

Clothing-Related Issues of People with Disabilities

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Abstract: One of the key antecedents that are so important to a consumer when buying ready-to-wear apparels is fit especially for persons with disability. Clothing fit can therefore be defined as the ability of garments to have the right size and shape and should include specific features. The Indian apparel sector, which does not have standard dimensions specific to persons with disabilities, tailors the garment to an ideal body profile. The other aspect of the clients suffering from physical disabilities lacks support from the society in order to enable them to feel like other people, make decisions and be on their own. Even though the impaired share the same level of intellect as anyone else, their confidence, esteem and social inclusion can be boosted by the articulate concept of apparel as everyone equal in society. An attempt at analyzing the problem of disability rehabilitation with a view to the socially oriented approach demonstrates the inefficiency of the offered concepts as to the problem of clothing for disabled people. They have, however, become more important today in serving the emerging need for adaptive clothing. However, personal needs for such individually tailored garments are increasing in accordance with the population of disabled people; nonetheless, there is no specialized market for such clothes or a clear path to address these limitations associated with wearing normal clothes.

Keyword: Adaptive Clothing, Apparel Fit, Physical Disability, Ready to wear, Quality of Life

Introduction

Fitting concerns for garments in India are one of the most difficult requirements for the ready-to-wear sector, as they are directly tied to body comfort and customer happiness. Size and fit issues are common among people with disabilities; due to the small number of disabled populations, apparel retailers only use standard sizing systems, making it difficult for people with disabilities to select their perfect size and fit, resulting in customer dissatisfaction (Alexander et al. 2005).

Finding suitable garments that require alterations to allow for social involvement and independence is tough in today's market (Change et al., 2013). Unresolved dressing issues can increase obstacles for the disabled population by preventing them from leaving the house for work, resulting in a decrease in social life.

This segment of the population faced numerous challenges when dressing due to physical limitations. By making dressing easier for people with disabilities, adaptive clothing can make a significant and noticeable difference in their quality of life. Additionally, adaptive clothing is the only cure used for enhancing or minimizing body deformity. (Azher et al, 2012).

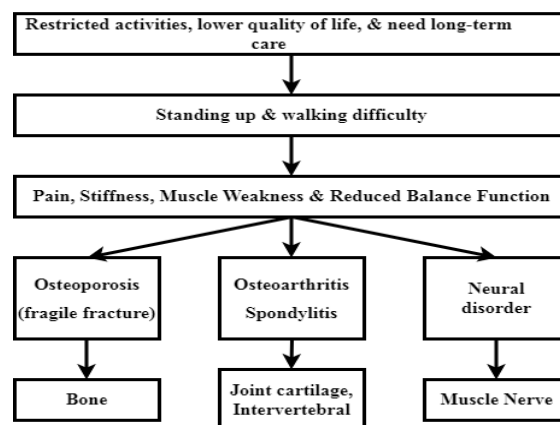


Figure 1: A concept of locomotive syndrome

Apparel producers must understand and consider their consumers' fitting preferences, fitting concerns, and differences in body form and size. Fit refers to how a garment's shape adapts to the body curves and how good it looks on the human body (Kasambala et al. 2014).

If a manufacturer can improve their standard sizes in terms of providing an accurate fit for people with disabilities, they will be able to increase product sales and customer satisfaction because, according to the 2011 census, the number of disabled people has reached 26.8 million; they account for nearly 2.21% of the total population, with 54,36,826 people being locomotor disabled. They are not only dealing with problems related to their infirmities, but also with the lack of acceptable apparel in the market.

Wei-Min Chang (2013) stated the needs/requirements of adaptive clothing that must be fulfilled:

1. Donning and doffing of garments conveniently and independently.
2. The garment should help the person to hide the deformities but should not make any identity different from others.
3. It should provide psychological and physical stability and comfort.
4. It should be pocket friendly and easy to maintain.

