: systematic review

Recommendation for article inclusion in the body of evidence to answer your question: I recommend this article to be included in the body of evidence.

Overview

1. **Purpose of study, including research question(s) or hypotheses:** Purpose is to review and meta-analysis is to identify the behavior change techniques and study characteristics associated with treatment effectiveness in behavioral interventions to reduce children's (0–18 years) screen time
2. **Design/Method:** Systematic review
3. **Sample:** Children 0 to 18
4. **Setting:** School, at home, primary care office

Rapid Critical Appraisal of a Systematic Review/Meta Analysis of Quantitative Studies

4. **Did the systematic review/meta-analysis include non-RCTs?**

☒Yes ☐No ☐Unknown

   a. **Was criteria used to select articles for inclusion?** ☒Yes ☐No

   b. **What were the criteria for inclusion?** Behavioral intervention that targets a reduction in screen/sedentary time (i.e., television, video games, computer, phone, etc.) or reports screen/sedentary time (i.e., television, video games, computer, phone, etc.) as an outcome Targets children aged 0-18 years old (can include family-based interventions and interventions that target parents of infants/preschoolers); Published in a peer-reviewed, English-language journal

   c. **Analyzed in assigned groups?** ☒Yes ☐No

   d. **Complete follow-up of subjects?** ☒Yes ☐No

   e. **Blind?** ☐Yes ☒No

   f. **Double-blind?** ☐Yes ☒No

5. **Were the included studies appraised to be highly quality by the authors?**

☐Yes ☐No ☒ Unknown

Comments: Apprasial was not discussed

6. **Were the methods consistent from study to study?**

☒Yes ☐No ☐Unknown

   a. **Were the populations in the included studies comparable?** ☒Yes ☐No

Rapid Critical Appraisal of a Systematic Review/Meta Analysis of Quantitative Studies

b. **Were the outcomes, interventions, and exposures measured the same way in the groups being compared in the included studies?** ☒Yes ☐No

Comments: Click here to enter text.

7. **Were the results consistent across the included studies?**

☒Yes ☐No ☐ Unknown

Comments: Click here to enter text.

8. **Was there freedom from conflict of interest?** ☒Yes ☐No ☐ Unknown

- Sponsorship/funding agency
- Investigators

Comments: Click here to enter text.

9. **Was the date range of the cited literature current?** ☒Yes ☐ No ☐Unknown

a. **What date ranges were included?** 1998 **to** 2021

b. **If older literature was included, why?** No years set in inclusion or exclusion criteria

Comments: Click here to enter text.

Reliability: Are these valid study results important?

10. **What were the main results of the systematic review/meta-analysis?**

a. **For each individual study**:

Rapid Critical Appraisal of a Systematic Review/Meta Analysis of Quantitative Studies

i. **Statistical Significance (*p* value):** not given

ii. **Confidence Interval and/or Standard Deviations:** not given

iii. **How precise was the intervention/treatment?** Not given

1. **Narrow/wide?** Not given

b. **For the summary statistic?**

i. Statistical significance (*z* statistic): multiple

ii. Were the studies heterogeneous? ☒Yes ☐No

iii. Confidence Interval: multiple

iv. Effect size: not given

v. Did it favor the intervention? ☒Yes ☐No

vi. Did it favor the control? ☐Yes ☒No

Comments: Click here to enter text.

11. **Were the results clinically significant?** ☒Yes ☐ No ☐Unknown

a. Were the following reported: NNT, NNH, OR, RR? ☐Yes ☒No

Comments: Click here to enter text.

12. **Were potential confounders identified?** ☐Yes ☒ No ☐Unknown

a. **Were the potential confounders discussed in the relationship to the results?**

☐Yes ☒No

Comments: Click here to enter text.

Rapid Critical Appraisal of a Systematic Review/Meta Analysis of Quantitative Studies

13. **Were adverse events identified?** ☐Yes ☒ No ☐Unknown

Comments: Click here to enter text.

Applicability/Generalizability: Can I apply these valid, important study results?

14. **Can the results be applied to my population of interest?** ☒Yes ☐No ☐Unknown

a. **Is the treatment feasible in my care setting?** ☒Yes ☐No

b. **Do the outcomes apply to my population of interest?** ☒Yes ☐No

c. **Are the likely benefits worth the potential harm and costs?** ☒Yes ☐No

d. **Are the subjects/participants in this study similar to my population of interest?** ☒Yes ☐No

e. **Were all clinically important outcomes considered?** ☒Yes ☐No

15. **Will you use the study/article in your practice to make a difference in outcomes?** ☒Yes ☐No ☐Unknown

a. **If yes, why would you do this & how?** Smaller sample sizes (n under 95), shorter intervention duration (n under 52 weeks); Behavioral interventions including goal setting, goal review, and self-monitoring had bigger effects

b. **If no, why would you not include the results to make a difference?** Click here to enter text.

Rapid Critical Appraisal of a Systematic Review/Meta Analysis of Quantitative Studies

Strength of Study

Level of study: ☒ I ☐II ☐III ☐IV ☐V ☐VI ☐VII

Quality of Study: ☒High ☐Medium ☐Low

Strength = Level + Quality

What is the strength of this study? Smaller sample sizes (n under 95), shorter intervention duration (n under 52 weeks) Behavioral interventions including goal setting, goal review, and self-monitoring had bigger effects

What is your recommendation for article inclusion in the body of evidence to answer your question?

☒Include this article in the body of evidence (place article on evaluation and synthesis table)

☐Do NOT include this article in the body of evidence

Additional comments: Click here to enter text.

Appendix C
Evidence Summary Table

PICO Question: In Hispanic/Latino children (P) how does screen time program/guidelines for age (I) compared with usual state (C) affect BMI (O)?

