

NORTHERN ILLINOIS UNIVERSITY

**Apparel Designed for the Convenience and Ease of Handicapped
and Disabled Consumers**

A Thesis Submitted to the

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In Partial Fulfillment of the

Requirements of the Baccalaureate Degree

With Upper Division Honors

Department Of

**Family, Consumer & Nutrition Sciences emphasis on Textiles,
Apparel & Merchandising**

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Capstone Approval Page

Capstone Title:

Apparel Designed for the Convenience and Ease of Handicapped
and Disabled Consumers

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HONORS THESIS ABSTRACT

Guidelines

Your abstract should begin with a definitive statement of the problem of project. Its purpose, scope and limit should be clearly delineated. Then, as concisely as possible, describe research methods and design, major findings, including the significance of the work, if appropriate, and conclusions.

Students whose thesis involves "creative" work (original, fine art, music, writing, theatre or film production, dance, etc.) should describe process and production. Indicating the forms of documentation on file as "thesis" materials.

Please have your advisor review your abstract for organization, content, grammar and spelling before submission.

HONORS THESIS ABSTRACT THESIS SUBMISSION FORM

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ABSTRACT (100-200 WORDS):

The problem I am addressing with this capstone is the lack of fashionable, adaptive clothing. My purpose with this capstone is to introduce adaptive apparel for people who are disabled to be able to dress themselves, or to make it easier for people to help them dress, that is also trendy. My research started with seeing what kinds of adaptive clothing, if any, was already out there (secondary

research). Then I took my own disability experiences and interviewed my friend about her brother's disability for primary research. Then I took what I learned from my research and created a small apparel line consisting of a winter and summer outfit for women with brittle bone diseases and a formal outfit, everyday outfit, and sport outfit for people with Adrenoleukodystrophy. I found that clothing made from a cotton/spandex/polyester blend is most appropriate for clothing, and drawstrings and hidden zipper or snaps are the best way to make the clothes adaptable but look like everyday outfits. There already is adaptive apparel out there, but with my adaptations and update fashion wise, the clothes can be trendier and help people gain more independence.

Disclosure: Names have been omitted for confidentiality. Also, when the term "brittle bone disease" is used, it is referring to all kinds of bone diseases like osteoporosis and osteogenesis imperfecta.

Imagine your typical morning, you wake up, eat, shower, and get dressed. You put a little thought into your outfit and then have no problems dressing yourself. You don't have to think about dressing because it is easy; so easy that you basically do it on autopilot. However, for many Americans who are handicapped or disabled, dressing can be quite a feat. Even the little things, like zippers, buttons, and clasps can cause problems for some people and can make dressing a difficult activity. But dressing doesn't have to be difficult, the Americans with Disabilities Act was supposed to make life easier, and they have done a great job so far, however, there is one thing that still needs to be

addressed, clothing. People who are disabled have a hard time dressing themselves, especially when they have to put clothing on over casts, braces, and other equipment. This can all be changed by having adaptive clothing for those who need it. The clothing will look just like regular clothing, but will have hidden differences and conveniences that will make dressing, for anyone with a disability, a simple task.

I know the difficulties of dressing first-hand. When I was six I was diagnosed with a brittle bone disease. I was in braces and casts, and pants did not easily fit over these contraptions, so my aunt was creative and cut up pairs of knit pants. She cut them along the sides and sewed Velcro, making putting pants on really easy. Not only was I able to be clothed, but it also covered up my brace and helped me look and feel more “normal.” It is small changes like these that can make the world of difference to people with disabilities and how they get dressed.

It was my struggles with clothing when I was younger that prompted this interest in adaptive clothing. Another reason why this topic interests me is because I have a family friend whose brother has Adrenoleukodystrophy. He doesn't have any self-help skills so his sister and mother dress him every day. This task was easier when he was little, but now that he is eighteen years old and taller, it makes dressing him pretty difficult. This is what inspired me to create this line.

The first step in the process was to see if there already was any type of adaptive clothing out there. Adaptive clothing refers to clothing that has hidden

snaps, zippers, and closures to make dressing easier for people with disabilities. To my surprise there were quite a few online websites with adaptive clothing; the most known and most detailed website of them all was Silverts. The websites break the clothing into sections depending on the type of disability. They have clothing for people with Alzheimer's, arthritis, diabetes, foot problems, incontinence, Parkinson's, stroke, spinal cord injury, and senior citizens. They also have clothing that is temperature controlled or sensory controlled. The clothing is made from polyester/spandex blend, cotton flannel, or acrylic knit. Most of the websites have the same type of clothing. The websites seem to think that if you have a disability you are a senior citizen. The clothes are very out of date fashion wise and when it comes to people in wheelchairs, the clothing is more like a poncho that just drapes over them. What if that person has to stand up? The clothing should not resemble a hospital gown; the backside should be covered for the person's modesty. The most advanced apparel I saw for people who are disabled or handicapped is a few pieces of lingerie. The websites for these types of apparel were introduced about eighty years ago, and the clothing still reflects the age in which it was first made. I think the apparel on the adaptive websites was a good first step, but that there should have been major improvements over the eighty years. A lot of people nowadays who are disabled or handicapped are younger, and would like to be fashionable just like their peers.

After doing the secondary research it was time to switch to primary research and interview my friend whose brother has Adrenoleukodystrophy.

