

Moving Beyond Written Reinforcement: Using Taped Video Skill Clips to Reinforce Pediatric Patient Education and Increase Caregiver Confidence

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Background & Significance

Pediatric nurses are frequently given the task of teaching families to care for their ill child in the home environment.

- 13.9 % of children in the U.S. have special health care needs (CDC National Survey 2010).
- Parent cognitive functioning not at optimal level due to the stress of the ill child.
- Learning styles of parents have changed
- Growing illiteracy rates : decreased health literacy

Background & Significance

The Use of Video Instruction in Patient Education:

- Caregivers had greater satisfaction with video instruction than written materials alone (Block & Bloch, 2013).
- Caregivers who had video instruction had a higher degree of confidence performing procedures (Barr et al.,2013).
- Educational videos and take home materials reduce caregiver anxiety (Heckmann & Beauchesne, 2013).

Background & Significance

Health Literacy:

- IOM report (2013) stressed importance of addressing health literacy in patient education.
- Health literacy an important predictor of a caregiver's ability to provide proper care in the home (Tran, Robinson, Keebler, Walker & Wadman, 2008).

Background & Significance

- Low literacy rates of caregivers associated with higher mortality rates and more frequent hospitalizations (Mitchell et al., 2012).
- Video instruction in patient teaching improved material retention in low literacy group (Macy, Davis, Clark & Stanley, 2011)

Problem

- The Family Learning Center taught 2,323 various classes for 1,229plus families in 2015.
- The pediatric educational material that is currently available at RB&C is outdated and very lengthy.
- Video skill clips developed to assist parents in skill acquisition and reinforcement.
- The plan is to place the video skill clips on the hospitals Skylight System when they are completed.
- The video skill clips will also be placed on a DVD for home use.

Practice Problem

Do the caregivers think the video skill clips are a feasible, acceptable and effective method for learning a medical procedure required to care for a child in the home environment?



Purpose Statement

The purpose of this study was to:

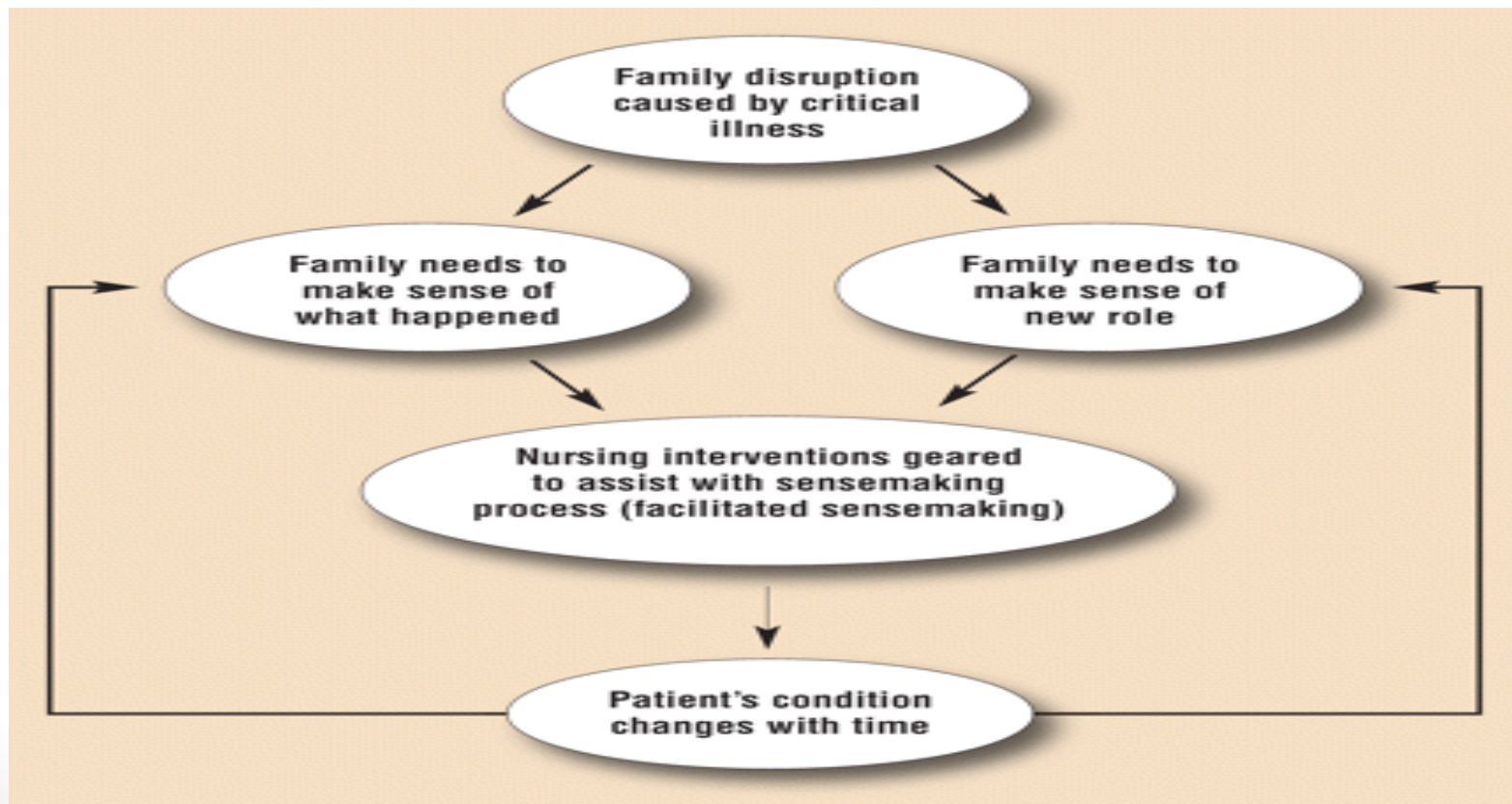
- (a) Examine the feasibility, acceptability, and effectiveness of video skill clips to reinforce one-on-one instruction related to the child's care with the nurse educator.
- (b) Examine if the video skill clips increase caregiver confidence in procedure performance.

Research Questions

- (1) What effect does viewing the video skill clips have on a caregiver's confidence to perform the required skill.
- (2) What is the (a) acceptability, (b) feasibility, and (c) effectiveness of integrating video skill clips in caregiver education prior to the child's discharge?



Theoretical Framework: Facilitated Sense-making Theory Goal is to empower caregivers !



Methods

- **Design:** One- Group Pretest – Posttest designed study was performed to assess the feasibility, acceptability, and efficacy of video skill clip intervention and if caregiver confidence was improved
- **Setting:** RB& C Family Learning Center that is part of a 244 bed Midwestern Pediatric Teaching Hospital
- IRB approval obtained from University Hospitals of Cleveland



Sample: Inclusion Criteria



- Non-probability convenience sample
- 40 caregivers (male or female)
- 18 years of age or over
- Must be the parent/caregiver of a child that requires medical procedures in the home.
- Able to speak and understand English

Sample: Exclusion Criteria

- Caregivers who were unable to complete educational sessions with the nurse educator in the Family Learning Center for any reason.
- Caregivers who had previously watched video skill clips or have had prior education in the Family Learning Center on past admissions.
- Caregivers who were healthcare providers.

Participant Recruitment

- Caregivers signed up to meet with educators in the Family Learning Center (FLC) were asked to participate in the study by the principal investigator .
- Appointment was made with caregiver at their convenience prior to their FLC session.
- Study participation voluntary

Participant Recruitment

- Participants could withdraw from the study at anytime without consequence.
- Informed consent was obtained & study information sheet provided.
- Study participants were given a five dollar gift card that could be used in the hospital coffee shop as an incentive.

Measurement Tools

- **Demographic Sheet**

Sex, age, highest level of education, race/ethnicity, age of child, past experience with medical procedures

- **Caregiver Video Skill Clip Survey**

- Survey uses a Visual Analog Scale and open ended questions
- The pretest consisted of only the VAS style questions
- The posttest included VAS style questions plus dichotomous yes/no questions.