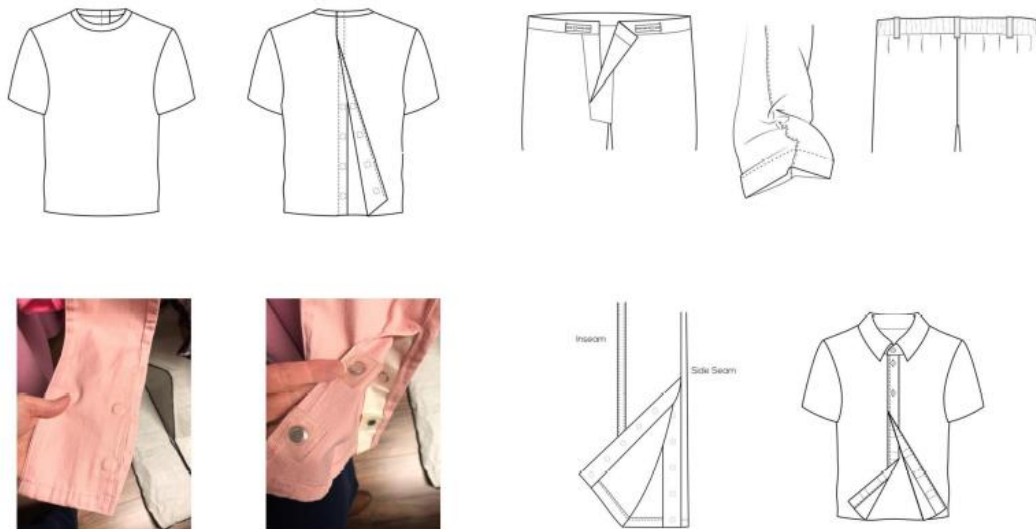
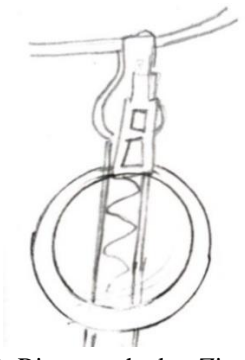
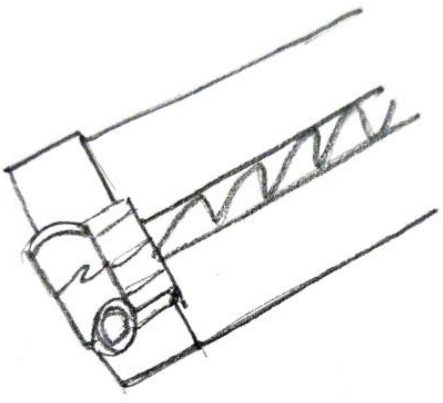
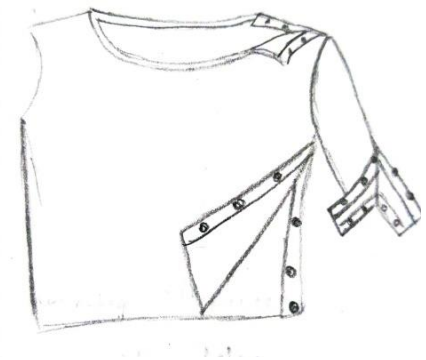
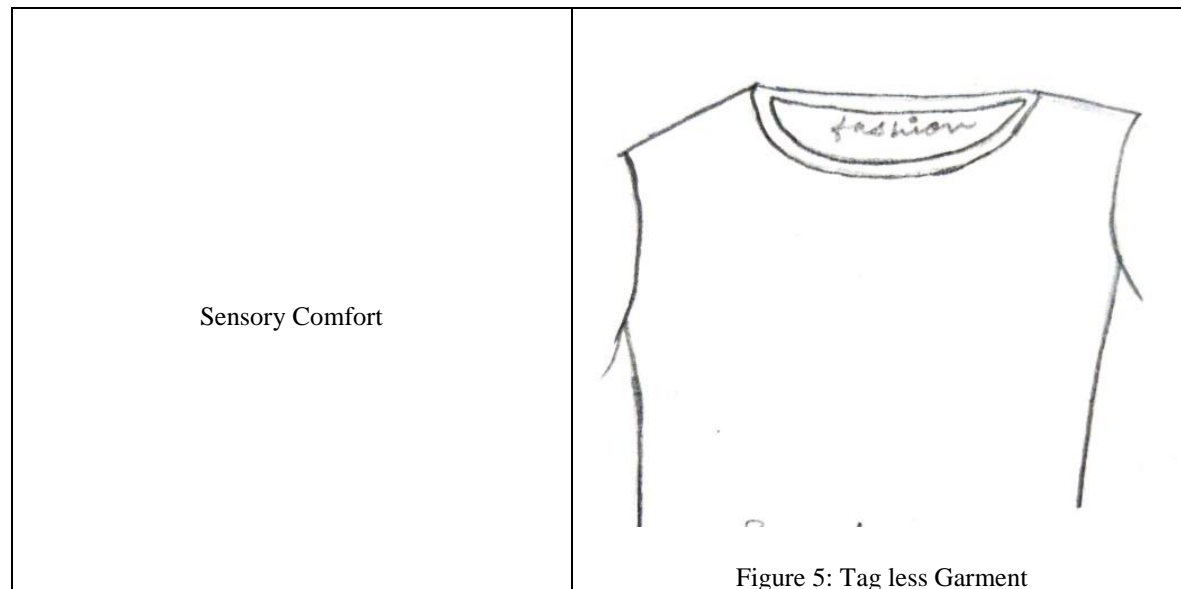


