

Detecting Differences in Communication During Two Types of Patient Handovers: A Linguistic Construct Categorization Approach



Wexner
Medical
Center

Zachary Woods¹, Brian Hilligoss², Andrew Duchon³, Nicholas Beecroft⁴, Emily S. Patterson⁵, PhD

¹Ohio State University, Department of Integrated Systems Engineering

²Ohio State University, College of Public Health, Division of Health Services Management and Policy

³Aptima, Inc.

⁴Ohio State University, College of Arts and Sciences

⁵Ohio State University, College of Medicine, School of Health and Rehabilitation Sciences, Division of Health Information Management and Systems

Introduction

Handover communications are centrally important to providing safe, effective care. Numerous efforts to improve handover communications have been conducted to meet accreditation requirements by The Joint Commission and by the Accreditation Council for Graduate Medical Education (ACGME).

Methods

- Transcribed ED-hospital and ICU shift change handovers.
- Linguistic Inquiry and Word Count (LIWC) software grouped hand-picked words into construct categories.
- Constructs Content and Strategy were investigated.
- LIWC output scores, the words in a construct category divided by the total words in the document, were found.
- A two-tailed t-test was used to detect differences.

Hypothesis

- Hypothesis: ED-hospital more family and collaborative-checks, less prognosis

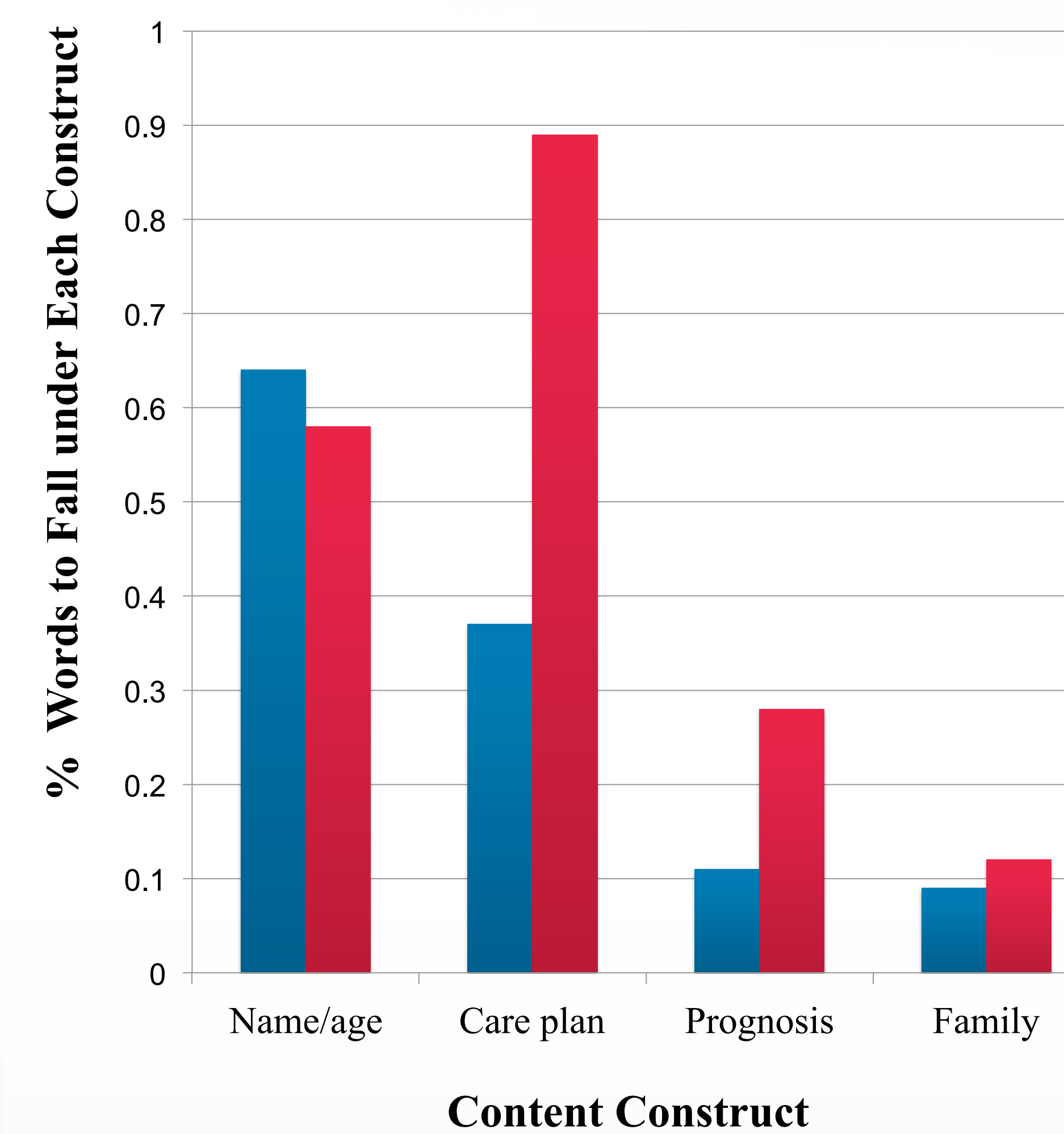
Construct Categories

Construct Type	Construct	Description
Content	Name/age	The name and/or age, was used before providing additional content. Includes words related to other patient descriptors and the room location. <i>Examples:</i> Mr., Mrs., fifty-eight year old.
	Care Plan	Description of planned activities to provide care. Includes descriptions of medical procedures and changes to medication. <i>Examples:</i> next dose, plan, x-ray.
	Prognosis	Prognosis is the ultimate goal; whether the patient will live or die. <i>Examples:</i> will die, will live, circling the drain.
	Family	Discussion of the patient's family as sources of information or stakeholders in patient care. <i>Examples:</i> family, father, sister.
Strategy	Questioning	Any question asked by either physician. Identified by a raise in tone. Includes clarification questions, collaborative cross-checks, and queries to repeat information.
	Collaborative cross-check	Questions or statements that are made by the incoming practitioner with the intent to confirm accuracy of cognitive activities. <i>Examples:</i> suspicion, but you said, double-check.

