

Jan 1st, 12:00 AM

Commercialization of Adaptive Clothing: Toward a Movement of Inclusive Design

Kelsey Kosinski
University of Delaware

Belinda Orzada
University of Delaware, orzada@udel.edu

Hye-Shin Kim
University of Delaware

Follow this and additional works at: https://lib.dr.iastate.edu/itaa_proceedings

 Part of the [Disability Studies Commons](#), [Fashion Design Commons](#), and the [Fiber, Textile, and Weaving Arts Commons](#)

Kosinski, Kelsey; Orzada, Belinda; and Kim, Hye-Shin, "Commercialization of Adaptive Clothing: Toward a Movement of Inclusive Design" (2018). *International Textile and Apparel Association (ITAA) Annual Conference Proceedings*. 107.
https://lib.dr.iastate.edu/itaa_proceedings/2018/presentations/107

This Oral is brought to you for free and open access by the Conferences and Symposia at Iowa State University Digital Repository. It has been accepted for inclusion in International Textile and Apparel Association (ITAA) Annual Conference Proceedings by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.



Commercialization of Adaptive Clothing: Toward a Movement of Inclusive Design

Kelsey Kosinski, Belinda Orzada, and Hye-Shin Kim, University of Delaware, USA

Keywords: Adaptive Clothing, Apparel Design

Introduction

The United States is currently experiencing a social movement, promoting both inclusion and diversity. More women of color can be seen on runways during fashion weeks, along with an increase in both age and ability diversity. Television series' have full casts of varying racial backgrounds. In addition, an entire series was created starring Micah Fowler, an actor with cerebral palsy. American culture is ready for change, ready to be truly representative of the population, and the fashion industry needs to catch up.

An analysis of the evolution of adaptive clothing was conducted through a review of relevant literature published from 1963 to 2017. Several phases were identified. Initially, ready-to-wear clothing was manipulated to adapt to the needs of people with disabilities. Then, researchers began to study the various needs of the disabled to design clothing to fit those specific needs of a small population. More recently, research identifying the commercial barriers experienced when trying to mass-produce adaptive clothing has been published. This move towards commercialization of adaptive clothing is currently evident in the fashion industry with adaptive clothing lines offered by retailers including Target and Tommy Hilfiger. However, evidence shows that this movement does not end with commercial lines. The goal should be to create ready-to-wear clothing with adaptive features, thus helping individuals with disabilities to address their functional, expressive and aesthetic needs, while also eliminating the stigma of adaptive clothing.

Relevant Information

Evidence of this inclusive movement includes the Disability and Assistive Technology Summit held at the White House in 2016, during which speakers discussed the use of universal design to "make products with people with disabilities for everyone" (McFarland, 2016, para. 10). This process of co-design and universal design is rooted in the design thinking movement, a creative problem solving process that utilizes empathy and human-centered design to find solutions (Brown, 2008). The spirit of inclusion and design thinking used during the production of inclusive technology is also reflective in apparel design. The Fashion and Physique symposium hosted by FIT in 2018 is further evidence of the momentum to bring adaptive clothing design to the next level. Guest speakers highlighted and discussed the diversity gaps within the current retail industry and addressed possible solutions.

Currently, various clothing brands and retailers provide adaptive clothing lines. Brands like Kozie Clothes, NBZ apparel, Target and Tommy Hilfiger all provide articles of clothing developed for people with specific disabilities. The availability of different adaptive clothing sources is more evidence to the growing acknowledgement for appropriate clothing for people with disabilities.

An analysis of written literature on adaptive clothing shows the evolving trend towards commercialization of fashionable and functional clothing. Much research has been conducted on developing functional clothing for user-specific and use-specific situations. In the past, the design process for functional clothing focused on adapting already-made clothing and paper patterns to fit the needs of a specific person. Booklets were written for healthcare professionals for the use of informing families or for home sewers (Wagman, 1977). Literature existed on designing for disabilities, but was rare (Wagman, 1981). Practices continued to change and began focusing on original designs for small groups of people (e.g., Rosenblad-Wallin, 1985; Stokes & Black, 2012) rather than just one person (e.g., Menec, 1989). Then researchers began addressing manufacturing needs and costs to create a custom garment for small groups (e.g., Carroll & Gross, 2010; Carroll & Kincade, 2009; Thoren, 1996). Furthermore, current research is heavily focused on producing garments for larger population accessibility and greater user coverage (e.g., Hall & Lobo, 2017; Morris, Park & Sarkar, 2017; Newell, Gregor, Morgan, Pullin, & Macaulay, 2010).