Citation	Design/ Method	Sample/Setting	Intervention	Major Variables Studied and Their Definitions	Findings	Level of Evidence/Quality	Quality of Evidence: Critical Worth to Practice
Article 1							
Community Preventative Services Task Force, 2016 Reducing Children's Recreational Sedentary Screen Time: Recommendation of the Community Preventive Services Task Force	Systematic review	Children under 13 years old 49 included studies; databases searched not included Total number of participants not reported	Behavioral self-management skills reduced screen time: consists of classroom based education, tracking and monitoring, coaching and counseling, family-based or peer support	IV: behavioral interventions DV: screen time	Behavioral self-management skills reduce screen time, improve physical activity and diet, improve or maintain weight status; obesity prevalence	Level 1: systematic review	Behavioral self-management skills reduced screen time: consists of classroom based education, tracking and monitoring, coaching and counseling, family-based or peer support
Article 2							
Jones et al., 2021 Identifying effective intervention strategies	Systematic review	Databases used: Ebscohost, Web of Science, EMBASE, and PubMed Inclusion: children under 18, behavior	Smaller sample sizes (n under 95), shorter intervention duration (n under 52 weeks)	IV: behavioral interventions DV: screen time	Smaller sample sizes (n under 95), shorter intervention duration (n under 52)	Level 1: systematic review	Smaller sample sizes (n under 95), shorter intervention duration (n under 52 weeks)

to reduce children's screen time: a systematic review and meta-analysis		intervention to reduce screen time, in English, peer reviewed 216 in systematic review; 186 in meta-analysis Total number of participants not reported	Behavioral interventions including goal setting, goal review, and self-monitoring had bigger effects		Behavioral interventions including goal setting, goal review, and self-monitoring had bigger effects		Behavioral interventions including goal setting, goal review, and self-monitoring had bigger effects
Article 3							
Maniccia et al., 2011 A Meta-analysis of Interventions That Target Children's Screen Time for Reduction	Meta analysis	29 articles chosen Databases used: 8 (not specified which ones) Total number of participants not reported	Children ages 5 to 11 Interventions: controlled environment with TV control device; setting goals, planning media use; behavioral contract in which children specified amount of screen time, reward if screen time targets met; children monitor and record screen time	IV: behavioral interventions DV: screen time	All interventions listed resulted in reduction of screen time	Level 1: metanalysis	Important interventions: controlled environment with TV control device; setting goals, planning media use; behavioral contract in which children specified amount of screen time, reward if screen time targets met; children monitor and record screen time
Article 4							
Nguyen et al., 2020	Systematic review	Databases used: MEDLINE Complete, PsycINFO, CINAHL, Global	Children: employed motivational strategies targeted other outcomes e.g. PA, diet and	IV: interventions DV: screen time	Children: all except 1 found decrease in screen time with	Level 1 systematic review	Children: motivational strategies e.g. education

The effectiveness of sedentary behaviour interventions on sitting time and screen time in children and adults: an umbrella review of systematic reviews		Health via EBSCOhost platform, EMBASE, and Cochrane Central Register of Systematic Reviews Inclusion: systematic reviews with meta-analysis of interventions aiming at reducing sedentary behavior (screen time, sitting time or sedentary time 17 reviews include (7 in children, adolescent; 10 in adults) Total number of participants not reported	delivered across multiple settings Adults: most focused on motivational strategies e.g education across all settings		motivational strategies being more effective Adults: reducing sedentary time reduces sedentary behavior across all settings		reduces screen time
Article 5							
Schmidt et al., 2012 Systematic Review of Effective Strategies for Reducing Screen Time Among young Children	Systematic review	Total articles: 47 Databases used: Systematic Review of Effective Strategies for Reducing Screen Time Among young Children Total participants not reported	29 studies reported statistically significant reduction in screen time Most effective: set explicit goals for reduced TV viewing or screen-media use, used electronic monitoring devices, contingent feedback systems or clinic-	IV: behavioral interventions DV: screen time	Most effective: set explicit goals for reduced TV viewing or screen-media use, used electronic monitoring devices, contingent feedback systems or	Level 1: systematic review	Most effective: set explicit goals for reduced TV viewing or screen-media use, used electronic monitoring devices, contingent feedback systems or clinic-based

			based counseling, had high levels of parental involvement, and/or recruited participants who were already overweight or obese at baseline		clinic-based counseling, had high levels of parental involvement, and/or recruited participants who were already overweight or obese at baseline		counseling, had high levels of parental involvement, and/or recruited participants who were already overweight or obese at baseline
Article 6							
Wahi et al., 2011 Effectiveness of Interventions Aimed at Reducing Screen Time in Children A Systematic Review and Meta-analysis of Randomized Controlled Trials	Systematic review	Total articles: 13 (6 for BMI 9 for screen time) Databases used: Medline, Embase, Cochrane Central Register of Controlled Trials, PsycINFO, ERIC, and CINAHL Total participants: not reported	No specific interventions mentioned	IV: behavioral interventions DV: screen time, BMI	Statistically significant reduction in screen time among children under 6; all other ages not statistically significant No statistically significant change in BMI with screen time interventions in all age Low quality evidence	Level 1: systematic review	Statistically significant reduction in screen time among children under 6; all other ages not statistically significant No statistically significant change in BMI with screen time interventions in all age

Article 7							
Wu et al., 2016 The effect of interventions targeting screen time reduction	Systematic review Databases: PubMed, Embase, Cochrane Central Register of Controlled Trials (CENTRAL) 14 trials, 2238 participants total	Inclusion: studies targeted at reducing screen time, studies RCT, outcomes were changes in screen time or BMI	Most interventions were education delivered in community settings and focused on automated monitor TV viewing reduction	IV: interventions to target screen time DV: screen time, BMI	Interventions target reducing screen time reduced BMI Most effective interventions: less than 7 months duration, focused on health promotion, counseling	Level 1 systematic review	Interventions targeting screen time reduction decrease BMI; ideal intervention less than 7 months, focus on health promotion, counseling
Article 8							
Zhang et al., 2022 Effect of screen time intervention on obesity among children and adolescent: A meta-analysis of randomized controlled studies	Systematic review PubMed, Cochrane, Web of Science and Embase databases were searched for literature published between January 1990 and December 2020	Inclusion criteria: Participants 3–18 years old; type of studies: randomized controlled trial, controlled before-after trial or controlled crossover trial; intervention period was more than one month; studies report results of screen time and anthropometric parameters before and after the intervention for the intervention and	Most interventions include time monitor; education	IV: screen time DV: BMI	No improvement in BMI; reduction of waist length statistically significant Screen time overall did decrease	Level 1 = systematic review	Total weekly screen time, TV time, game time reduced Limitations: small amount of studies include, all heterogeneous; screen time self reported = bias

