



Understanding Apparel Students' Perceptions of Clothing for People with Disabilities

Jin Su, University of North Carolina at Greensboro, USA
Xiao Tong, University of Alabama, USA
Melanie Carrico, University of North Carolina at Greensboro, USA
Brian Taylor, University of Alabama, USA

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Introduction and Purpose. According to the US Centers for Disease Control and Prevention (CDC) (2022), up to 1 in 4 adults in the US have some type of disability. In the USA, the prevalence of disability tends to rise considerably with age from 5.6% among individuals aged 5–17 years to 10.3% for individuals aged 18-64, to 33.5% for individuals aged 65 years or older (Paul et al., 2020). Disability affects people of all ages, races, ethnicities, and socioeconomic backgrounds. It is estimated that people with disabilities (PWD) contribute \$21 billion of disposable income to the marketplace (McBee-Black, 2021; McBee-Black & Ha-Brookshire, 2022). Coresight Research stated that the underserved adaptive apparel market could potentially reach \$349.9 billion globally by 2023 (Taylor, 2022). However, despite the significance of the population and its contribution to the marketplace, the apparel needs and wants of PWD have been largely overlooked and excluded by the apparel industry (McBee-Black, 2021). Thus, the purpose of this study is to understand university apparel majors' knowledge and awareness of adaptive clothing and the clothing needs for PWD.

Literature Review. With Tommy Hilfiger launching an adaptive clothing line for children in 2016 and in 2018 for adults, awareness of adaptive design for PWD has been gradually increasing (Webb, 2021). Some industry designers call for increased awareness of the needs of individuals with a physical disability and making appropriate considerations for adaptive design in their design process. It is essential to have more companies use an inclusive approach to design for PWD.

Clothing is an important aspect in our lives that helps us fulfill psychological, social, and cultural roles and conveys individual, occupational, and personal style differentiations (Miller-Spillman & Reilly, 2019). The clothing industry is currently largely composed of ready-to-wear garment manufacturers and brand retailers that cater principally to mass consumers and fit "most" of the population. However, individuals with a physical disability find it difficult to find clothing that facilitates optimal participation in regular life activities. A review of current literature reported challenges associated with dressing among PWD with the focus of improving performance and independence. From the PWD perspective, they feel the apparel industry does not understand the significant apparel needs facing PWD, and the PWD's market viability (McBee-Black & Ha-Brookshire, 2022). Moreover, from the industry side, with the growing emphasis on inclusive approach to design, the apparel industry needs further education and

training for their current and future employees to deal with the complex real-world problems related to adaptive clothing design (McBee-Black & Ha-Brookshire, 2022).

Method. An online survey was conducted in two public universities in the Southeastern region of the US. It was reported that the percentage of people with disabilities (PWD) is highest in the South of the USA (CDC, 2022). Upon the IRB approval, the online survey was sent to undergraduate students enrolled in the apparel-related programs in the two universities. Due to the lack of previous research on this topic, the survey questions were designed to explore the current status of apparel students' awareness and knowledge of clothing for PWD. The survey includes both open-ended questions and 5-point Likert scale questions. Examples of open-ended questions include “*What does the term “Adaptive Apparel” mean to you?*”, “*What barriers to clothing come to mind when you think of people with disabilities (PWD)*”, and “*What can fashion designers and retailers do to advocate for producing adaptive apparel for PWD?*” The 5-point Likert scale questions measure students' awareness of the clothing needs of PWD and their knowledge about adaptive apparel.

Results and Discussion.

106 responses were received, and 90 valid responses were used for data analysis after data screening. 84% of the respondents were female and 14% were male. 69% were 18-20 years old and 31% were 21-24. 58% were Apparel Design majors and 42% were Apparel Retailing / Merchandising majors. The descriptive analysis

| | Mean | Std. Dev. |
|---|------|-----------|
| <i>Awareness of PWD's Clothing Needs (1-Strongly Disagree; 5-Strongly Agree)</i> | | |
| PWD use clothing to express themselves | 4.23 | 0.90 |
| PWD need different clothing from nondisabled people | 3.90 | 0.98 |
| PWD prefer to wear adaptive apparel / clothes with special functional features | 3.73 | 0.95 |
| PWD should have different clothing from nondisabled people | 3.31 | 1.26 |
| PWD prefer to dress in casual clothing for comfort | 3.03 | 0.97 |
| PWD can shop for clothing in the same places I shop for clothing | 3.02 | 1.38 |
| PWD are able to find clothing that meets all their dressing needs | 2.11 | 1.16 |
| <i>Knowledge about Adaptive Apparel (1-Low; 5-High)</i> | | |
| Knowledge about the challenges that PWD may have regarding clothing | 2.48 | 1.20 |
| Knowledge about the apparel needs that PWD may have | 2.24 | 1.22 |
| Knowledge about the adaptive apparel market | 1.98 | 1.04 |
| Knowledge about the adaptive apparel design for PWD | 1.87 | 1.04 |
| Knowledge about the brands/merchants that sell adaptive apparel | 1.69 | 0.99 |
| <i>Interest in creating clothes that meet PWD's needs or developing a clothing business/brand for PWD (1-Strongly Disagree; 5-Strongly Agree)</i> | | |
| | 3.67 | 0.92 |

results (see the Table) show that students' awareness of PWD's clothing needs is at a medium level. However, students' knowledge about adaptive design and adaptive apparel market and brands is at a low level (*Means* range 1.69-2.48), indicating that the significant efforts are needed to improve students' knowledge about adaptive apparel.

For the open-ended questions, the research team read through the students' responses carefully and used a thematic analysis, an iterative and hermeneutic approach to identify the evolving themes and interpret the qualitative data (Braun & Clarke, 2006). Regarding the meaning of “adaptive apparel”, respondents' understanding of adaptive apparel could be categorized into four themes – *clothing designed for PWD*, *clothing for everyone*, *clothing fit for an individual's changing lifestyle*, and *clothing adapted to different environments and situations*. Some students were not sure about the term, as one respondent stated, “I'm not sure, I haven't

heard the term before, but if I had to guess/make an inference, I would say that it means apparel that can adapt to an individual's lifestyle.” Another student explained, “I am not very familiar with this term. From the context clues I am guessing that Adaptive Apparel is the idea that a piece of clothing can be used for any size range, circumstance, gender, identity, and so forth.” In terms of barriers to clothing for PWD, four themes emerged – *the ease of access, comfort (including sizing, materials, et.), the style/design, and feeling “normal” in a sense*. However, students recognized the complexity of adaptive design. Some participants were aware of adaptive apparel and PWD’s clothing needs because they have a disabled family member or friend. Regarding how to advocate for producing adaptive apparel for PWD, five themes emerged from students’ responses, including *being open-minded, doing research on adaptive apparel, talking with PWD and having PWD help design products, collaboration between fashion designers and retailers, and raising awareness by social media, fashion shows and advertising*. One student explained, “Collaborating with those that have PWD helps designers fully become aware of how to design their clothing and in which manner is more comfortable for them.”

Conclusions. The results of the study reveal the current status of apparel students’ awareness and knowledge of adaptive apparel. For apparel students, there is still a lack of knowledge and awareness of the importance of clothing in the lives of PWD and of their specific needs in terms of clothing design. Thus, apparel design and merchandising programs need to cultivate the adaptive apparel competencies necessary for our students to have a competitive edge in their respective fields.

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