Sample Survey Questions

- My knowledge about the medical skill.

(Please place slash mark on the line below)

a little |-----| a lot

Comments:

- My level of confidence with performing the medical skill at home.

(Please place a slash mark on the line below)

a little |-----| a lot

Comments:

Sample Survey Questions

- This skill clip is practical and easy to use.

(Please place a slash mark on the line below)

a little |-----| a lot

Comments:

- The video skill clip was useful for learning the required skill.

(Please place a slash mark on the line below)

a little |-----| a lot

Comments

Study Procedure

- Completion of Caregiver Demographic Survey
- Pretest prior to viewing video skill clip
- Post test after viewing of intervention video skill clip
- Session with FLC educator following the intervention video skill clip and survey with the researcher

The Intervention : Video Skill Clips

- Twenty one medical procedures performed according to hospital policy were videotaped using an iPad
- Peer reviewed by pediatric registered nurses and caregivers who served on the hospital Family Advisory Board.
- The iPad allowed the nurses to produce and edit the medical procedures without the need of an expensive camera crew.

The Intervention : Video Skill Clips

- Video skill clips were made available for caregiver viewing on iPads or the hospital's inpatient educational learning management system.
- The video skill clips averaged about two minutes in length, allowing the caregivers to learn the information in small doses.

Video Skill Clips

Currently 21 total

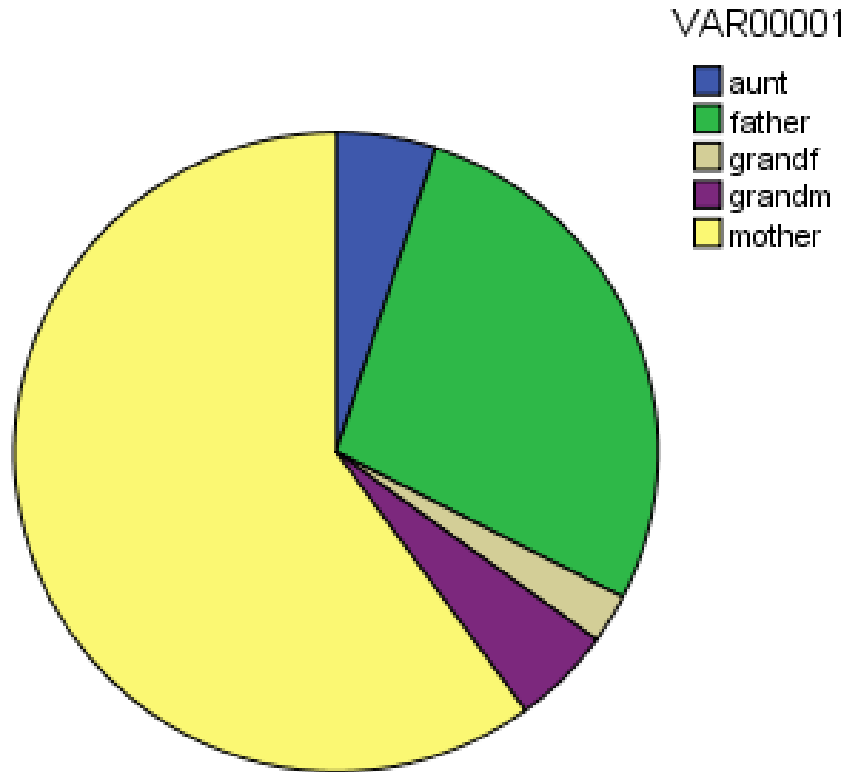
A few examples:

