

PARENTAL KNOWLEDGE AND RECALL OF CONCUSSION DISCHARGE INSTRUCTIONS

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Contribution to Emergency Nursing Practice

- Nearly 1 in 5 parents were confused about when to return to the emergency department after their child was evaluated for a head injury.
- Up to 1 in 4 parents could not recall specific discharge advice related to concussion.
- Verbal discharge instructions from emergency nurses increased parent recall and knowledge of concussion discharge instructions.

Abstract

Introduction: Children increasingly are being seen in the emergency department for a concussion, or mild traumatic brain injury (mTBI). A key aim of the ED visit is to provide discharge advice that can help parents to identify an evolving neurosurgical crisis, facilitate recovery, and prevent reinjury. The present study examined parents' knowledge of symptoms and recall of discharge instructions after their adolescent's mTBI and the effect of supplementing written discharge instructions with verbal instruction and reinforcement.

Methods: We performed a nested observational study of parents/caregivers of patients who participated in a larger mTBI study. After their adolescent's mTBI, parents were given verbal and standardized written instructions. The ED discharge process was observed using a structured checklist, and parents were surveyed 3 days after discharge on knowledge and recall of discharge instructions.

Results: Ninety-three parents completed the postsurvey. Nearly 1 in 5 parents were confused about when to return to the emergency department after evaluation for head injury. Up to 1 in 4 parents could not recall specific discharge advice related to concussion. Parents who received verbal reinforcement of written discharge instructions were more likely to recall them.

Conclusion: Emergency nurses and clinicians should strive to utilize both verbal and written discharge instructions with families to help increase understanding.

Key words: Concussion; Adolescents; Parents
Discharge instructions; Emergency department

Children are increasingly seen in the emergency department for a concussion, or mild traumatic brain injury (mTBI).¹⁻³ Despite this increase in ED visits, the admission rate has remained low.³ A key aim of the ED visit is to provide discharge advice that can help parents identify an evolving neurosurgical crisis, facilitate recovery, and prevent reinjury.⁴ To achieve these

outcomes, current pediatric best practice guidelines recommend that patients and families be warned about indications for returning to the emergency department and instructed to rest until symptoms resolve.⁴⁻⁶ Cautioning against a premature return to activities that have an elevated risk of repeat concussion (eg, contact sports) should be emphasized.

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To enhance the consistency of discharge advice, staff at many emergency departments have created written education materials. Unfortunately, these materials are of highly variable quality, and their effectiveness in relation to verbal (in-person) discharge instructions is unknown.^{7,8} Another barrier, which is echoed in the literature, is that recall of discharge instructions may be poor.^{9–12} Adult patients with mTBI tend to remember little of what they were told at ED discharge, especially adults with longer periods of post-traumatic amnesia.¹³ Discharge instructions given to parents of children with mTBI may be better retained, but to our knowledge this question has not yet been examined. Finally, compliance with instructions may be an issue, perhaps because of low health literacy or inaccurate beliefs pertaining to mTBI.¹⁴

To improve the effectiveness of ED discharge instructions for mTBI, we need to better understand the optimal method for communicating discharge instructions. The present study examined the effect of supplementing written discharge instructions with verbal instruction and reinforcement. We also sought to assess parental recall of instructions after discharge from the emergency department, because the ability to understand and follow these instructions once a patient is discharged home can have a major impact on the patient's recovery.

Methods

STUDY DESIGN

We performed a nested observational study. Subjects were parents/caregivers of patients who participated in a larger randomized trial of mandated rest following acute mTBI.¹⁵ The study was approved by the Children's Hospital of Wisconsin Institutional Review Board and registered with [ClinicalTrials.gov](https://clinicaltrials.gov) (NCT01101724). The study was funded by the Injury Research Center at the Medical College of Wisconsin.

STUDY SETTING AND POPULATION

This study took place in an urban pediatric emergency department at a freestanding children's hospital (Children's Hospital of Wisconsin, Emergency Department and Trauma Center). It is the only freestanding level I pediatric trauma center in the state and has more than 60,000 visits annually. Patients for the clinical trial were recruited as a convenience sample of all eligible patients with mTBI who were evaluated and discharged from the emergency department during the study period (July 2010 through December 2012). mTBI was defined using the Acute Concussion Evaluation (ACE) form, a standardized tool endorsed by the Centers for Disease Control and Prevention.⁴ Patients were screened for eligibility if they presented with a chief complaint of an injury to the head (eg, head injury or scalp laceration), including any associated mechanism with the potential to have sustained direct force or transmitted force to the head (eg, a motor

vehicle collision or fall). Patients were eligible if they were 11 to 22 years of age, presented to the emergency department within 24 hours of injury, and were diagnosed with a concussion. Patients were excluded for the following reasons: non-English speaking or their parents could not consent in English, intellectual disability (intelligence quotient <70) or a prior mental defect or disease (eg, attention deficit hyperactivity disorder or a learning disability), intracranial injury (eg, intracranial bleeding or a cerebral contusion), no legal guardian present, were being admitted, or had conditions that interfered with valid assessment of signs and symptoms or neurocognitive or balance testing. In addition, patients were excluded if their clinician was uncomfortable with study procedures (eg, randomization or time needed for ED assessments) or if the patient lived more than 1 hour away from the Medical College of Wisconsin. Verbal and written assent was obtained from patients, and informed consent was obtained from parents. For this analysis, parent/caregiver subjects were eligible if their child met eligibility criteria for the clinical trial.

STUDY PROTOCOL

Families in the pediatric emergency department received comprehensive written discharge instructions based on the Acute Concussion Evaluation–Emergency Department Care Plan (ACE-ED), which is endorsed by the Centers for Disease Control and Prevention.⁴ Written instructions outlined red-flag symptoms (criteria for return to the emergency department) and common postconcussive symptoms, discussed the importance of physical and cognitive rest, and encouraged follow-up with a primary medical doctor or concussion specialist (see Appendix 1 for discharge instructions). Discharge instructions were assessed for readability and written at the 10.5-grade level according to the Flesch–Kincaid readability test. As part of the discharge process, verbal reinforcement of written instructions was given to the families by the emergency nurses facilitating the discharge. Although nursing staff strives to provide these verbal instructions to all patients and caregivers, pressure to move patients through quickly and other patient care duties interfere with this goal. The discharge process was observed by a trained research assistant, and content was recorded using a content checklist. Three days after discharge, a research assistant went to the patient's home and parents completed a survey assessing recall of discharge instructions, knowledge of postconcussive symptoms, and their perceptions of their child's injury.

MEASUREMENTS

Parental Attitude to Concussion Survey

The Parental Attitude to Concussion Survey (PACS) instrument was adapted from the phone follow-up surveys used in the ACE feasibility study.¹⁶ The PACS instrument uses a mix of Likert

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