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# Is It Cost Effective To Distribute Educational Videos Of Injury Prevention In The Emergency Room

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## Citation

K Nibhanipudi. *Is It Cost Effective To Distribute Educational Videos Of Injury Prevention In The Emergency Room*. The Internet Journal of Healthcare Administration. Volume 9 Number 1.

DOI: [10.5580/IJHCA.26477](https://doi.org/10.5580/IJHCA.26477)

## Abstract

Objective:

To determine cost effectiveness from the responses received from parents after watching video of demonstration of injury prevention in the pediatric emergency room compared to the responses received by mail after watching the same video being distributed in the ER at home.

Hypothesis:

The demonstration of injury prevention video in the pediatric emergency room, while waiting to be seen is an effective way of patient education, as evidenced by better responsiveness to questionnaire, while watching video in the ER compared to watching video at home and mailing the responses in a postage paid envelope.

Methods:

A total number of 140 parents were registered. The group were subdivided into two groups namely A and B. Group A, consisting of 70 people, who received educational video of injury prevention, one for each member. The same group was also given a questionnaire to be completed after viewing the video. The group members were requested to mail their responses after they viewed the video at home in a preaddressed stamped envelope that were provided to them. The second Group B, also consisting of 70 members, were requested to view the video of the injury prevention in the pediatric emergency room as they were waiting to be seen. These parents of Group B, were given the same questionnaire as the members of group A and were requested to answer the questions and return the questionnaire before leaving the emergency room. The contents of the video were as follows: 1. never shake the baby 2. night time bath.3. baby left alone in the car 4. leaving the window open 5. prevention of crib death 6. hidden dangers such as electric outlets, cleaners, disposing plastics and proper usage of car seats.

Results:

In the first group, group (A), only two of the 70 subjects mailed the responses to the questionnaire (2.9% response rate). In the second group (group B), all those who viewed the video in the emergency room, answered and returned their responses to questionnaire. The response rate was 100%. All of them strongly agreed with the suggestions indicated in the video.

Statistical analysis:

All 70 out of 70 parents who viewed the injury prevention educational video in the emergency room while waiting to be seen, responded to questionnaire immediately. The response rate was 100%. Only 2 out of 70 parents mailed their responses to the questionnaire, when they were given the same educational video to view at home. In this group, the response rate is only 2.9%. This difference is statistically significant and the p value by the two sample t-test method is <0.0001.

Conclusions:

The demonstration of injury prevention video in the pediatric emergency room is more effective way of educating the patients and families compared to distributing the same videos to take home for viewing, and also least expensive.

Implication for policy makers:

The demonstration of injury prevention video in the pediatric emergency room is more effective way of educating the patients and families compared to distributing the same videos to take home for viewing, and also least expensive.

Implication for public:

The study identifies the method of educating parents regarding injury prevention.

## **INTRODUCTION**

In pediatric population, the most common cause for both morbidity and mortality is injury, mainly accidental. Injury prevention education both to the parents and to the children and adolescents is essential part of disposition.

They are multiple methods of patients' education namely showing pictures, distribution of pamphlets, flyers and other reading material. Video distribution is also one of such methods. In our study, we want to compare the patients' response to questionnaire after watching the contents of the video at home and mailing their responses to simple questions versus watching while at pediatric emergency room and answering the questions before they left the emergency room. The contents of the videos were as follows: 1. never shake the baby 2. night time bath.3. baby left alone in the car 4. leaving the window open 5. prevention of crib death 6. hidden dangers such as electric outlets, cleaners, disposing plastics and proper usage of car seats.

A simple questionnaire were made to each of the 6 topics in the video as follows:

- a. strongly agree.
- b. somewhat agree
- c. totally disagree.

Our study is the only one to make such comparison and establish that demonstrating the educational video in the emergency has better outcome.

## **METHODS**

It is an IRB approved study. It is a voluntary anonymous parents' survey. There are no patient identifiers.

The sample size is 140 parents. The parents were subdivided into two parts, group A and group B. Group A, consisting of 70 parents, received one each, of educational video of injury prevention. The same group was also given a questionnaire to be completed after viewing the video at home and mail

their responses in a preaddressed stamped envelope that were provided to them. The second Group B, also of 70 parents, were requested to view the video of the injury prevention in the pediatric emergency room as they were waiting to be seen. This Group B parents, were also given the same questionnaire as the members of group A and requested to answer the questions and return the responses before they left the emergency room. The following topics were presented in the video;

1. never shake the baby
2. night time bath.
3. baby left alone in the car
4. leaving the window open
5. prevention of crib death
6. hidden dangers such as electric outlets, cleaners, disposing plastics and proper usage of car seats.