Figure 2: Mindy Scheier's adaptive design innovations. Source: Mindy Scheier

When purchasing ready-to-wear attire, disabled consumers' first concern is fit. They want to buy a costume that has a perfect fit, is easy to don and doff, and appears attractive. Garments silhouette and style are key factors to consider when purchasing a garment since customers do not want to stand out from the crowd, but the most significant factor that influences consumer purchasing decisions is the fit of the garment (Fiber2fashion.com 2006).

Table 1: Disabilities' Impact on Dressing and Clothing Needs

Dressing Challenges	Design Considerations
Low Grip Strength	 <p>Figure 2: Ring attached to Zipper Slider</p>
Simple to Use	 <p>Figure 3: Magnetic Zipper</p>
Extra Wide Opening	 <p>Figure 4: Open Sides/Shoulder/Sleeves</p>



Methods

A comprehensive evaluation looks at national and worldwide literature the topic of study is to determine the main factors Fitting concerns for individuals with disabilities in connection to the availability of adaptive clothing in the market, databases from Scopus, Google Scholar, Research Gate, Springer, fiber2fashion.com, Emerald Insight, and ScienceDirect, Google Book, Approx. more than 50 related research papers and articles studies were identified, reviewed and included in this study.

Sources

The primary databases used in this study are ScienceDirect, Google Book Research Gate, Scopus, and Google Scholar. The study also takes into account key works published in a number of authorized publications, including SAGE, the International Journal of Consumer Studies, the Clothing and Textiles Research Journal, and the International Journal of Fashion Design, Technology, and Education.

Search Strategy: Keywords and Adaptive Clothing. Headings were used. 'fitting issues', 'fit issue', 'fitting problem', 'apparel fit', or 'garment fitting' Clothing for the physically challenged, 'adapted clothing market OR "adaptive clothing OR' special wear apparel' Adaptive clothing brand or "clothing brand for disabled people"

Outcome

The different elements influencing disabled people's attire are the result of this review's interest.

Literature Review

Table 2: Issues of Disabled People Related to Clothing	
Clothing Selection	- Difficulty selecting appropriate clothing due to lack of choices and awareness (Marianne et al., 2021).
Self-Esteem	- Clothing as a symbol of status and its impact on self-esteem and self-confidence (Nisbett, 1992).

Fit Issues	- Lack of clothing options for disabled population despite a large number of disabled individuals (Nisbett, 1992).
Adaptive Clothing	- Issues with fit in ready-to-wear clothing and lack of availability and affordability in adaptive clothing (Nisbett, 1992).
Functional Features	- Importance of well-fitting and comfortable clothing with functional features for disabled individuals (May Chae, 2020).
Accessibility	- Difficulty in finding suitable clothing for physical strength and shape in ordinary retailers (May Chae, 2020).
Clothing Expression	- Clothing as a means of expressing personal style and a basic need for disabled individuals (F. Axisa et al., 2003).
Adaptability	- Use of adaptive clothing to assist populations with physical limitations (A. Lymberis et al., 2008).
Education Gap	- Gap in education regarding adaptive clothing, identified through interviews with market participants and caregivers (A. Lymberis et al., 2008).
Functional Limitations	- Limited design and market options for functional clothing (Hall et al., 2017).
Shopping Habits	- Difficulty in finding suitable clothing due to fitting and restroom space issues in shopping locations (Marianne et al., 2021) .
Unfastening/Fastening	- Hemiplegic individuals rely on others for unfastening/fastening, pant fly, zipper, and string tying/untying (Marianne et al., 2021).
Fashionable Garments	- Difficulty finding fashionable garments that suit disability (Marianne et al., 2021).
Access to Stores	- Store issues including unusable access to roots, height of racks, unsuitable parking, insufficient space in fitting rooms, and lack of help (Marianne et al., 2021).
Medical Garments	- Development of medical garments for disabled and aged individuals (Marianne et al., 2021).
Perception of Disabled People	
Feeling different/unique	- Disabled individuals often feel different or unique in social gatherings (Stacy B. et al., 1986).
Clothing perception survey	- Half of physically disabled respondents prefer line drawings of garments, while the other half prefers illustrations highlighting functional features. - Most respondents are dissatisfied if functional garment features are too salient (Stacy B. et al., 1986).
Social cognitive Framework	- Disabled individuals should have input regarding clothing challenges they face. - Suggestions for clothing adaptations should be incorporated (Carla M et al., 1986).