	14 studies; 1894 subjects included	control groups, or the changes after the intervention for the intervention and control groups Exclusion criteria: incomplete data or reviews without original study data; repeatedly reported studies; subjects had other physical or mental illnesses					
Article 9							
Maddison et al., 2014 Screen time weight loss intervention targeting children at home (SWITCH): A randomized control trial	Randomized control trial (RCT)	Screen-Time Weight-loss Intervention Targeting Children at Home (SWITCH) 24 weeks total Children age 9 to 12 and primary caregivers in intervention n=127; n=124 in control Inclusion if aged 9–12 years, lived in the greater Auckland metropolitan area, used electronic media (television, video games, computer) for at least 15 hours per week, were overweight or	SWITCH: primary care givers given strategies to reduce screen time for 24 weeks Strategies included: education on behavior change strategies, assistance to budget media time, activity pack for children	IV: SWITCH DV: BMI, physical activity, sedentary activity, sleep	No change in BMI, physical activity, sedentary activity, or sleep	Level 2: RCT	This intervention to control screen time did not result in any significant change in BMI, physical activity, sedentary activity, or sleep Limitations: self-reported measures of physical activity, sedentary time

		obese (as per Cole International cut-points), and could speak and understand English					
Article 10							
Goncalves et al., 2019 Parental influences on screen time and weight status among preschool children: A cross sectional study	Cross sectional study	Children 3 to 5 years old from 7 Early Childhood Education care centers in Brazil, randomly selected Exclusion criteria child as having special needs or taking medication regularly that may influence weight; parents who have health problems or who were unable to have their height and weight measured July to October 2017 318 parent-child dyads participated	Completed survey measuring sociodemographic data, weekday and weekend screen time, parental self-efficacy for limiting screen time	IV: screen time DV: BMI	Greater child screen time on weekends not weekdays associated with higher child BMI	Level 4: case control or cohort study	Greater child screen time associated with higher BMI with screen time being higher on weekends than weekdays
Article 11							
Kolovos et al., 2019 Association of sleep, screen time and physical activity with overweight	Descriptive study	Data from 2016 Mexican National Health and Nutrition Survey N = 6419 adults, 20 years old and above, with complete records	BMI, screen time, sleep, physical activity measured	n/a	Being overweight, obese associated with higher levels of screen time, fewer sleeping	Level 6: descriptive study	Being overweight, obese associated with higher levels of screen time

and obesity in Mexico		on BMI, physical activity, sleep duration Mean age: 43; 67% women			hours/day, less likely to engage in vigorous PA		Limitations: self-reported data
Article 12							
Mitchell et al., 2013 Greater screen time is associated with adolescent obesity: a longitudinal study of the BMI distribution from ages 14 to 18	Descriptive study	1429 adolescents ages 14 to 18 from 4 high schools in Philadelphia Exclusion: not English speaking, in special classroom placement	Self-reported height, weight, screen time usage	n/a	Screen time positively associated with BMI	Level 6: descriptive study	More screen time used = higher BMI Limitations: data self-reported

Appendix D

Levels of Evidence Synthesis Table

PICO Question: In Hispanic/Latino children (P) how does screen time program/guidelines for age (I) compared with usual state (C) affect BMI, Hemoglobin A1C (O)?

X (copy symbol as needed)	1	2	3	4	5	6	7	8	9	10	11	12
Level I: Systematic review or meta-analysis	X	X	X	X	X	X	X	X				
Level II: Randomized controlled trial									X			
Level III: Controlled trial without randomization												
Level IV: Case-control or cohort study										X		
Level V: Systematic review of qualitative or descriptive studies												
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project											X	X
Level VII: Expert opinion												

LEGEND

1: Community Preventative Services Task Force, 2016; 2: Jones et al., 2021; 3: Maniccia et al., 2011; 4: Nguyen et al., 2020; 5: Schmidt et al., 2012; 6: Wahi et al., 2011; 7: Wu et al., 2016; 8: Zhang et al., 2022; 9: Maddison et al., 2014; 10: Goncalves et al., 2019; 11: Kolovos et al., 2019; 12: Mitchell et al., 2013

Outcomes Synthesis Table #1

	4	7	8	9	10	11	12
Screen time	↓	↓	↓	**NC**	↑	↑	↑
BMI	**NE**	↓	**NC**	**NC**	↑	↑	↑

Key: NE = not evaluated, NC= no change, ↓ = decrease ↑ increase

LEGEND

4: Nguyen et al., 2020; 7: Wu et al., 2016; 8: Zhang et al., 2022; 9: Maddison et al., 2014; 10: Goncalves et al., 2019; 11: Kolovos et al., 2019; 12: Mitchell et al., 2013

Outcomes Synthesis Table #2

Intervention	1	2	3	4	5	7	8	9
Behavior self-management skills (e.g., goal setting)	↓	↓	↓	NE	↓	NE	NE	↓
Coaching, counseling	↓	NE	NE	↓	NE	↓	↓	NE
Peer or family-based support	↓	NE	NE	NE	↓	NE	NE	NE

Key: NE = not evaluated; NC = no change; ↓ = decrease in screen time

LEGEND

1: Community Preventative Services Task Force, 2016; 2: Jones et al., 2021; 3: Maniccia et al., 2011; 4: Nguyen et al., 2020; 5: Schmidt et al., 2012; 7: Wu et al., 2016; 8: Zhang et al., 2022; 9: Maddison et al., 2014

Appendix E.