- **Handwashing (0:28)** – *Learn how to correctly wash your hands to remove dirt and germs.*
- **PICC**
 - **Flushing with Heparinized Saline – PICC (1:48)** – *Learn how to flush the PICC.*
 - **Using SASH to Give Medication (8:02)** – *Learn how to give antibiotics to your child at home with a PICC.*
- **Broviac**
 - **Putting on Sterile Gloves (1:14)** – *Learn how to correctly put on sterile gloves.*
 - **Dressing Change (5:23)** – *Learn how to change a Broviac dressing.*
 - **Cap Change (2:54)** – *Learn how to change the Broviac cap.*
 - **Flushing with Heparinized Saline – Broviac (2:23)** – *Learn how to flush the Broviac.*
 - **Using SASH to Give Medication (8:02)** – *Learn how to give antibiotics to your child at home with a Broviac.*

Analysis

- Quantitative data downloaded & analyzed using SPSS Statistics 24 software.
- Quantitative data presented with descriptive statistics of mean, mode, median & standard deviation.
- Qualitative data recorded & analyzed for relationships.
- Both quantitative & qualitative data analyzed to see what insights the subjects offered to improve the video skill clips.
- A paired T –test was used to compare the means for the first three questions of the pretest/ posttest.

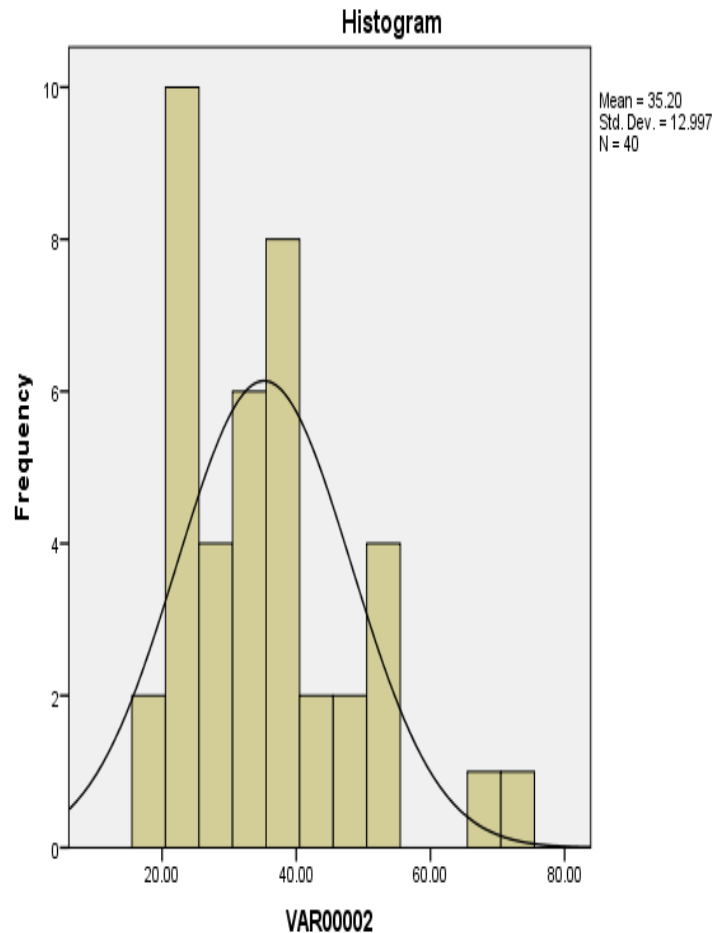
Results from Caregiver Demographic Survey



Caregivers represented in the study:

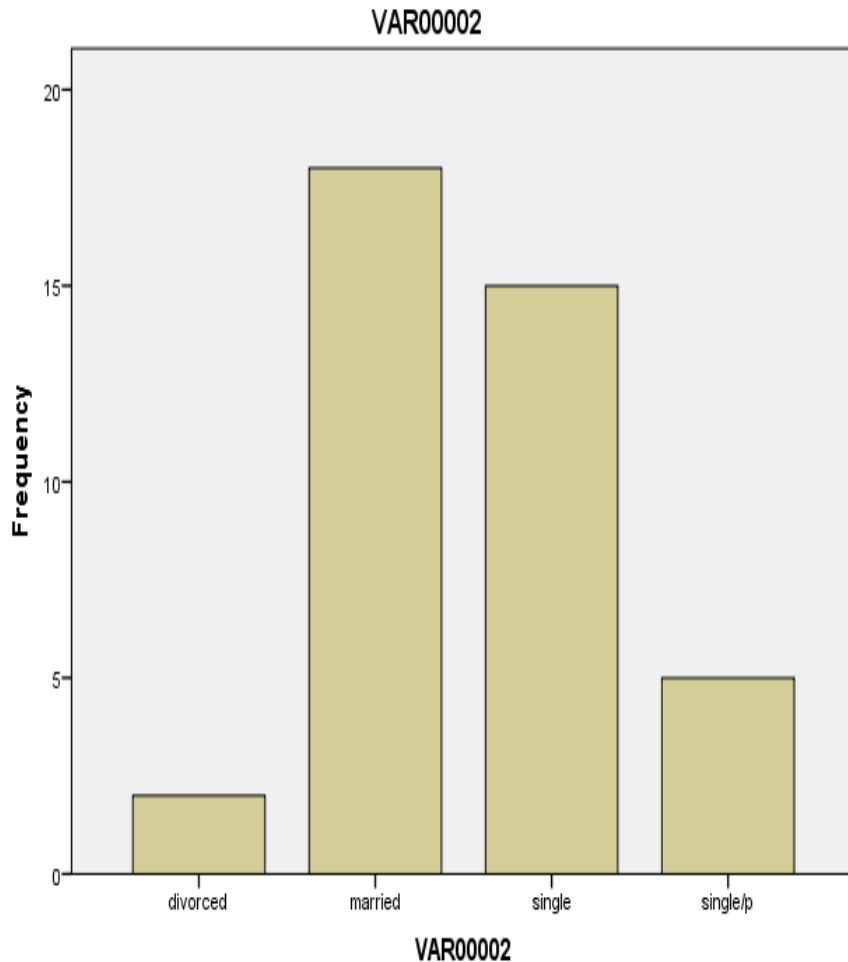
- Mother and Fathers= 87.5 %
- Grandparents=7.5%
- Aunts=5%

Caregiver Age



- Chart shows the average age of all caregivers = ($M=35.2$ years)
- Analysis of mothers & fathers only – ($M= 32.7$ years).

Marital Status



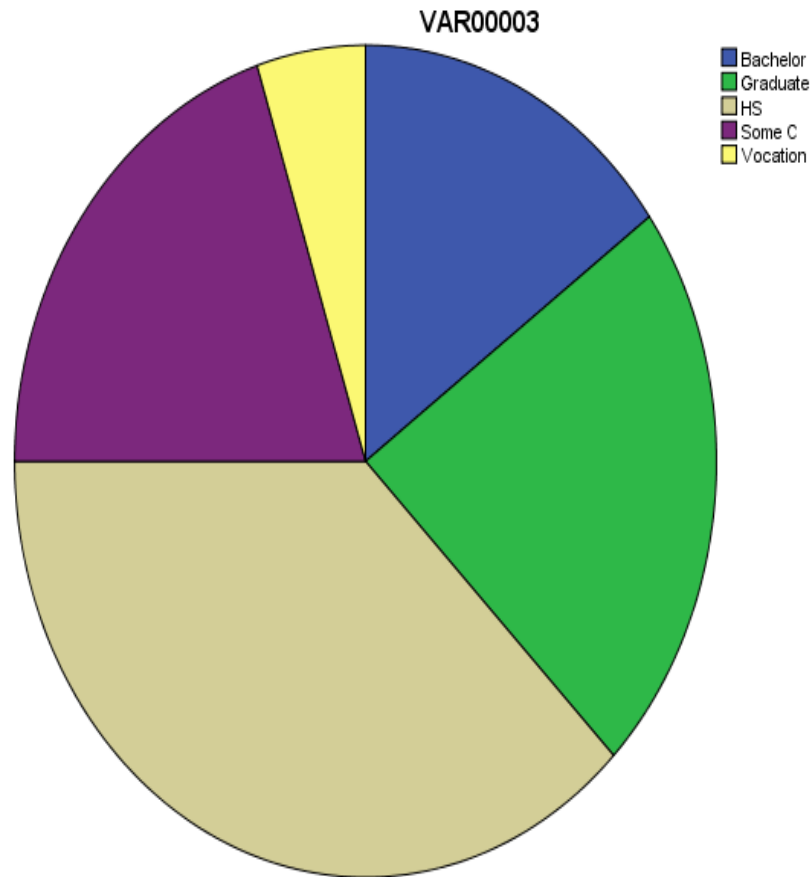
Married (n=18, 45%)