Perceived risk and information-seeking behavior	- Disabled individuals have unique needs and perceptions of risk related to clothing. - Physical risk is perceived as the highest, while social risk is perceived as the lowest (Paula B et al., 1988).
Impacts of clothing on mental competency	- Trendy clothing can negatively impact the mental competency of disabled individuals, particularly girls (Nisbett, 1992).
Self-image and clothing value	- Girls with scoliosis rate lower on the self-concept scale, influenced by their functional constraints (Fitzwater et al., 1993).
Personal significance of clothes for wheelchair users	Wheelchair users are most concerned about their physical appearance and value features like styling and color (Murali, 2001).
Body image and clothing choices	- Body image influences clothing choices and public appearance. - Educators play a role in addressing body image and appearance issues (Rudd, 2001).
Self-perception and independence	- Physically challenged women compare themselves to able-bodied women and seek input from others. - They accept their physical limitations but feel society creates a negative image of them (Klerk et al., 2003).
Dissatisfaction with existing wardrobe	- Wheelchair users are not satisfied with the functionality of existing wardrobe, particularly regarding fit and fasteners (Rubal et al., 2009).
Clothing as a tool for identity and expression	- Clothing becomes challenging for injured individuals to manage, affecting their social participation. - Spinal injured persons' needs are not met with current apparel (Howe, 2010).
Meaning of clothing for disabled people	- Clothing is essential for self-expression, social identity, and self-efficiency. - Innovative designs are needed for social participation (Chang et al., 2013).
Functional garments for daily activities	- Functional garments can aid in reducing the time required for dressing, bathing, and toileting for physically disabled individuals (Wang et al., 2014).
Design considerations for disabled individuals	- Clothing for disabled individuals should be easy to wear, hide disabilities, and easy to care for. - It should promote self-dependence and confidence (Chukwuka et al., 2018).

In this study, the researcher conducted a comparative analysis of the body forms of people with disabilities, donning and doffing challenges, and fit problems.

According to the study, the body shape and proportion of disabled individuals differ from typical clothing owing to physical alterations such as prolonged sitting, low grip strength, weak bones, and dietary modifications. These modifications have an impact on garment donning and doffing, as well as apparel fit. Worldwide, apparel businesses manufacture apparel based on conventional sizes, however people's body dimensions range from standard sizes, resulting in fitting concerns and unhappiness with ready-to-wear apparel. (Bukisile P et al., 2014).

Eggleston et.al [1994] Persons with mobility issues or wheelchair users is frequently treated at burn centers. Smart & fashionable clothes have been designed for wheelchair users. The clothes which are easy to handle, faster to wear with special quick and handling fasteners, easy accessible openings, customer curved lower jackets slacks and conveniently placed pocket, custom made dresses and skirts are preferred by wheelchair users. Such attractive clothes give a sense of belongings. Under

this research, 17 garments were designed for wheelchair users and given for testing for mass production including short suit and jackets with longer back, longer back trouser, and long jacket to hide attached devices. All the 17 design garments were highly preferred by the uses but did not sale they were no market for such adaptive clothing.

Kidd [2006] in the age of adolescence clothing becomes a way to know self-worth as wearing fashionable clothes signifies one belonging. Teens with disabilities also want to be a part of the fashionable world as well as need such clothes which helps them with functionality, however, many offer functional clothes not fashionable and as for teens it is necessary to have both components in one, therefore this study aims to design of cloths with both the important aspect for teens with disability [spina bifida] by draping directly on the body with disability and suggested that these fitting techniques can be used for the mass population.

Gupta [2011] argued that the textiles and apparel sector is developing in tandem with the rise in demand for functional clothes. The functional clothing designs begin and conclude with an individual's need or unique needs, which are focused on comfort, performance, and user-friendliness. The study divided user requirements into four categories: biochemical, psychological, agronomic, and physiological, with a discussion of the relationship between user unique requirements and clothing qualities. The agronomic of the design process was spelled out, including raw material selection, pattern making, size, fit, assembly, and garment finishing. Because of the influence of technological improvement with the developing industry, mostly in India and China, who are also the greatest consumers, Due to the influence of technological advancements and the growing industry, particularly in India and China, which are the largest consumers as well as producers of these high-tech products, designers, engineers, agronomists, and psychologists must collaborate to fine-tune the material, sizing, composition and assembling issue related to functional clothing design.