Screen Time Agreement and Education Infographic

Screen Time Agreement

I _____ will abide by the following expectations regarding screen time.

Every day I will have _____ total screen time per day (including television, computer, video games, iPad, phone; not related to schoolwork)

I agree that:

- ☐ Screen time will never get in the way of my homework time
- ☐ When my screen time is over, I will stop without argument
- ☐ Screen time will never get in the way of household chores/obligations
- ☐ I understand that some days I may not get all my screen time if I have other obligations during the day

If I follow the screen time agreement, my reward is:

If I don't follow the screen time agreement, my consequence is:

This agreement will be reviewed on: _____

Child Signature: _____ Date: _____
Parent Signature: _____ Date: _____

Do I have your permission to contact you?
Child☐ Yes ☐No ☐ N/A
Parent ☐ Yes ☐ No

Acuerdo de Tiempo de Pantalla

Yo _____ cumpliré con las siguientes expectativas con respecto al tiempo frente a la pantalla.

Todos los días tendré _____ tiempo total de pantalla por día (incluyendo televisión, computadora, videojuegos, iPad, teléfono; no relacionado con el trabajo escolar)

Estoy de acuerdo que:

- ☐El tiempo frente a la pantalla nunca se interpondrá en el camino de mi tiempo de tarea
- ☐ Cuando termine mi tiempo de pantalla me detendrè sin discutir
- ☐ El tiempo de pantalla nunca se interpondrá en el camino de las tareas/obligaciones de la casa
- ☐ Entiendo que es possible que algunas días no tenga todo mi tiempo frente a la pantalla si tengo otras obligaciones durante el día

Si sigo el acuerdo de tiempo de pantalla mi recompense es:

Si no sigo el acuerdo de tiempo de pantalla mi concecencia es:

Este acuerdo será revisado el: _____

Firma del niño: _____ Fecha: _____
Firma de los padres: _____ Fecha: _____

¿Tengo su permiso para contactarlo?
Niña/o ☐Sí ☐No ☐N/A
Madre/padre ☐Sí ☐No

Appendix F.

Teaching Plan for Screen Time Education

Setting: Federally Qualified Health Center
Presenter: Erin Milner RN, BSN

Topic: Screen Time					
Objective	**Time**	**Content**	**Activity**	**Resources/Materials**	**Assessment**
After the education, parent and child will identify what screen time is	3 minutes	Definition of screen time	Powerpoint presentation on iPad	iPad	Teachback method
After the education, parent and child will identify benefits of reducing screen time	5 minutes	Benefits of reducing screen time	Powerpoint presentation on iPad	iPad	Teachback method
After the education, parent and child will identify methods to reduce screen time	5 minutes	Interventions to reduce screen time	Powerpoint presentation on iPad	iPad	Teachback metho

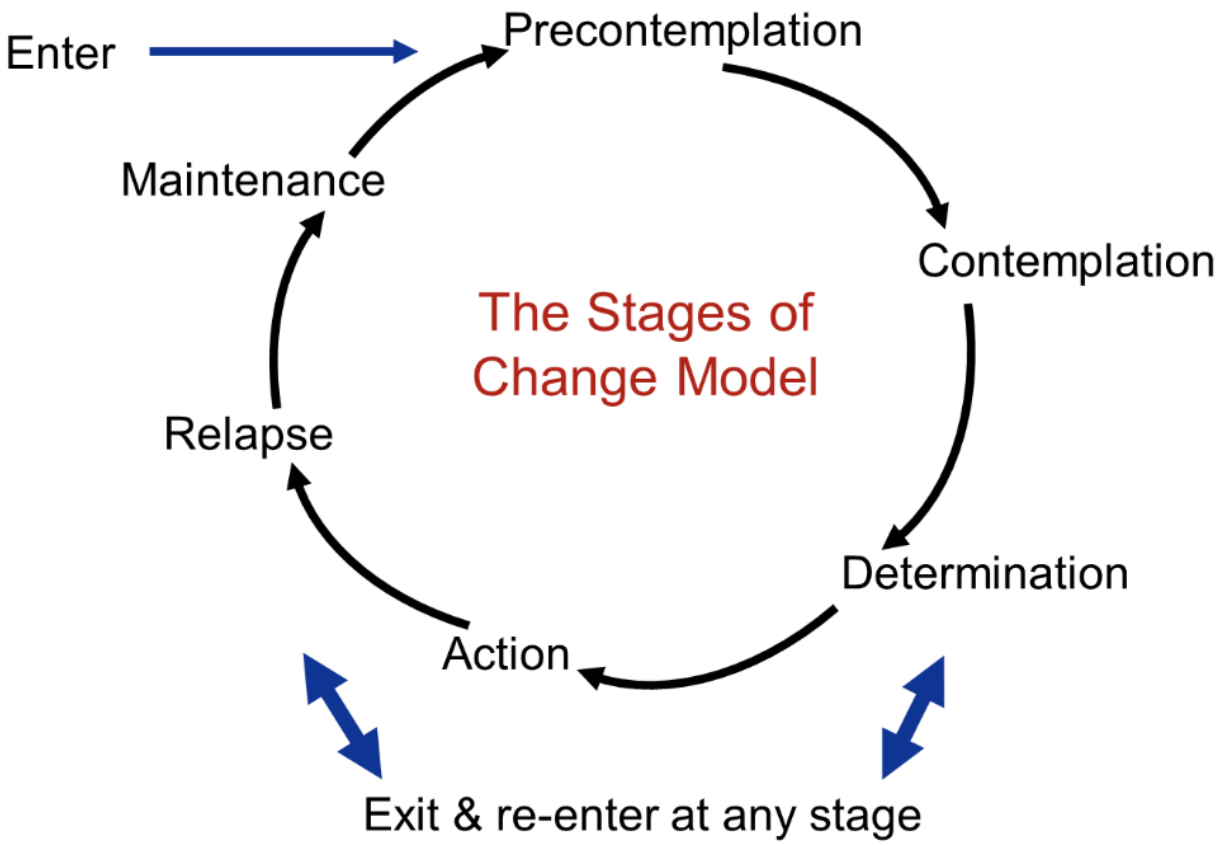
Appendix G.

