

Ethnographic Contextual Research

Assessing User Experience with Crutch Use - Case Study

This case study was conducted to assess the current design and usability of crutches under the principles of human centered design. User trajectories of mobility-related assistive technology devices were examined and criteria for re-design identified.

Outline of Study

Literature Analysis
Mobility-related assistive technology user experience

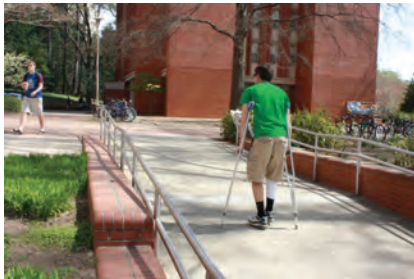
In-Depth Ethnographic Interviews
Two participants observed with recorded documentation

Survey Questionnaire
Online survey, n=50, age 18-65

Analyze Findings

Design Opportunities

Observations



Two participants were shadowed and interviewed concerning their user experience with crutch use and its affect on routine task completion. Of major importance to this study were the following observations:

Routine task work-arounds
Increased time to complete tasks
Increased limitations and repetitions

Findings

An in-depth analysis of scholarly articles and data from the online survey resulted in identifying three thematic categories related to crutch use:



1. Current Design & Usability Overview
2. Patterns of Use
3. User Experience

Many participants reported routine activities of daily living being interrupted by use of the standard under-arm crutch. **28%** of these participants also reported spending more than **75%** of their day standing or walking. **44%** of participants reported discontinuance of crutch use earlier than prescribed at medical discharge.

Activities Impeded by Use of Crutches	
Use of Stairs	86%
Carrying Objects on Back	22%
Carrying Objects on Shoulder	58%
Carrying Objects in Hand	96%
Preparing Meals	40%
Transportation	56%
Hygiene	30%
Housework	66%
Transferral	34%

Design Recommendation

Synthesizing findings from literature analysis, in depth interviews and the online survey questionnaire identified two themes of design criteria.

- Allowing hands to be more readily available.
- Adjustable to body movements. Increased ease of bending, turning, reaching.

****Published in the conference proceedings for the 55th Annual Meeting for the Human Factors & Ergonomics Society**