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IMPACT OF VIDEO DISCHARGE INSTRUCTIONS FOR PEDIATRIC FEVER AND CLOSED HEAD INJURY FROM THE EMERGENCY DEPARTMENT

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☐ **Abstract—Background: Lack of understanding of diagnosis and disease process remains a major complaint of caregivers who bring their children to the pediatric emergency department (PED). Misunderstanding of diagnosis and discharge instructions can lead to unnecessary return visits and health disparities. Objective: We attempted to determine if video discharge instructions when added to standard of care written and verbal instruction improved caregivers' comprehension of their child's diagnosis, disease process, and discharge instructions. Methods: Caregivers who presented to the PED with a child's chief complaint of fever or closed head injury (CHI) were included and randomized into a control or intervention group. Each group received standard discharge instructions, and the intervention group additionally viewed a video. Participants completed a posttest on knowledge and were followed 2 weeks post-visit to determine follow-up care. Results: Sixty-three caregivers participated in the study. Eleven participants had less than a high school (HS) education and 52 had more than a HS education. Thirty-one children presented with fever and 32 with CHI. The intervention group had significantly higher percentage of correct answers on postintervention tests (median [Mdn] = 88.89) than the control (Mdn = 75.73; $p < 0.0001$). Participants in the intervention group with less than a HS education (Mdn = 89.47) and more than HS education (Mdn = 88.89) had similar test scores ($p = 0.13$), whereas those in the control group with less than a HS education (Mdn = 66.67) had significantly lower test scores than those with more than a HS education (Mdn = 77.78; $p = 0.03$). Conclusion: For caregivers with children who presented to the PED with fever and CHI, video discharge instructions improved caregiver comprehension of the child's diagnosis and disease process when added to verbal and written instructions.** © **2016 Elsevier Inc.**

☐ **Keywords—caregiver knowledge; discharge instructions; emergency medicine; emergency room; pediatrics**

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INTRODUCTION

Patients and caregivers' understanding of diagnosis and discharge instructions has changed little over the years. Verbal and written instructions are often presented to patients incompletely, particularly in the emergency department (ED) setting because the ED is a hectic environment and provider's time and communication can be intermittent. Studies have found that patients often cannot provide accurate summaries about their diagnosis and discharge instructions (1–4). Moreover, patients and families continue to receive written discharge instructions that are frequently composed at levels that exceed literacy levels of the general population (5,6). It has been widely reported that patients with lower

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literacy levels are less likely to comprehend discharge instructions (7–9). In addition, it has been noted that ED patients in general have difficulty understanding and complying with instructions, appropriate follow-up care, and often overestimate their comprehension of discharge instructions (10–12). Reported interventions to assist with improved comprehension and compliance among caregivers and patients include providing multimodal structured content that is provided verbally, written, and visually and at an appropriate reading level in the patient's primary language (13). A recent study evaluated video discharge instructions for fever, gastrointestinal (GI) issues, and asthma in an ED found improvement in caregiver comprehension of the material (14). Fever and closed head injury (CHI) are 2 common presenting problems in pediatric EDs (PEDs), and have several modifiable aspects of follow-up and return visits based on the education provided and comprehended (15,16). Therefore, this study sought to determine if innovative video discharge instructions for fever and CHI improved caregiver's comprehension of their child's diagnosis, treatment, and follow-up care when combined with standard of care written and verbal instruction. We hypothesized that the addition of video discharge instructions would improve comprehension.

METHODS

Study Design

This was a pilot, prospective, randomized, controlled trial with convenience sampling that was approved by the University of Florida Health Science Center Jacksonville institutional review board. All participants completed signed informed consent before enrollment. Investigators were purposefully vague during the consent process regarding the precise nature of the study in order to avoid participants paying greater attention to the discharge instructions because they would complete a post-test (Appendices A and B). However, participants were told after their post-test the true nature of study. Short videos were created by a professional videographer with discharge instructions for fever and CHI specifically for this study. Fever and CHI were chosen for our convenience sample because they are 2 of the most common presenting complaints to the PED. Video content was determined by an expert panel of pediatric emergency physicians, and contained information about diagnosis, treatment, disease process, and discharge instruction. The aim was to keep the video content at or below an eighth-grade reading level. The simplified measure of gobbledygook (SMOG) readability test is a reliable and valid measure of readability that estimates the years of education needed to understand a piece of writing by producing a SMOG grade (17). We assessed the SMOG grade of the video transcripts and confirmed that both the fever content (SMOG = 7.3) and CHI content (SMOG = 8.3) were at or below the eighth-grade level. The fever video was 5.42 min in duration and the CHI video was 3.51 min in duration; the videos were a blend of animation and moving video using multiple races and were previewed by a sample of patients and staff before implementation. Investigators also completed a SMOG readability test of the standardized printed discharge instructions for fever (SMOG = 7.75) and CHI (SMOG = 7.3) used by the PED, taken from the EPIC electronic medical record program.

Study Setting and Population

Investigators conducted this study at an urban academic PED with 25,000 visits annually. Potential study participants included caregivers ≥18 years of age who presented to the PED between September and November of 2012 with a child whose discharge diagnosis included fever or CHI. Exclusion criteria included non-English speaking, suspected child abuse cases, and caregivers whose child presented as level 1 or in a resuscitative state, appeared toxic, or were admitted into the hospital.

Study Protocol

After consent, participants were randomized to either a standard care (control) or intervention group. All participants received verbal discharge instructions along with their printed discharge instructions as part of standard care for the appropriate discharge diagnosis (fever or CHI). The intervention group viewed the video discharge instructions alone in the examination room after standard care instructions. All participants completed an illness-specific comprehension post-test (Appendices A and B) immediately after delivery of their discharge instructions. The video group was asked feedback questions regarding their impression of the video, and all participants were called 2 weeks after the PED visit to determine if they returned to the PED for care for the same ailment. If the family returned to the PED for care for the same ailment, physicians determined if the family correctly followed "when to return to the PED" instructions. Post-test questions were a combination of true/false and multiple choice; the fever post-test consisted of a 9-question, 18-point questionnaire and CHI a 6-question, 19-point questionnaire each addressing diagnosis and disease process. Outside of consent for the study and implementation of the post-test, research assistants did not interact with caregivers in regard to discharge instruction; however, caregivers and patients could ask any questions of the medical provider as per usual care. Post-tests were scored as percent correct and recorded. Additional data collected on caregiver and