A simple questionnaire was made for each of the 6 topics in the video and parents were asked to encircle their response as per their understanding. The questions were:

- a. strongly agree.
- b. somewhat agree
- c. totally disagree

## **RESULTS**

In the first group, group (A), only two of the 70 subjects mailed their responses in a pre-postage paid envelop (2.9% response rate). Those in the second group, who viewed the video in the emergency room, all of them answered the questionnaire and gave their responses to the principal investigator; response rate was 100%.

2 of the 70 in group A and all of them in Group B strongly agreed with the suggestions indicated in the video.

## **STATISTICAL ANALYSIS**

All 70/70 parents who viewed the injury prevention educational video in the emergency room while waiting to be seen, responded to questionnaire immediately. The response rate was 100%. Only 2/70 parents mailed their responses to the questionnaire, when they were given the same educational video to view at home. In this group, the response rate is only 2.9%. This difference is statistically significant and the p value by the two sample t-test method is <0.0001.

## **CONCLUSIONS**

The demonstration of injury prevention video in the pediatric emergency room is more effective way of educating the patients and families compared to distributing the same videos to take home for viewing, and also least expensive

## **DISCUSSION**

Powell and his collaborators conducted a study to compare a pictorial anticipatory guidance (PAG) sheet requiring limited reading skills to a TIPP (The Injury Prevention Program) sheet for providing injury prevention information to low-income urban families

They interviewed 66 parents. 46 were in the PAG group and 20 in the TIPP group. There were no differences between groups in mean parent age, percent minority race, or percent public aid. More than half the parents in either group can recall any specific injury topic. However, very limited information can be recalled few weeks after the clinic visit. The use of PAG sheets did not improve recall. Successful injury prevention counseling in this population may require comprehensive and repetitive efforts<sup>1</sup>.

A home project study by Mason, M, and his colleagues to determine the reliability and validity of injury prevention reliability and validity of The Injury Prevention Project Safety Survey (TIPP-SS) of the American Academy of Pediatrics in measuring injury prevention practices. They studied in Eighty-eight families having children 3 to 5 years by using Test-retest reliability and validity of TIPP-SS. Results are compared for agreement of individual items and the whole survey. Results don't convey behavior but convey TIPP-SS knowledge and attitudes. Parents do not report the actual conditions or behaviors. This study infers the need to develop a valid home-based, injury prevention, behavior assessment tool should continue and be done in a way that carefully addresses potential instruments' validity<sup>2</sup>.

Shields and his colleagues wanted to evaluate how a

computer kiosk intervention works on parents' self-reported safety knowledge as well as observed regarding child safety seat, smoke alarm use, and safe poison storage. Their study was mainly to compare self-reported versus observed behaviors. It was a randomized controlled trial enrolling 720 parents of young children (4 months to 5 years) in the pediatric emergency department of a level 1 pediatric trauma center. Enrolled parents received tailored safety information (intervention) or generic information (control) from a computer kiosk after completing a safety assessment. Parents were telephoned 4 to 6 months after the intervention to assess self-reported safety knowledge and behaviors; in-home observations were made 1 week after the telephone interview for a subset of 100 randomly selected participants. Their study concluded that observed safety behaviors were lower than self-reported use for both groups. No positive or negative predicted values were reported from their study.

In conclusion, this study added very limited knowledge on the impact of computer tailoring home safety information. Discrepancies between observed and self-reported behavior are important because the quality of a tailored intervention depends on the accuracy of participant self-reporting. Improved measures should be developed to encourage accurate reporting of safety behaviors<sup>3</sup>.

Another study conducted by Watson and his colleagues to measure the validity of safety behaviors, safety equipment use and hazards reported on a questionnaire by parents/caretakers with children aged under 5 years participating in a series of home safety case-control studies. The questionnaire measured safety behaviors, safety equipment use and hazards being used as exposures in five case-control studies. Responses to questions were compared with observations made during a home visit. The researchers making observations were blind to questionnaire responses.

In essence their results show in safety practices, a larger proportion of respondents under-reported than over-reported safe practice (negative predictive value < positive predictive value). This study found that the validity of self-reports varied with safety practice. High specificity questions will be useful for practitioners for identifying households who may benefit from home safety interventions and will be useful for researchers as measures of exposures<sup>4</sup>. See comment in PubMed Commons below

See comment in PubMed Commons below Kendrick and his colleagues evaluated the effectiveness of home safety education, with or without the provision of low cost,

discounted or free equipment in increasing home safety practices or reducing child injury rates and whether the effect varied by social group.