Screen Time vs. Lean Time Infographic

Infographics downloaded from CDC website (https://www.cdc.gov/healthyschools/physicalactivity/getmoving.htm) that has more information about screentime that may be shared with patients and parents who want more information. Infographic of screentime guidelines from https://www.osfhealthcare.org/blog/kids-screen-time-how-much-is-too-much/ (CDC, 2018)

Appendix H.

The Transtheoretical Model (TTM)



Appendix I.

Calendar for Screen Time Tracking

FEB2023

SUN	MON	TUE	WED	THU	FRI	SAT
				01	02	03	04
05	06	07	08	09	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

Appendix J.

QI Checklist

Differentiating Quality Improvement and Research Activities Tool

Question	Yes	No
1. Is the project designed to bring about immediate improvement in patient care?	X	
2. Is the purpose of the project to bring new knowledge to daily practice?	X	
3. Is the project designed to sustain the improvement?	X	
4. Is the purpose to measure the effect of a process change on delivery of care?	X	
5. Are findings specific to this hospital?	X	
6. Are all patients who participate in the project expected to benefit?	X	
7. Is the intervention at least as safe as routine care?	X	
8. Will all participants receive at least usual care?	X	
9. Do you intend to gather just enough data to learn and complete the cycle?	X	
10. Do you intend to limit the time for data collection in order to accelerate the rate of improvement?	X	
11. Is the project intended to test a novel hypothesis or replicate one?		X
12. Does the project involve withholding any usual care?		X
13. Does the project involve testing interventions/practices that are not usual or standard of care?		X
14. Will any of the 18 identifiers according to the HIPAA Privacy Rule be included?		X

Adapted from Foster, J. (2013). Differentiating quality improvement and research activities. Clinical Nurse Specialist, 27(1), 10–3. https://doi.org/10.1097/NUR.0b013e3182776db5

Appendix K

Re: IRB#221111A - Exempt Status Request

From: Taber, Prof. Christopher B. <taberc@sacredheart.edu>
Sent: Tuesday, November 22, 2022 11:03 AM
To: Milner, Erin K. <milnere@mail.sacredheart.edu>
Cc: Londo, Madeline C. <londom@mail.sacredheart.edu>; Alp, Feride F. 'Funda' <alpf1@sacredheart.edu>
Subject: IRB#221111A - Exempt Status Request

Dear Applicant,
Thank you for your submission to the IRB requesting exempt review. Based on the application submitted, the IRB is pleased to approve your submission and we wish you great success in your research.

Sincerely,
Christopher Taber
Chair, IRB

Christopher B. Taber, PhD, CSCS, USAW3, EP-C, PES
Director, Exercise and Sport Science M.S. Program
Associate Professor
College of Health Professions
Sacred Heart University
(203) 396-6342

To learn more about the M.S. in Exercise and Sport Science program, click here.

To see where our M.S. alumni are working, click here.

Appendix L.