Qilong Feng [2022] The author's study came to the conclusion that for everyone who needed adaptive clothing, having advanced clothing in terms of design, technology, service, and application was more important than having to worry about money. Additionally, the study found that consumer purchase intentions were significantly influenced by environmental factors, and the demand for adaptive clothing was correlated with other aspects of industry (product, complexity industrial practice, and business operations). This study was carried out in Ho Chi Minh City. A novel connection model that takes into account the consumer history, demand, and purchasing intention as well as components of the fashion industry was built with the aid of a survey to examine the interaction between consumer and industry related variables.

Helena M. de Klerk et. al [2002] physically challenged women, it was discovered, have a lot of difficulties picking clothing that is both functional and fashionable. A total of 40 disabled females ranging in age from 21 to 60 years old, as well as forty clothing stores, were observed, and it was concluded that the major problem faced by the females in finding fashionable garments that suit their disability, as well as store issues, was unusable access to roots, the height of racks, unsuitable parking, insufficient space in the fitting room, and a lack of help or assistance. All of the women's problems were compared to the observation, and the estimates were confirmed to be accurate.

N. Pruthi et. al [2003] Due to their physical limitations, hemiplegic men had a lot of trouble dressing and undressing their upper and lower garments. They were always reliant on others for unfastening/fastening, pant fly, zipper, and string tying/untying. The removal and slipping of upper garments of the arm and head, placing of the lower garment at the waist, trying/untying of strings, and removing and slipping of lower garments were all big issues for hemiplegia females. For self-reliance and higher acceptance, it was decided that all of the functional aspects should be incorporated into their costume.

R. Mataraarachchi et. al [2018] in investigated that clothing is a symbol of status and it also promotes self-esteem and self-confidence if selected properly as per the need and requirement of the wearer especially in case of women with disabilities it was found that there are a huge number of barrier faced by the disabled women while selecting clothes as regular garment hinders in their routine activities, so it is recommended to work on adaptive clothing to resolve the same.

Allison Kabel et. al. [2017] People with impairments and disabilities frequently have difficulty selecting appropriate clothing owing to a lack of choices and knowledge. People with these impairments and disabilities often have difficulty selecting appropriate clothing due to a lack of choices and awareness. An online poll of 113 people found that the clothing demands of physically impaired/disabled persons aren't being satisfied, which is impacting their social involvement and relationships. The garment business can aid these people with their clothing-related concerns.

Reich et.al [1991] Studied that the relationship between 6 categorizing common physical limitation groups regarding the difficulties experienced with different clothing styles and the need for special clothing. The groups were categorized under lower and upper torso, lower leg, hands, neck and arm. The data was collected with the help of questionnaire and it was concluded that disabled people with disability have problems in wearing ready to wear clothes and they often face problem while shopping due to the physical appearance. To overcome the issue it is suggested to redesign the clothes with adjustable fitting easy opening yet fashionable.

Stacy B. et. al. [1986] in a mostly social gathering, disabled people always feel different/ unique, according to research. A questionnaire survey was organized and filled out by 322 respondents [physically disabled] from various universities across the country to learn about their perceptions about physical disabilities. It was found that half of the respondents were satisfied with only line drawings of the garment, while the other half voted for the illustration method to highlight the additional functional feature of the garment, and the majority of the respondents were dissatisfied if the features of the functional garment kept salient.

Carla M. et. al [1986]. A person with physical limitations' social cognitive framework was investigated. A focus group of 36 disabled people [college students] was formed to determine the clothing style, which included both general and functional clothing, in terms of perceived image and functionality. It was decided that: a) some adaptations to conventional clothing should be made; b) disabled people should express their ideas and suggestions regarding the clothing challenges they are facing, and c) suggested features should be incorporated into clothing.

Nevala et. al. [2003] Dressing and undressing is a daily action that necessitates the assistance of others for some physically challenged and elderly people. Helpers find it challenging to perform the same for patients, as seen by their hand and back movement, blood pressure, and pulse rate during dressing and undressing. A set of functional or adaptive clothing was designed to reduce the strain and physical workload of the helpers, and it was found that the redesigned garments were able to reduce the strain and physical load of the helpers by reducing the leg and hand movement motion while performing their job, as well as lowering muscular activity.

Carroll et. al [2007] studied that people with physical disabilities also want garments and retail environment that help them to choose an inclusive design, this study was aimed at clothing designs for work women with disabilities, to overcome this problem, a prototype of the inclusive garment was designed and concluded that working women have the same needs of clothing and further recommended it was a successful strategy for product development.