Argument

Issues arise when designing clothing specifically for people with disabilities. Researchers (Lamb, 2001; Wingate, Kaiser, & Freeman, 1985-86) identified a stigma towards adaptive clothing originating from people with disabilities. Wingate et al. (1985-86) distinguished a negative reaction by people with disabilities towards adaptive clothing, making the garment less likely to be worn because it was labeled 'functional.' The salience cues of a disability should be minimal. Thus, designing adaptive clothing that can be identified as such can be detrimental to a person's self-esteem and confidence level (Lamb, 2001). While there is evidence to suggest increased attention to inclusive design within the apparel industry, there is also frustration with the currently available clothing as is evident from personal conversations with disabled individuals and their families through the first authors' work in a physical therapy laboratory.

Proposal

In order to reduce the stigma of adaptive clothing, while also enhancing the quality of life for people with disabilities, a change in the fashion industry must happen. Although the industry has made some developments towards designing for this segment of the population, most apparel designers have not been trained to design for alternative markets such as plus-sizes or the disabled. Future designers need to be prepared for a market that encompasses all body types, not just the "normal" body shape. Thus, we propose to create an adaptive clothing design guide for apparel design instructors, students, designers and manufacturers to reference when designing new garments. This guide will include suggestions for adaptive features on clothing to help facilitate inclusive product results, assisting designers to create fashionable and functional clothing for all. It is essential for upcoming generations of designers to push inclusivity past being a moment and transform it into a movement, facilitating a revolution within the fashion industry. Only then, can diversity ever become the new "normal" for designers' collections.



References

- Brown, T. (2008, June) Design Thinking. *Harvard Business Review*, 86(6), 84-92.
- Carroll, K. & Gross, K. (2010). An examination of clothing issues and physical limitations in the product development process. *Family and Consumer Sciences Research Journal*, 39(1), 2-17. DOI: 10.1111/j.1552-3934.2010.02041.x
- Carroll, K. E. & Kincade, D. H. (2009) Inclusive design in apparel product development for working women with physical disabilities. *Family and Consumer Sciences Research Journal*, 35(4), 289-315. DOI: 10.1177/1077727X07299675
- Hall, M. L. & Lobo, M. A. (2017). Design and development of the first exoskeletal garment to enhance arm mobility for children with movement impairments. *Assistive Technology*, DOI: 10.1080/10400435.2017.1320690
- Lamb, J. M. (2001). Disability and the social importance of appearance. *Clothing and Textiles Research Journal*, 19(3), 134 – 143. DOI: 10.1177/0887302X0101900304
- McFarland, F. (2016, December 20). White House Disability and Inclusive Technology Summit, *American Association of People with Disabilities*. Retrieved from <https://www.aapd.com/white-house-disability-inclusive-technology-summit/>
- Menec, J. M. (1989). A team approach to special needs garment design. *Canadian Home Economics Journal*, 39(1), 3-5.
- Morris, K., Park, J. & Sarkar, A. (2017). Development of a nursing sports bra for physically active breastfeeding women through user-centered design. *Clothing and Textiles Research Journal*, 1-17. DOI: 10.1177/0887302X17722858
- Newell, A. F., Gregor, P., Morgan, M., Pullin, G., & Macaulay, C. (2010). User-sensitive inclusive design. *Univ Access Inf Soc* 10, 235-243. DOI 10.1007/s10209-010-0203-y
- Rosenblad-Wallin, E. (1985). User-oriented product development applied to functional clothing design. *Applied Ergonomics*, 16(4), 279-287. DOI: 10.1016/0003-6870(85)90092-4
- Stokes, B. & Black, C. (2012). Application of the functional, expressive and aesthetic consumer needs model: assessing the clothing needs of adolescent girls with disabilities. *International Journal of Fashion Design, Technology and Education*, 5(3), 179-186. DOI: 10.1080/17543266.2012.700735
- Thoren, M. (1996). Systems approach to clothing for disabled users. Why is it difficult for disabled users to find suitable clothing. *Applied Ergonomics*, 27(6), 389-396. DOI: 10.1016/S0003-6870(96)00029-4
- Wagman, J. (1977, September). [Review of the book *Clothing for the handicapped: Fashion adaptations for adults and children*, by M. T. Bowar]. *Canadian Journal of Occupational Therapy*, 44(3),147.
- Wagman, J. (1981, April). [Review of the book *Clothing designs for the handicapped*, by A. Kernalleguen]. *Canadian Journal of Occupational Therapy*, 48(2), 92.
- Wingate, S. B., Kaiser, S. B., & Freeman, C. M. (1985-1986). Salience of disability cures in functional clothing: A multidimensional approach. *Clothing and Textiles Research Journal*, 4(2), 37 – 47. DOI: 10.11.77/0887302X8600400206