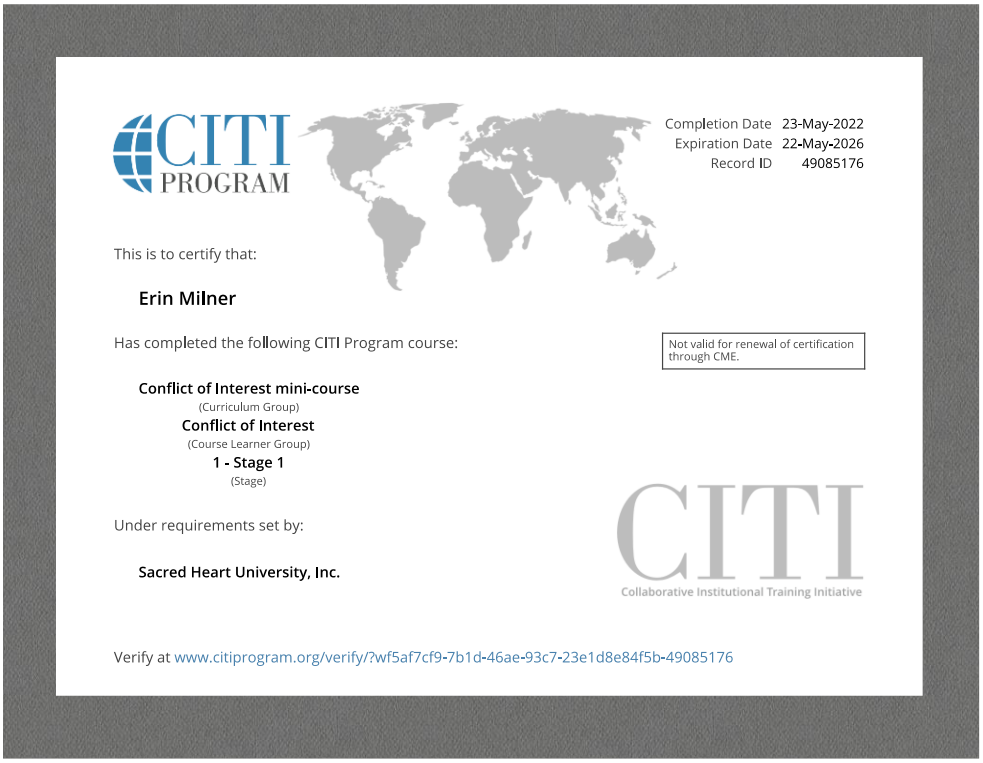
Project Timeline

	Doctor of Nursing Practice Project Roadmap	
Component	**Definition**	**Date Done**
Phase 1: Problem Identification and Evidence Review		
Clinical Inquiry including background and significance of problem	Describe local problem and its significance. Include data to frame local problem.	Spring 2022 PV
Organizational priority	Summarize information that supports topic/problem is an organizational priority.	Spring 2022 PV
Searchable Question	Write a focused, searchable question using an established method (e.g. PICO).	Spring 2022 PV
Evidence search	External evidence • Summarize search strategy (e.g. databases, keywords, filters/limits, criteria for article selection, tools for critical appraisal). Include practice-based evidence (e.g. evidence-based solutions that experts/other health systems have implemented to address practice problem).	7/6/22
	Internal evidence • Summarize applicable unit/community/department/hospital/organizational level data or data required for national entities (e.g. CMS, NDNQI, AHRQ).	7/6/22
	Perform needs assessment if applicable.	N/A
Evidence appraisal, summary, and recommendations	Organize evidence that answers focused clinical question in a clear concise format (e.g. table or matrix).	7/6/22
	Appraise literature for quality and applicability of evidence using established method (e.g. Johns Hopkins Nursing EBP Research Evidence Appraisal Tool, Joanna Briggs Institute Critical Appraisal Tools, Fuld Institute for EBP critical appraisal tools etc.).	7/6/22
	State recommendations(s) and link to evidence strength and quality and risk/benefits.	7/6/22
Phase 2: Project Planning		
Project goals	State intended, realistic outcomes of project using established method (e.g. SMART criteria).	7/24/22
Framework	Select framework/model to guide implementation (e.g. EBP model, QI framework, Change model).	7/24/22
Context	Describe project setting and participants or population, or other elements that are central to where the change will occur.	7/24/22

Key stakeholders	Identify agencies, departments, units, individuals needed to complete the project and/or affected by project, and strategies to gain buy-in.	7/24/22
Practice change/intervention	Provided detailed description of practice change or intervention (e.g. new or revised policy).	8/14/22
Evaluation	Summarize plan for evaluating the effectiveness of the practice change. Identify applicable process and outcome data to be collected/tracked and tools to do this. Identify the methods for analyzing/interpreting the data (e.g. control, run or Pareto charts).	8/14/22
Possible barriers to implementation	Identify possible barriers and implementation strategies to mitigate these barriers.	8/14/22
Sustainment	Identify strategies to sustain the change.	8/14/22
Timeline	Create a realistic timeline for project completion.	8/14/22
Resources	Identify all resources (e.g. indirect and direct) needed to complete the project.	8/14/22
Ethical merit	Identify and obtain the required review and approval needed for implementation (e.g. institution, community agency, IRB).	8/14/22
Phase 3: Implementation		
Implement project	Carry out the project using selected implementation framework/model.	December to February 2022
	Track any deviations/changes from the project plan.	December to February 2022
Phase 4: Evaluation		
Results/Interpretation	Using an established method (e.g. run or control charts) display data and interpret project outcomes.	March 2022
	Report evaluation of the effectiveness of the practice change, including extent the practice change was implemented (process outcome) and extent to which the desired outcome(s) were achieved.	March 2022
Return on investment	Identify the final resources that were used to implement the project. Calculate and report the return on investment.	March 2022
Phase 5: Dissemination		
Traditional	Disseminate to the project setting in a manner meaningful to them (e.g. executive report, poster, presentation at a meeting, poster with QR code to access details of project, etc.)	April 2023
	Disseminate in the format required by the academic institution (e.g. poster, public presentation) and	
	Prepare final project write-up using established reporting guidelines (e.g. EPQA, SQUIRE) and academic institution requirements.	
Non-traditional	Develop a website to display project, use personal or program social media (e.g. Twitter, Facebook) to share project information.	April 2023

Appendix M.

CITI Training Certificates



CITI PROGRAM

Completion Date 23-May-2022
Expiration Date 22-May-2026
Record ID 49085176

This is to certify that:

Erin Milner

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Conflict of Interest mini-course
(Curriculum Group)
Conflict of Interest
(Course Learner Group)
1 - Stage 1
(Stage)

Under requirements set by:

Sacred Heart University, Inc.

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wf5af7cf9-7b1d-46ae-93c7-23e1d8e84f5b-49085176

CITI PROGRAM

Completion Date 23-May-2022
Expiration Date 22-May-2025
Record ID 49085175

This is to certify that:

Erin Milner

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

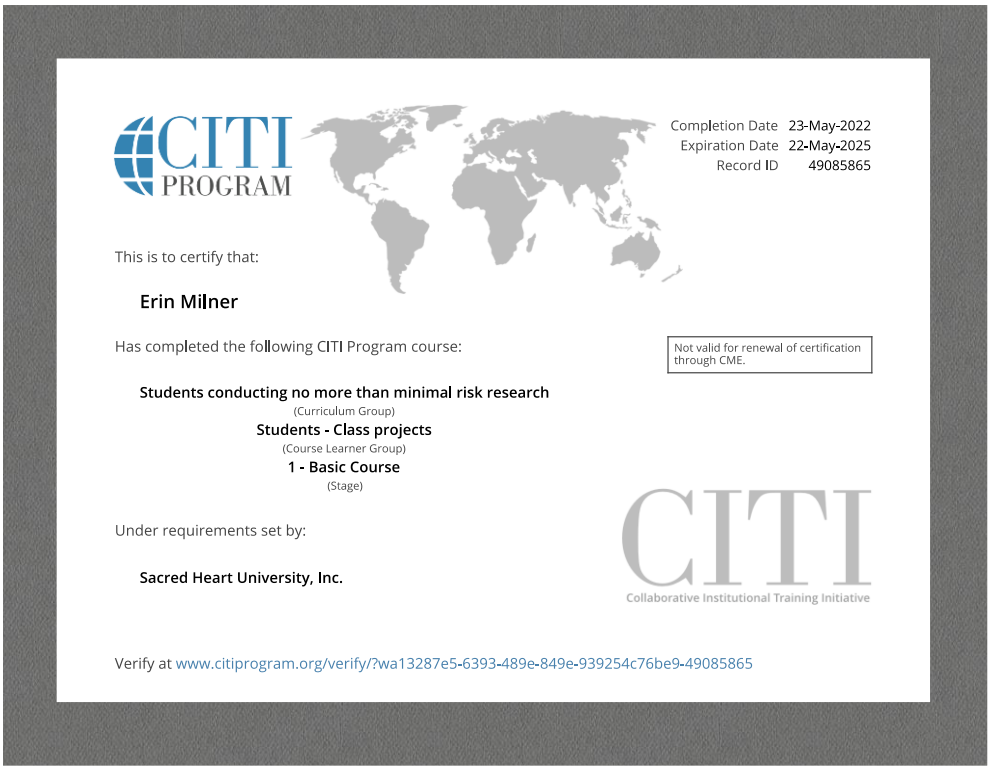
Responsible Conduct of Research (RCR)
(Curriculum Group)
Responsible Conduct of Research (RCR)
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

Sacred Heart University, Inc.