Pruthi et. al. [2008] Clothing is crucial in everyone's life, but it is even more important for physically disabled persons to live with their physical hurdles and limits. To assist them, the functional garment was developed, produced, and handed to respondents for three trials to determine acceptability and suitability. It was discovered that hemiplegic men and caretakers of hemiplegic men and women favored designer garments. Hemiplegic women, on the other hand, had a moderate level of tolerance due to their family duties of children.

Results and Interpretation

Systematic review of literature provides insight on various major factors that affecting adaptive clothing.

Market Scenario & Need

A systematic evaluation of the research provides insight into the several primary aspects that influence adaptive clothing.

The analyzed research highlight the crucial need for adapted clothing solutions suited to people with physical limitations. The data highlight numerous facets of prejudice, daily challenges, and the potential market for such specific clothing.

Table 3: Market Scenario & Need for Adaptive Clothing

Discrimination in Recruiting	- Physically impaired individuals face discrimination in the recruiting process, but appropriately dressed disabled applicants were rated higher than able-bodied ones. (Christman, 1990)
Clothing Issues for Arthritis & Mobility	- People with arthritis or mobility issues face challenges in dressing due to unsuitable design and lack of comfort. (Reich, 1991)
Smart & Fashionable Clothes for Wheelchair Users	- Smart and fashionable clothes have been designed for wheelchair users, offering both style and functionality. (Eggleston et al., 1994)
Clothing for Teens with Disabilities	- Teens with disabilities want fashionable clothes that also provide functionality, highlighting the importance of both aspects in clothing design. (Kidd, 2006)
Functional Garments for Improved Quality of Life	- Functional garments improve the quality of life for people with disabilities by increasing self-dependency and confidence. (Pruthi et al., 2008)
Need for Easy-to-Wear Clothing	- Clothing for disabled individuals should be easy to put on and take off, providing security and comfort. (Chang et al., 2009)
Designing Adaptive Clothing	- Collaboration among designers, engineers, agronomists, and psychologists is necessary to design functional clothing. (Gupta, 2011)
Lack of Market for Adaptive Clothing	- Despite the need for adaptive clothing, there is a lack of market and commercial viability for such garments. (Kosinski et al., 2018)
Addressing Social & Design Barriers	- Social and design barriers need to be addressed to meet the needs of individuals with disabilities for adaptive clothing. (Kosinski et al., 2019)
Improving Quality of Life	- Special clothing is needed to improve the quality of life and mobility for people with disabilities. (Ikenyei et al., 2020)
Specific Clothing Needs for Elderly	- Elderly disabled people have specific clothing needs that must be met to improve their quality of life. (Yeung et al., 2020)
Tommy Hilfiger's Adaptive Apparel Line	- Tommy Hilfiger's collaboration with an apparel advocate led to the introduction of an adaptive apparel line for children. (Black, 2021)

The complete overview of studies on adaptive clothing for people with physical disabilities reveals the widespread discrimination that occurs during recruiting processes, as well as the considerable impact that clothing has on perception. The challenges experienced by persons with arthritis or mobility impairments, as well as the necessity for elegant and fashionable

wheelchair clothes, highlight the importance of specialized design changes. Adolescents with impairments indicate a desire for functional and attractive attire. Despite encouraging feedback on creative designs, the market for adapted apparel is still restricted. The findings emphasize the critical need for mass production and standardization of adaptive clothes to improve the quality of life, independence, and social inclusion of people with disabilities. Collaboration among designers, engineers, and psychiatrists is critical, and efforts should be focused on eliminating stigma and boosting government funding to satisfy the growing need for inclusive clothes.

Clothing Related Barriers

The synthesis of several studies concentrating on clothing-related barriers for people with physical disabilities reveals a continuous pattern of difficulties in selecting appropriate and functional apparel. Limited design alternatives, unsuitable purchasing settings, and a lack of awareness about functional clothing distributors all contribute to the issues that disabled people experience. Female respondents, in particular, face architectural hurdles in stores. The difficulties that physically challenged women face in finding both functional and beautiful apparel underline the need for more accessible designs and better shopping experiences. Hemiplegic people, particularly men, encounter difficulties dressing and undressing due to physical restrictions, underlining the importance of including functional elements into clothing designs. Additional studies emphasize the lack of options, awareness, and contentment among physically disabled individuals, which affects their social participation. Recommendations include creating adaptable clothing to meet individual needs, boost self-esteem, and promote independence. The studies highlight the need for the fashion industry to promote inclusive design and satisfy the unmet requirements of people with disabilities by providing comfortable, well-fitting, and trendy clothing options.

