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ADAPTIVE FASHION - A TOOL FOR SOCIAL INCLUSION

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The article explores the evolution of adaptive fashion, tracing its roots to today's technological advancements. Overall, adaptive fashion represents a convergence of style, functionality, and accessibility, promising a brighter future for inclusive fashion. This paper examines the necessity for adaptive clothing and its evolution leading to contemporary solutions catering to individuals with disabilities. The main aim is to understand the synergy of new technologies such as 3D modeling and the field of adaptive clothes and its needs.

Key words: adaptive fashion, inclusive fashion, accessibility, functionality, technology, innovation.

INTRODUCTION

Adaptive fashion has a history full of resilience, innovation, and progress, evolving from the functional necessities of the early 20th century to today's cutting-edge technology. While disabled people have always existed, it wasn't until the mid-20th century, as a result of the World War II, that the mainstream began recognizing the need for clothing designed with accessibility in mind. This led to the emergence of specialized adaptive brands in the 1980s, marking a shift towards inclusive fashion. The term "adaptive fashion" itself gained prominence, encapsulating a movement that prioritizes functionality and accessibility. Fast forward to the 21st century, where technology intersects with fashion, introducing different types of innovations like: magnetic closures and 3D-printed accessories, enhancing both functionality and aesthetic appeal [3, 4].



Fig. 1. Examples of adaptive clothing in books and journals [4]



Today, adaptive fashion serves not only as a means of practical dressing but also as a tool for advocacy and representation, led by brands like IZ Adaptive, Tommy Adaptive, Buck & Buck, Able2 Wear and Zappos Adaptive, that have an agenda to honour the small but rich history of adaptive garments, seamlessly blending style and functionality to create clothing that celebrates individuality and inclusivity, ensuring that fashion is accessible to all, regardless of ability.

PURPOSE

The purpose of researching this theme is to be able to understand and to provide comfortable and functional clothing solutions for people with disabilities who cannot use regular clothes due to physical limitations or medical conditions.

The ultimate goal is to promote independence and confidence for people with disabilities, allowing them to express themselves freely and actively participate in social life and various activities.

RESULTS AND DISCUSSION

Adaptive clothing main purpose is be tailored to meet the diverse needs of individuals with disabilities, encompassing congenital, acquired, age-related, and temporary disabilities. It factors in variables like age, disability type, independence level, mobility, and the need for dressing assistance. Individuals facing challenges like handling zippers, buttons, or certain fabrics find relief in adaptive clothing, which integrates adjustable closures, elastic fabrics, and specialized patterns. Moreover, it emphasizes breathability and natural fibres to prevent skin irritation. Its development involves continuous research, drawing from multiple disciplines to address the intricate needs of disabled individuals, aiming for both aesthetics and functionality. Designing involves problem identification, ideation, refinement, prototyping, and rigorous evaluation, ensuring a harmonious blend of user needs, clothing design, and environmental considerations, ultimately delivering comfort, functionality and style [1, 2].

Tabel 1

List of disabilities that require adaptive clothing solution

Disability	Associated problem	Adaptive clothing solution
Contractures, arthritis, MS, MDS, SCI, MD, paraplegia, quadriplegia	Inability to bend muscles or move joints	Open back clothing which allows the clothing to be put on frontwards, eliminating the need to bend or rotate muscles or joints
Alzheimer's disease	Individual disrobes at inappropriate time	Locking clothing
Oedema	Swelling of feet and legs leads to difficulty wearing conventional footwear or pants	Adaptive shoes and pants adjustable in size, offering non-restrictive closures. Compression socks and clothing can improve blood flow and reduce oedema



Incontinence	Reduced bladder control and urgency	Clothing that can be removed easily and quickly and can accommodate incontinence aids discreetly and comfortably
Parkinson's disease and arthritis	Loss of fine motor skills and dexterity	Buttons and zippers are replaced with easy touch Velcro or magnetic closures
Digestive Disorders & Bowel Disease	Medical devices are common, including G/GJ feeding-tubes, colostomy, and ileostomy	Clothing that provides access to the abdomen via snaps, zippers, or strategic layering and draping. Depending on the individual, looser clothing may be preferred to conceal abdominal devices, or comfortably tight, supportive clothing may be preferred to keep devices in place (e.g. high-waisted leggings, supportive waistbands)
Scoliosis	Curved Spine	Back bodice to help hold spine straighter

As mention above, in the present, the main goal of the adaptive clothing is to ensure maximum ergonomomy of clothes thru functionality and comfort, and also integrate the design aspect of garments. This can be more easily done by using digital technologies in the development of adaptive clothing. Integrating digital technologies into adaptive clothing development can create personalized garments that address these challenges and the specific needs of users mentioned above in **Table 1** [5], by offering comfort and independence. However, more research and development activities are needed in this field to maximize the potential of digital technologies in adaptive clothing production. Whether it's incorporating smart fabrics that adapt to the wearer's body temperature or integrating sensors for better mobility assistance, digital technologies hold immense potential in enhancing the quality of adaptive clothing.



Fig. 2. Examples of 3D simulated adaptive clothes [2,3]



CONCLUSIONS

In conclusion, the journey of adaptive fashion, from its origins during World War II to today's high-tech solutions, reflects a significant move towards inclusivity and accessibility in the fashion world. Leading brands like IZ Adaptive and Tommy Adaptive have played pivotal roles, not only ensuring stylish clothing but also practicality for people with diverse abilities. This paper emphasizes the importance of comfortable and practical clothing tailored to the specific needs of individuals with disabilities, aiming to promote independence and self-expression. By incorporating digital innovations into the creation of adaptive clothing, there's potential for further improving the lives of this demographic through personalized options. This ongoing progress signals a transformative change in apparel design towards a more fair and empowering future.

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АДАПТИВНА МОДА - ІНСТРУМЕНТ СОЦІАЛЬНОЇ ІНКЛЮЗІЇ

У статті досліджується еволюція адаптивної моди, простежуючи її коріння в сучасних технологічних досягненнях. Загалом, адаптивна мода являє собою конвергенцію стилю, функціональності та доступності, що обіцяє широкі перспективи інклюзивній моді. У цій статті розглядається потреба в адаптивному одязі та його еволюція, що призвела до сучасних рішень, орієнтованих на людей з інвалідністю. Основна мета – зрозуміти синергію нових технологій, таких як 3D-моделювання, зі сферою адаптивного одягу та її потребами.

Ключові слова: адаптивна мода, інклюзивна мода, доступність, функціональність, технології, інновації.