They did a lot of literature search namely, The Cochrane Library, MEDLINE, EMBASE, CINAHL, DARE, ASSIA, Psych info and Web of science, plus a range of relevant web sites, conference proceedings and bibliographies regarding home safety education with or without safety equipment. The authors, attempted to obtain individual participant level data (IPD) for all included studies and also social and demographic variables. Their results infer that there was a lack of evidence that interventions reduced rates of thermal injuries, poisoning or other range of injuries. There was no consistent evidence that interventions were less effective in families whose children were at greater risk of injury. Finally the authors conclude that evidence is lacking regarding its impact on child injury rates. There was no consistent evidence that home safety education, with or without the provision of safety equipment was less effective in those at greater risk of injury<sup>5</sup>.

In an emotionally challenging, health care needs of cancer patients, Bredart and his colleagues have studied various strategies focusing on doctor-patient communication. They utilized interventions such as handing out videos or written material to facilitate better doctor-patient communication. In their study, the physicians have also audio-taped the consultation and the management decisions. Simultaneously, patients were also asked to evaluate over doctors' communication skill trainings. The results were promising. However in clinical practice, further research should be implemented to assess their appropriateness across sociocultural contexts and their long-term effectiveness.<sup>6</sup>

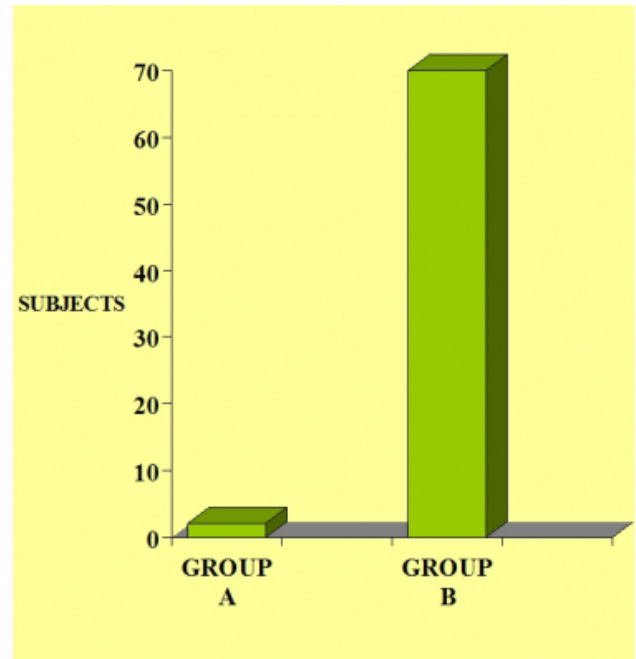
**Table 1**

Number of Responses received after watching injury Prevention Video

| Number of mailed responses received by mail for questionnaire. | Number of responses received directly in the pediatric emergency room |
|--|---|
| 2/70.  | 70/70.  |

**Graph 1**

Number of responses received after watching injury prevention video



Group A# of responses for questionnaire received by mail for injury prevention video.  
Group B# of responses received directly in the peds. Emergency room for questionnaire.

**Table 2**

Response to questionnaire in Group B. Topics in the demonstrated inj. Prev. video

| Responses to questionnaire. | 1. Never shake the baby. | 2. Night time bath. | 3. Baby left alone in the car | 4. Leaving the window open | 5. Prevention of Crib death | 6*Hidden dangers |
|-----------------------------|--------------------------|---------------------|-------------------------------|----------------------------|-----------------------------|------------------|
| A. Strongly agree           | 70/70                    | 70/70               | 0/70                          | 0/70                       | 0/70                        | 70/70            |
| b. Somewhat agreeable       | 0/70                     | 0/70                | 0/70                          | 0/70                       | 0/70                        | 0/70             |
| c. Strongly disagree        | 0/70                     | 0/70                | 0/70                          | 0/70                       | 0/70                        | 0/70             |

6\* hidden dangers such as electric outlets, cleaners, disposing plastics and proper usage of car seats.  
Group A parents, 2 out of 70 received mailed responses reveal strong agreement to all the topics in the videos.

**Survey Sheet**

| <u>Topics in the video</u>   | <u>Circle the best response</u>  |
|--|--|
| 1. Never shake the baby  | i. Strongly agree<br>ii. Somewhat agreeable<br>iii. Strongly disagree    |
| 2. Night time bath   | i. Strongly agree<br>ii. Somewhat agreeable<br>iii. Strongly disagree.   |
| 3. Baby left alone in the car  | i. Strongly agree.<br>ii. Somewhat agreeable.<br>iii. Strongly disagree. |
| 4. Leaving the window open.  | i. Strongly agree<br>ii. Somewhat agreeable<br>iii. Strongly disagree    |
| 5. Prevention of crib death  | i. Strongly agree<br>ii. Somewhat agreeable<br>iii. Strongly disagree    |
| 6. Hidden dangers such as electric outlets, Cleaners, disposing plastics and proper usage of car seat. | i. Strongly agree<br>ii. Somewhat agreeable<br>iii. Strongly disagree    |

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