Table 4: Issues of Disabled People Related to Clothing

Clothing Selection	- Difficulty selecting appropriate clothing due to lack of choices and awareness (Marianne et al., 2021).
Self-Esteem	- Clothing as a symbol of status and its impact on self-esteem and self-confidence (Nisbett, 1992).
Fit Issues	- Lack of clothing options for disabled population despite a large number of disabled individuals (Nisbett, 1992).
Adaptive Clothing	- Issues with fit in ready-to-wear clothing and lack of availability and affordability in adaptive clothing (Nisbett, 1992).
Functional Features	- Importance of well-fitting and comfortable clothing with functional features for disabled individuals (May Chae, 2020).
Accessibility	- Difficulty in finding suitable clothing for physical strength and shape in ordinary retailers (May Chae, 2020).
Clothing Expression	- Clothing as a means of expressing personal style and a basic need for disabled individuals (F. Axisa et al., 2003).
Adaptability	- Use of adaptive clothing to assist populations with physical limitations (A. Lymberis et al., 2008).
Education Gap	- Gap in education regarding adaptive clothing, identified through interviews with market participants and caregivers (A. Lymberis et al., 2008).

Functional Limitations	- Limited design and market options for functional clothing (Hall et al., 2017).
Shopping Habits	- Difficulty in finding suitable clothing due to fitting and restroom space issues in shopping locations (Marianne et al., 2021) .
Unfastening/Fastening	- Hemiplegic individuals rely on others for unfastening/fastening, pant fly, zipper, and string tying/untying (Marianne et al., 2021).
Fashionable Garments	- Difficulty finding fashionable garments that suit disability (Marianne et al., 2021).
Access to Stores	- Store issues including unusable access to roots, height of racks, unsuitable parking, insufficient space in fitting rooms, and lack of help (Marianne et al., 2021).
Medical Garments	- Development of medical garments for disabled and aged individuals (Marianne et al., 2021).

Perception for Functional/ Adaptive Clothing

Clothing's impact on body image and self-perception is investigated, revealing psychological and physical impacts on females with scoliosis and exhibiting the interplay between functional restrictions and self-perception. Focus group interviews with wheelchair users highlight the importance of appearance, fashion, and comfort in clothing preferences, with casual attire being the most preferred. Wheelchair users are dissatisfied with traditional wardrobes due to fitting concerns, demanding novel solutions for adaptable clothes. Overall, the studies highlight the necessity of understanding handicapped people's specific clothing needs, incorporating their feedback into design processes, and creating adaptive clothing that boosts self-esteem, independence, and overall well-being. The impact of clothing on body image and self-perception is investigated, revealing psychological and physical impacts on females with scoliosis and exhibiting the interplay between functional restrictions and self-perception. Focus group interviews with wheelchair users highlight the importance of appearance, fashion, and comfort in clothing preferences, with casual dress reigning supreme. Wheelchair users report unhappiness with existing wardrobes due to fitting concerns, highlighting the need for creative adaptable clothing designs. Overall, the studies emphasize the necessity of understanding handicapped people's specific clothing needs, incorporating their feedback into design processes, and creating adaptive clothing that boosts self-esteem, independence, and overall well-being.

Table 5: Perception of Disabled People

Feeling different/unique	- Disabled individuals often feel different or unique in social gatherings (Stacy B. et al., 1986).
Clothing perception survey	- Half of physically disabled respondents prefer line drawings of garments, while the other half prefers illustrations highlighting functional features. - Most respondents are dissatisfied if functional garment features are too salient (Stacy B. et al., 1986).
Social cognitive Framework	- Disabled individuals should have input regarding clothing challenges they face. - Suggestions for clothing adaptations should be incorporated (Carla M et al., 1986).