Single/ living with partner=
(n=5, 12.5%)

Single/never married=
(n=15, 37.5%)

Divorced= (n=2, 5%)

Education Level



Tan:

High School /GED n=15, 37.5%

Purple:

Some College
n= 8, 20%

Yellow:

Vocational School
n=2, 5%

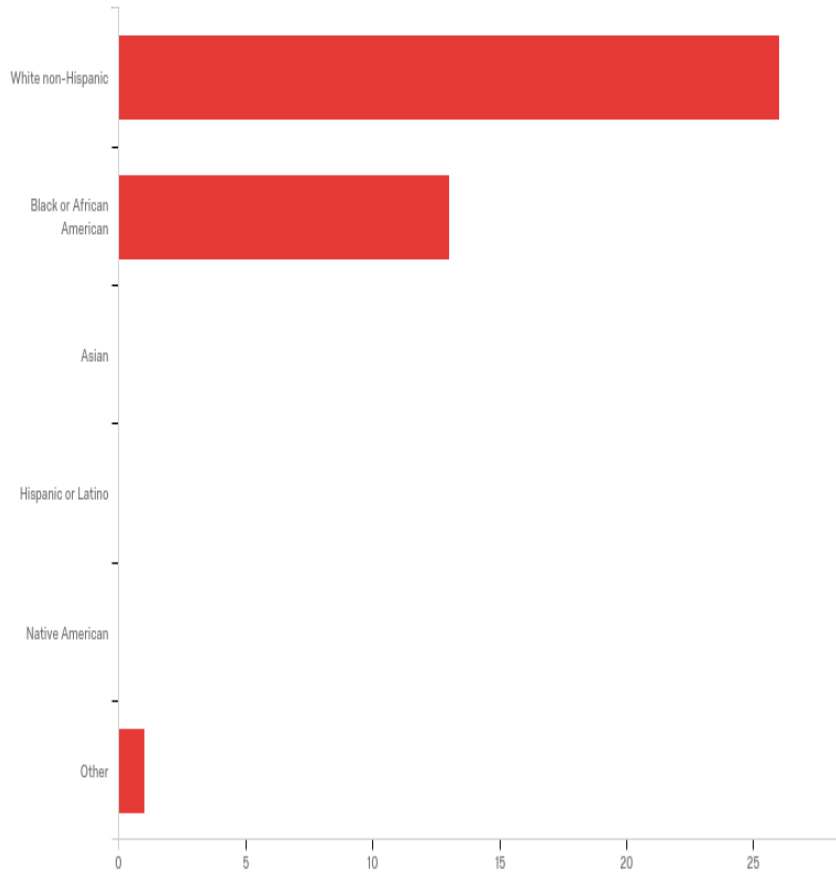
Blue:

Bachelor Degree
n=6, 15%

Green:

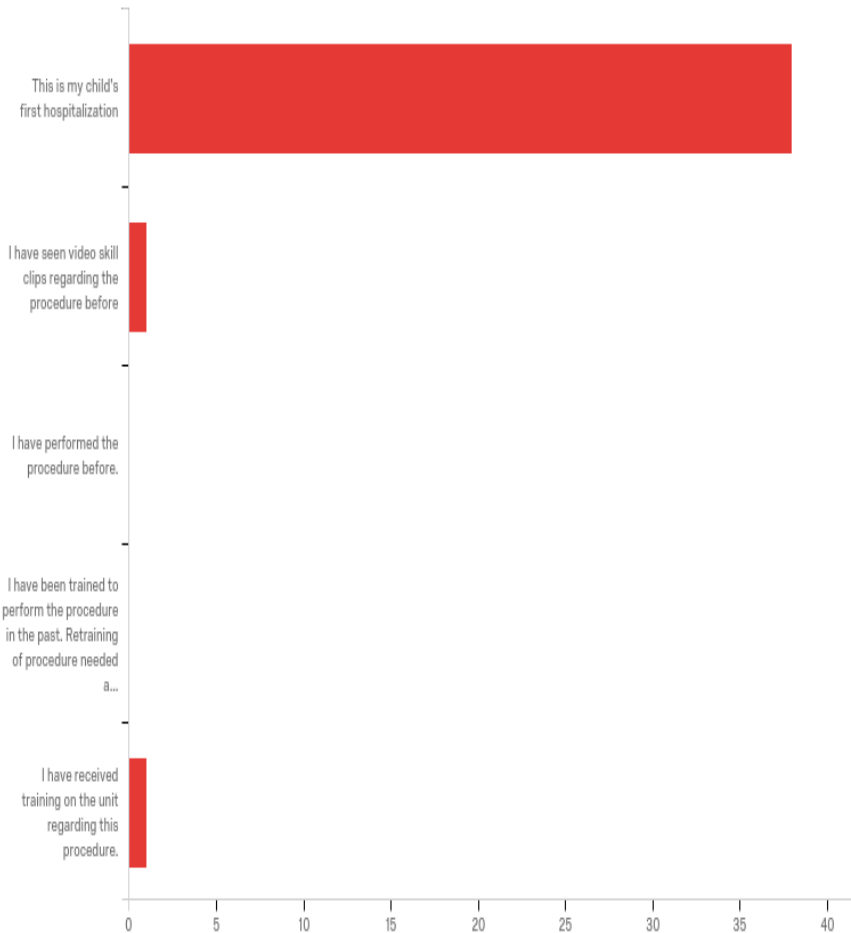
Graduate degree
n=9, 22.5%

What is the race-ethnicity you most clearly identify with?



- Caucasian- non -Hispanic ($n=26$, 65%)
- African American ($n=12$, 30%)
- Biracial ($n=2$, 5%).

What is your past experience with medical procedures?



Results of caregivers with children who were experiencing their first hospitalization and had no past knowledge of the medical procedure featured in the video skill clip ($n=32$, 80%).

Children In The Study

- The mean age of the children requiring the medical procedure was 2.48 years ($SD= 1.32$), ranging in age from 4 days old to 15 years of age.



Children In The Study

Diagnosis (n=40)

<i>Primary Medical Diagnosis</i>	<i>Percentage of Children</i>
Gastrointestinal conditions	n=10, 25%
New onset Diabetes	n=7, 17.5%
Complications associated with preterm births	n=6, 15%
Cardiac conditions	n= 5, 12.5%
Respiratory conditions	n=4, 10%
Neurological issues	n=3, 7.5%
Muscular disorders	n=3, 7.5%
Cancer	n=1, 2.5%
Unknown	n=1, 2.5%

Most Frequently Used Video Skill Clips

<i>Video Skill Clip Viewed</i>	<i>Percentage of Caregivers (total n=40)</i>
Nasal Gastric Tube Insertion	n=10, 25%
PICC Line Flushing	n=7, 17.5%
Subcutaneous Injections	n=7, 17.5%
Gastric Tube Care	n=7, 17.5%
Handwashing	n=4, 10%
Intra-tracheal Suctioning	n=4, 10%
Central line dressing change	n=1, 2.5%

Caregiver Pre-Test and Posttest Scores: Paired Samples T-Test (N=40)