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w41a85b82-7a5b-42a5-bd81-71b070eda839-49085175



CITI PROGRAM

Completion Date 23-May-2022
Expiration Date 22-May-2025
Record ID 49085865

This is to certify that:

Erin Milner

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Students conducting no more than minimal risk research
(Curriculum Group)
Students - Class projects
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Sacred Heart University, Inc.

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wa13287e5-6393-489e-849e-939254c76be9-49085865

Appendix N.

Executive Summary

Children in the US spend an average of 7.5 hours a day in front of a screen, well above the recommended 2 hours per day for entertainment. Screen time of >3 hours per day is associated with higher body mass indices and insulin resistance that can lead to type 2 diabetes. Per the Centers for Disease Control and the American Academy of Pediatrics, providers should review age-appropriate screen time guidelines at well-child visits. Screen time education and behavior agreements can be used to facilitate age-appropriate screen time.

The project goals were to implement screen time education and screen time agreements and to reduce individual screen time to meet the recommended under 2 hours per day of screen time in a pediatric population in a federally qualified health center (FQHC) from November 2022 to February 2023.

Screen time education and screen time agreements were available in English and Spanish. They were delivered by the DNP student during any pediatric visits to children 5 years and older at all sites. The DNP student spent 1-3 days per week for 8 weeks delivering the intervention that took 10 minutes or less. Participants set their own weekly screen time goals. The DNP student conducted weekly follow-up calls to collect average weekly screen time from December 28, 2022, to March 1, 2023. These follow-up calls lasted on average 1 minute. The first week had the fewest calls (n=4) while in the last week, 27 calls were made.

A total of 35 participants (66.03%) completed the screen time education and agreement and agreed to be contacted. At least 1-week of follow-up data was available for 29 (82.86%) participants. Overall, 16 (55.17%) participants met the guidelines of ≤2 hours per day. There were 14 participants who set a screen time goal of >2 hours per day. By the end of the pilot

period, 7 (46.67%) met the goal of ≤2 hours per day. Of the 15 participants that set their screen time goal at ≤2 hours per day, 6 (40%) reported weekly average screen times greater than their goal. Two school vacations occurred during the pilot period with parents reporting higher screen times for entertainment. On average, it took about 10 minutes at each visit to complete the intervention.

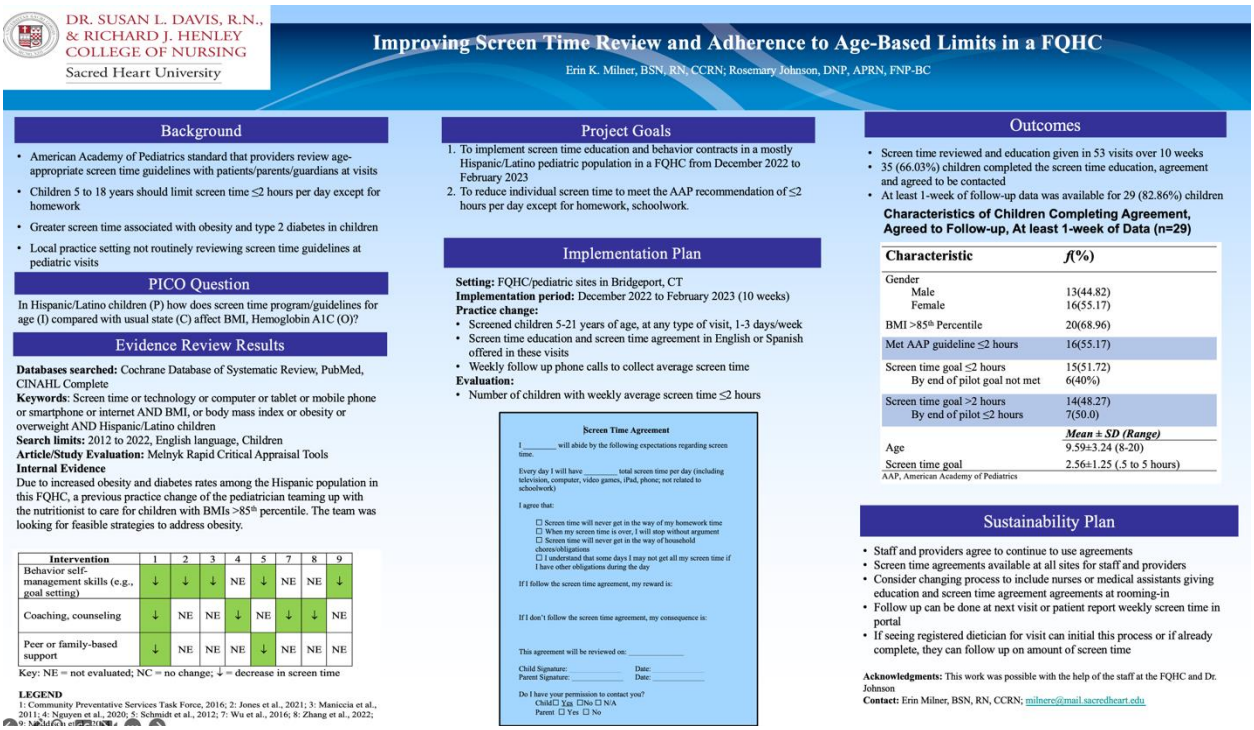
The value of the investment for this project was patient and parent/guardian increased satisfaction with the care provided as evidenced by positive feedback during the follow-up phone calls. Despite it being too early to calculate the return on investment, it is reasonable to assume that reducing screen time may reduce sedentary activity and in turn, BMI. Reducing BMI can reduce comorbidities such as Type 2 DM. This can translate into less money being spent on healthcare costs for this patient population.