Results

- The hypothesized difference for prognosis was detected.
- Unexpected findings: ED-hospital less care plan discussion.

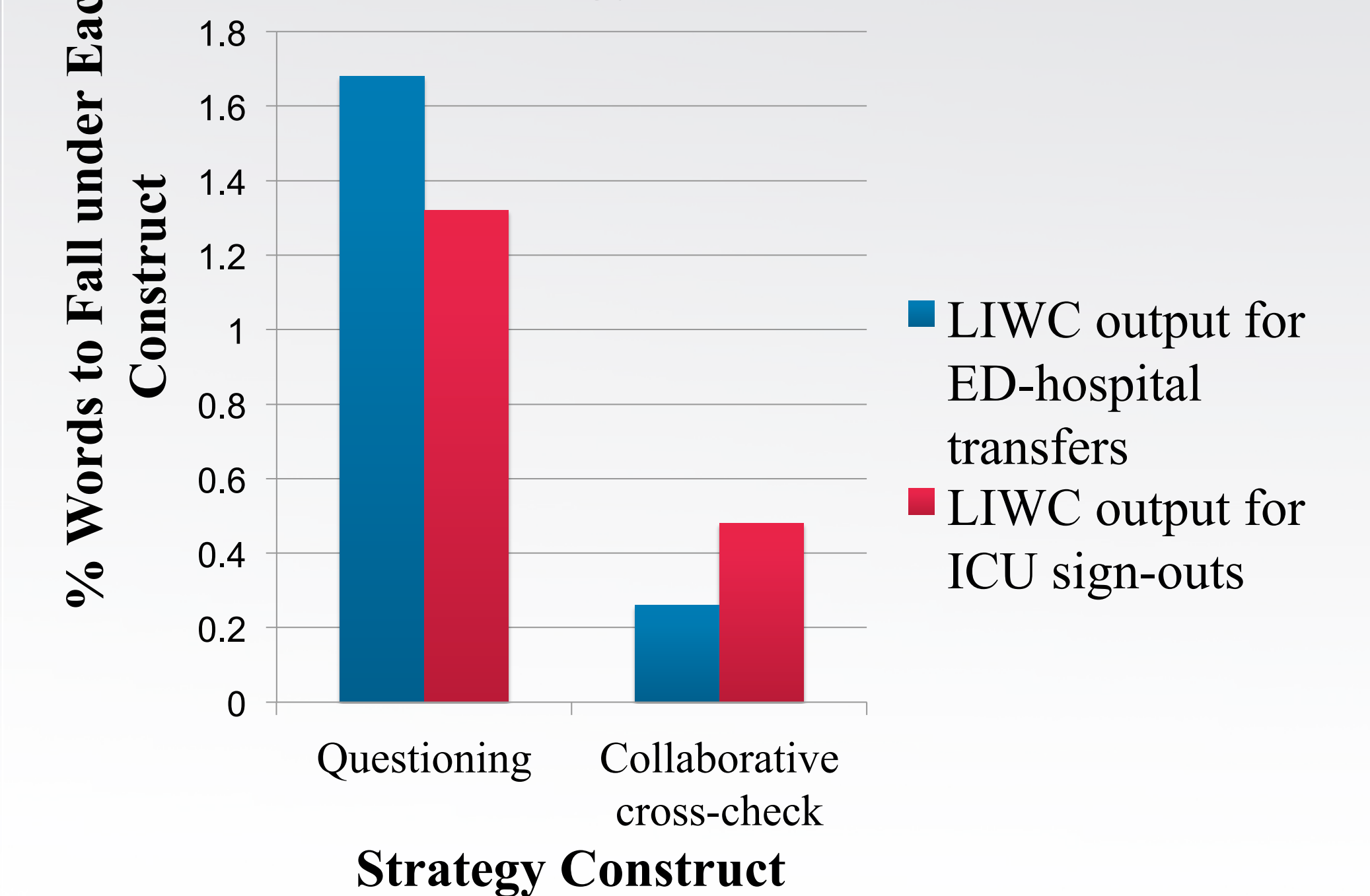
Comparison of LIWC Output for Content Constructs



■ LIWC output for ED - Hospital Transfers Average
■ LIWC output for ICU Sign-outs Average

Construct	p value
Name/age	0.6
Care plan	<0.001
Prognosis	0.006
Family	0.52
Questioning	0.024
Collaborative Cross-check	0.15

Comparison of LIWC Output for Strategy Constructs



Discussion

- The findings of this study demonstrate that there are automatically detectable differences in content and strategy between different types of handovers.
- By making these differences in content and strategy explicit, standardized, and monitored during training, handover communications can improve, thus ultimately improving patient care and patient safety.

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