Questions	Pretest Results	Post test Results	Sig	T-test Mean	T-test SD	t	df	T- test Sig (2-tail)
My knowledge about the medical skill.	M=43.57 SD=36.29	M=77.12 SD=28.11	.000	-33.55	31.49	-6.74	39	<.0001***
A video skill clip will help me learn to take care of my child at home.	M=76.66 SD=23.36	M=84.60 SD=22.24	.005	-7.94	24.22	-2.07	39	.045*
My level of confidence with performing the medical skill at home.	M=65.07 SD=32.19	M=83.42 SD=23.37	.000	-18.35	28.12	-4.12	39	<.0001***

*p<.05

**p<.01

***p<.001

Acceptability & Feasibility

Scores: Posttest (N=40)

Questions	Yes n (%)	No n (%)
Would you change anything about the video skill clip?	2(5%)	38(95%)
Do you plan to watch this video skill clip again?	23(57.5%)	17(42.5%)
Would you use this video skill clip at home?	36(90%)	4(10%)
The video skill clip length was just right	40(100%)	0%

Acceptability & feasibility results from the posttest (N=40)

Used 100 mm VAS scale

0= “a little” and 100mm= “a lot”

	Mean	SD
The video skill clip was practical and easy to use	94.15	6.84
The video skill clip was useful for learning the required skill	91.20	10.75
A DVD of this skill clip would be a useful resource in the home	87.67	20.72

Study Limitations

- Study participants were recruited from one hospital which might limit the generalizability of the findings.
- The study consisted mostly of Caucasian female caregivers with at least a high school education.
- Small sample size (n=40).



Practice Implications for Video Skill Clip Usage

1. Video skill clips are an excellent teaching tool for caregivers:

- who learn best through visual and auditory methods
- learners with low literacy levels
- who are stressed and need extra time to learn

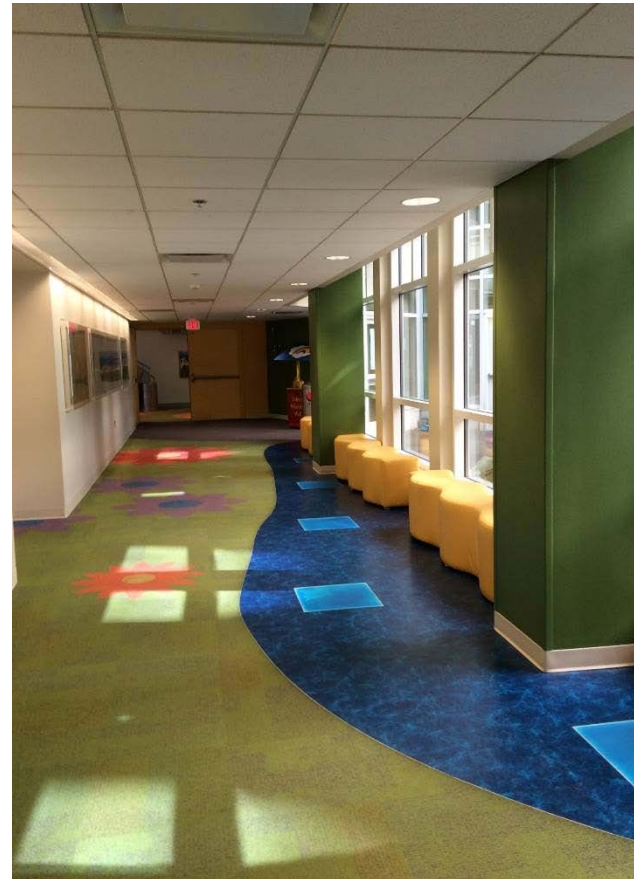
2. Translation of the video skill clip in other languages

3. Instructional tool for nursing and medical students new to the area of pediatrics.

4. Refresher for nursing and medical staff

Thank You

- Nurses at the Family Learning Center of RB&C
- Dr. Valerie Boebel Toly
- Dr. Donna Dowling
- Dr. Marguerite Di Marco



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