To ensure sustainability, the DNP student gave copies of the screen time agreements to all the providers at each site. The goal is that the providers will review screen time at pediatric visits and use these screen time agreements to encourage patients to meet the guidelines.

Suggestions to improve process efficiency are to have the medical assistant give the patient and parent/guardian the screen time education and agreement during rooming in. Tracking of screen time could be done via the patient portal by having the patient or parent/guardian send a message with screen time use or links to free phone applications to track screen time can be given with the education. This can be shown to the provider at each visit.

Appendix O

Poster Presentation



DR. SUSAN L. DAVIS, R.N., & RICHARD J. HENLEY COLLEGE OF NURSING
Sacred Heart University

Improving Screen Time Review and Adherence to Age-Based Limits in a FQHC

Erin K. Milner, BSN, RN, CCRN; Rosemary Johnson, DNP, APRN, FNP-BC

Background

- American Academy of Pediatrics standard that providers review age-appropriate screen time guidelines with patients/parents/guardians at visits
- Children 5 to 18 years should limit screen time ≤2 hours per day except for homework
- Greater screen time associated with obesity and type 2 diabetes in children
- Local practice setting not routinely reviewing screen time guidelines at pediatric visits

PICO Question

In Hispanic/Latino children (P) how does screen time program/guidelines for age (I) compared with usual state (C) affect BMI, Hemoglobin A1C (O)?

Evidence Review Results

Databases searched: Cochrane Database of Systematic Review, PubMed, CINAHL Complete
Keywords: Screen time or technology or computer or tablet or mobile phone or smartphone or internet AND BMI, or body mass index or obesity or overweight AND Hispanic/Latino children
Search limits: 2012 to 2022, English language, Children
Article/Study Evaluation: Melnyk Rapid Critical Appraisal Tools
Internal Evidence
Due to increased obesity and diabetes rates among the Hispanic population in this FQHC, a previous practice change of the pediatrician teaming up with the nutritionist to care for children with BMIs >85th percentile. The team was looking for feasible strategies to address obesity.

Intervention	1	2	3	4	5	7	8	9
Behavior self-management skills (e.g., goal setting)	↓	↓	↓	NE	↓	NE	NE	↓
Coaching, counseling	↓	NE	NE	↓	NE	↓	↓	NE
Peer or family-based support	↓	NE	NE	NE	↓	NE	NE	NE

Key: NE = not evaluated; NC = no change; ↓ = decrease in screen time

LEGEND
1: Community Preventative Services Task Force, 2016; 2: Jones et al., 2021; 3: Maniccia et al., 2011; 4: Nguyen et al., 2020; 5: Schmidt et al., 2012; 7: Wu et al., 2016; 8: Zhang et al., 2022; 9: Neshteruk et al., 2020

Project Goals

1. To implement screen time education and behavior contracts in a mostly Hispanic/Latino pediatric population in a FQHC from December 2022 to February 2023
2. To reduce individual screen time to meet the AAP recommendation of ≤2 hours per day except for homework, schoolwork.

Implementation Plan

Setting: FQHC/pediatric sites in Bridgeport, CT
Implementation period: December 2022 to February 2023 (10 weeks)
Practice change:
- Screened children 5-21 years of age, at any type of visit, 1-3 days/week
- Screen time education and screen time agreement in English or Spanish offered in these visits
- Weekly follow up phone calls to collect average screen time

Evaluation:
- Number of children with weekly average screen time ≤2 hours

Screen Time Agreement

I _____ will abide by the following expectations regarding screen time.

Every day I will have _____ total screen time per day (including television, computer, video games, iPad, phone; not related to schoolwork)

I agree that:

☐ Screen time will never get in the way of my homework time
☐ When my screen time is over, I will stop without argument
☐ Screen time will never get in the way of household chores/obligations
☐ I understand that some days I may not get all my screen time if I have other obligations during the day

If I follow the screen time agreement, my reward is:

If I don't follow the screen time agreement, my consequence is:

This agreement will be reviewed on: _____

Child Signature: _____ Date: _____
Parent Signature: _____ Date: _____

Do I have your permission to contact you?
Child☐ Yes ☐No ☐ N/A
Parent ☐ Yes ☐ No

Outcomes

- Screen time reviewed and education given in 53 visits over 10 weeks
- 35 (66.03%) children completed the screen time education, agreement and agreed to be contacted
- At least 1-week of follow-up data was available for 29 (82.86%) children

Characteristics of Children Completing Agreement, Agreed to Follow-up, At least 1-week of Data (n=29)

Characteristic	*f*(%)
Gender	
Male	13(44.82)
Female	16(55.17)
BMI >85th Percentile	20(68.96)
Met AAP guideline ≤2 hours	16(55.17)
Screen time goal ≤2 hours	15(51.72)
By end of pilot goal not met	6(40%)
Screen time goal >2 hours	14(48.27)
By end of pilot ≤2 hours	7(50.0)
	Mean ± SD (Range)
Age	9.59±3.24 (8-20)
Screen time goal	2.56±1.25 (.5 to 5 hours)

AAP, American Academy of Pediatrics

Sustainability Plan

- Staff and providers agree to continue to use agreements
- Screen time agreements available at all sites for staff and providers
- Consider changing process to include nurses or medical assistants giving education and screen time agreement agreements at rooming-in
- Follow up can be done at next visit or patient report weekly screen time in portal
- If seeing registered dietician for visit can initial this process or if already complete, they can follow up on amount of screen time

Acknowledgments: This work was possible with the help of the staff at the FQHC and Dr. Johnson
Contact: Erin Milner, BSN, RN, CCRN; milnere@mail.sacredheart.edu