Perceived risk and information-seeking behavior	- Disabled individuals have unique needs and perceptions of risk related to clothing. - Physical risk is perceived as the highest, while social risk is perceived as the lowest (Paula B et al., 1988).
Impacts of clothing on mental competency	- Trendy clothing can negatively impact the mental competency of disabled individuals, particularly girls (Nisbett, 1992).
Self-image and clothing value	- Girls with scoliosis rate lower on the self-concept scale, influenced by their functional constraints (Fitzwater et al., 1993).
Personal significance of clothes for wheelchair users	Wheelchair users are most concerned about their physical appearance and value features like styling and color (Murali, 2001).
Body image and clothing choices	- Body image influences clothing choices and public appearance. - Educators play a role in addressing body image and appearance issues (Rudd, 2001).
Self-perception and independence	- Physically challenged women compare themselves to able-bodied women and seek input from others. - They accept their physical limitations but feel society creates a negative image of them (Klerk et al., 2003).
Dissatisfaction with existing wardrobe	- Wheelchair users are not satisfied with the functionality of existing wardrobe, particularly regarding fit and fasteners (Rubal et al., 2009).
Clothing as a tool for identity and expression	- Clothing becomes challenging for injured individuals to manage, affecting their social participation. - Spinal injured persons' needs are not met with current apparel (Howe, 2010).
Meaning of clothing for disabled people	- Clothing is essential for self-expression, social identity, and self-efficiency. - Innovative designs are needed for social participation (Chang et al., 2013).
Functional garments for daily activities	- Functional garments can aid in reducing the time required for dressing, bathing, and toileting for physically disabled individuals (Wang et al., 2014).
Design considerations for disabled individuals	- Clothing for disabled individuals should be easy to wear, hide disabilities, and easy to care for. - It should promote self-dependence and confidence (Chukwuka et al., 2018).

Design Adaptations

The compilation of several studies on adaptive clothing for disabled people provides light on the diverse issues faced by different parts of this group, as well as the inventive solutions presented to meet their specific demands. Here's an overview of the main conclusions from the studies you supplied.

Table 6: Adaptive Clothing - Design Adaptations	
Adaptive Clothing	- Designing clothing to meet the needs of physically disabled or elderly people, considering ease of dressing, comfort, and functionality (Sara Mosleh et al., 2021).
User-Centered Design	- Designing clothing with input from users to ensure it meets their needs and preferences (Carla M et al., 1986).
Functional Clothing	- Developing functional or adaptive clothing to reduce the strain on caregivers and improve the independence of individuals with disabilities (Marianne et al., 2021).
Comfort	- Ensuring clothing provides comfort for patients, especially in hospital settings (Wang et al., 2014).
Mobility	- Designing clothing that allows for easy movement and independence for individuals with physical limitations (Hall et al., 2017).
Ease of Donning/Doffing	- Creating clothing with features that make it easier for individuals with disabilities to dress and undress (May Chae, 2020).
Psychological Impact	- Recognizing the psychological impact of clothing on individuals with disabilities and designing garments to enhance self-esteem and confidence (Klerk et al., 2003).
Protective Clothing	- Designing clothing that protects individuals with disabilities from environmental factors and promotes safety (Cichocka et al., 2021).
Aesthetic Value	- Considering the aesthetic appeal of clothing for individuals with disabilities to enhance their sense of style and self-expression (Nisbett, 1992).

The studies on adaptable clothing for people with disabilities, which range from Reich et al.'s early research in 1991 to more recent work in 2023, illustrate a dynamic environment of obstacles and inventive solutions. Researchers have addressed a wide range of concerns, including the difficulties that disabled people have when wearing ready-to-wear clothing, dressing and undressing challenges for caregivers and patients, and special requirements for hospital and business apparel. The studies underline the value of user-centered design, participative methodologies, and modern technology in improving the comfort, functionality, and aesthetics of adaptable clothing. From addressing visually impaired girls' apparel choices to suggesting inflatable features for wheelchair users, these studies demonstrate a thorough awareness of the diverse needs of various disability segments. The primary purpose remains the same: to improve the quality of life, self-reliance, and confidence of people with disabilities through careful and inclusive clothing design practices.

Conclusion

The enormous amount of research on adaptable clothing for people with disabilities, spanning decades and varied views, emphasizes the crucial relevance of addressing this community's specific demands and challenges. From early studies in the 1980's to current efforts in 2024, research has continually highlighted the challenges that people with disabilities face in their daily encounters with clothing, whether because to physical limits, social views, or psychological well-being. The findings call for inclusive design methods, user-centered approaches, and creative solutions to improve the comfort, functionality, and aesthetics of adaptable clothing. Notably, the study acknowledges that adaptive clothing has multiple dimensions, taking into account elements such as dressing independence, social identity, and psychological well-being. The proposed solutions, which

range from altered clothes to technologically advanced protective apparel, demonstrate a desire to improve the entire quality of life for those with impairments. Moving forward, the findings highlight the continued need for collaboration among academics, designers, and people with disabilities to ensure that adaptive clothing is more than just a necessity, but also a way to empower, include, and celebrate the various perspectives of this community.

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