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## Do You See What I See? Using Ethnographic Methods to Inform Functional Design

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*Key Words: functional design, human centered design, user needs*

**Introduction & Aim:** Functional apparel design prioritizes consumer needs to formulate solutions that enhance human performance (Watkins & Dunne, 2015). Researchers have continually refined how to design for users since Orlando (1979) first identified the need to systematically structure the design process by examining peoples' constructed, natural and behavioral environments. While this sounds simple on a conceptual level, assessing these environments is typically "wild" (Strickfaden, 2013) with embedded "wicked problems" (Buchanan, 1992) because of the heterogeneity of people. Continued development of design research frameworks (e.g., Rosenblad-Wallin, 1985; Lamb & Kallal, 1992) emphasize a need to interact with end users through observation and interviews as a way to define the research problem. Yet, implementation of methodological approaches that uncover the complexity of human experience and the nuanced relationships among person-apparel-environment to address functional apparel design problems remain tricky to maneuver through (Strickfaden, 2013). This paper begins by defining ethnographic field observation and answers critical implementation considerations through description of a case study that highlights how and why this methodology is well suited to examine the intricacies of the clothing context and its meaning to people.

**Ethnographic Methods:** Ethnography is defined as the study of "an intact cultural group in a natural setting over a prolonged period of time by collecting, primarily observational and interview data" (Creswell, 2009, 13). While traditional ethnography may conjure up images of research in distant places, it may also be applied to focus on "real moments that involve real people doing real things" (Agar, 2010, 294). Observation of people and apparel within a use-scenario is best documented with field notes, a standardized observation form, audio recordings of on-site interviews and photography (Emerson, Fretz, & Shaw, 2011). Bernard (2006) advocates field observation as a key method because it allows the development of a judicious line of questioning and "an intuitive understanding of what's going on in a culture..." (355) while building trust, respect (Creswell, 2009), gaining insights, and building empathy.

Observations also allow designers to determine who the real stakeholders are and to *see and learn* what is really going on in ways that interviews alone or Likert scale surveys cannot reveal.

**Design Case:** To illustrate the value and application of this methodology, situations from a case study on the assessment of clothing needs during in-hospital rehabilitation therapy are described and discussed. This case used: 1) field observation of patient interactions with personal support workers, occupational and physiotherapists; 2) interviews with patients, personal support workers and therapists. This ethnographic method is essential to understanding ability and clothing environment, to determining clothing modifications and dressing methodologies, and to distinguish how clothing and independence in dressing enhance self-image.

**Results:** Ethnographic methods were used to examine the clothing context and its meaning to people through field observation of rehab therapy sessions and patient routines with personal support workers (n=46), as well as interviews with occupational and physiotherapists, personal

support workers, and patients (n=34). By watching people, it became evident that in addition to required clothing and footwear attributes there were other activities and artifacts specific to the rehab setting that had not been apparent before the study; these included patients' physical capabilities, their use of mobility devices, dressing tools, and toileting equipment, as well as the hospital's built environment. Results reveal patients' experience related to clothing, disability, and functioning as well as the psychological aspects of clothing. Findings include recommendations to mediate difficulties people have when dressing, undressing, toileting, layering and more. Designers might well consider the following factors when designing clothing that promotes dressing independence: fabric choices that reduce friction; wider garment silhouette and circumference of sleeve wrists, pant legs, and necklines; use of magnetic fasteners; dual waistbands; inclusion of different types of pockets; the addition of loops for a variety of clothing items and shoes; and the placement of visual cues as a guide to garment orientation. These design features warrant integration into clothing styles in order to improve patient comfort when wearing clothing and, more importantly, to improve their abilities to dress independently. Results also highlighted problem garments—namely socks and shoes, trousers, underwear, and brassieres—which identify opportunities for product development.

**Discussion & Conclusion:** Previous studies in functional apparel design have focused on the analysis of required design attributes and how well an apparel product works in a specific situation. Looking in more depth, specifically at the person/garment interfaces within the rehabilitation context revealed ways to inform design. This research is important to creative practice because it highlights an in-depth and more holistic method to assess users within their use scenario that aids towards higher levels of innovation when engaging in clothing design. Results of the study and using these kinds of methods have the potential to inform and impact fashion designers, specialized product developers, and design educators.

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