Adrenoleukodystrophy is a disorder that disrupts the breakdown of very-long-chain fatty acids. The disorder appeared in mid-childhood and the major symptoms are decreased fine motor control, seizures, swallowing difficulties, and nervous system deterioration. People with this disorder usually live for ten years and then slip into a coma. However, my friend's family has been lucky and he is still going strong. He has to use a wheelchair and really cannot do anything himself. He is 18 now and is taller than both his sister and his mother, but has no control over his muscles. Since he is bigger now, dressing him has become more difficult. I asked his sister about dressing him and she explained that the most difficult part of dressing her brother is when the clothing is too tight or has zippers. She suggested that elastic or some sort of ties would be beneficial, where clothing can open up and then tighten so they do not fall off; loose is good. She said that there shouldn't be any buttons or zippers, but that Velcro would be okay. As for the material of the clothing she suggested fabrics that are soft and stretchy, no silk or super fancy materials. I then asked her if she was aware that there already was adaptive clothing out there. She had never heard of adaptive clothing before and expected these companies to be constantly doing research to target specific audiences, just like her family. She said she would be interested in the adaptive clothing if it helps dress her brother, but that the clothing needs to be more fashionable. She said that what is really needed are clothes that look fancy but are still comfy. For example, comfortable clothes that look like a suit for a wedding, or pants that look like jeans, but are softer. Since some of her suggestions already exist in regular apparel, like jeggings for example, there

should be no reason why this type of clothing isn't also available in an adaptive clothing form.

As mentioned before, adaptive apparel started off well, but still has a long way to come. The first piece of business that needs to be attended to is to get the word out there that adaptive clothing exists, especially so that those who need it know it is out there. The next order of business that needs to be addressed is to update the clothing to be more fashionable; just because it is harder for you to dress doesn't mean you should be limited to dress like a senior citizen. My first intention with this capstone was to address all kinds of disability clothing.

However, there are so many disabilities out there and each disability requires a different kind of adaptive clothing, so I decided to narrow my focus down to two diseases and make a small line of fashionable, adaptive clothing for those disabilities. I have decided to pick my disability, brittle bone disease, and my friend's disability, Adrenoleukodystrophy. The reason why I chose these two disabilities is because I am most familiar with these disabilities and that these two disabilities require different needs in adaptive clothing.

Before we get started with the actual clothing it is necessary to talk about body types of people with disabilities. For the most part people with disabilities might just be missing a limb, or just have a brace or cast on some part of their body, as is the case with people with brittle bone disease. In the case of more severe disabilities, like people with Adrenoleukodystrophy, the body type is a little different. Usually the growth is still there, people who are older are taller, but because the individual doesn't have control over their muscles and doesn't use

them very often, they are thinner and don't have the same muscle mass that people of that age would expect to have. For that reason the clothes, especially for men, don't need to be as broad in the shoulders and the cuts can be a little bit thinner; there is no need for plus size clothing. Now that we are aware of the body types we are working with, we can start the clothing line.

Attached with this paper are sketches of the apparel line I created. The black and white sketches show what the clothing looks like and the hidden adaptations. The colored sketches are of people actually wearing the clothing. I started off with adaptive apparel for people with brittle bone disease; individuals in braces or casts. I designed a winter and a summer outfit. The winter outfit consists of a sweater with a cowl neck and zippers up the sides of the arms. The zippers are of the invisible kind and the top of the zipper pull is hidden underneath the cowl neck so no one even knows it is there. The sweater is made out of polyester that allows for softness, durability, and is easily washed. Polyester also retains its shape so it will be warm in the winter. The zippers up through the collar allow for ease with people in arm casts or braces; they won't have to struggle to get into the sleeve or have one arm out of a sleeve, they just put the sweater over their head and then zip up the arms, the same is said for the pants. The pants have zippers up both sides to allow them to easily slide on and off the braces and casts without getting stuck or ripped. When I used pants like this there was Velcro, and that is another substitute, but I felt that invisible zippers were more durable and easier to hide. The pants are printed to keep up with today's fashions and it is made out of a cotton/polyester blend. The textile

blend allows for warmth, durability, softness, holds prints well, drapes well, and has good strength against the braces or casts.

Then I created a summer outfit that consists of a sheer tank top with a lace bandeau underneath, and a high-low hemmed skirt. The bandeau is made of a cotton spandex blend and has a front magnetic closure so you don't have to slip it over your head and arm casts or braces; you simply just have the magnets touch. The cotton spandex blend allows for good draping, strength, and comfort. The lace part of the bandeau is for a little flair and fashion. Over the bandeau is a sheer tank top, which has a zipper up the back. Right now some fashions have zippers be an accent in an unusual place, so the full zipper in the back being sewn is for fashion purposes, but again will make the tank top more like a vest and easier to put on over arm casts or braces. The tank top is made of 100% polyester. Again, this fabric will allow for durability, will maintain its shape, is strong, and washes easily. The last part of the summer outfit is the high-low hem skirt, which can be made two ways; it can have an invisible zipper up the side of the high hem or it can have two layers and be a wrap around skirt with a snap to close. The zipper or snap will help with people in leg casts or braces because you are not pulling anything over your legs; you just wrap it around and secure the closing. The skirt will also be made of 100% polyester, which is very versatile and is good for warmer weather.

Next I went into designing the clothes for people who have Adrenoleukodystrophy. Unlike adaptive clothing for people with brittle bone disease, zippers are more of a hassle than a help. When I interviewed my friend

about dressing her brother, she mentioned that Velcro would be okay, but no buttons, snaps or zippers. Instead, she suggested that looser fitting clothing with a drawstring tie would be easier. She also mentioned that as far as textiles go, something with a softer hand and that was stretchy works best. Before I started designing the clothes I decided to first pick out the textiles keeping my friend's suggestions in mind. After more research I found an amazing invention called pajama jeans that were just what we needed; they look like jeans but are made from the same material as pajamas. They are made from a cotton/ spandex blend which is soft and very stretchy. I decided that most of the clothing would be a cotton/ spandex blend, with polyester added for summer clothing.

The pajama jeans proved to be an inspiration. Just like for women's clothing we have jeggings which are softer and stretchier jeans. If people can make jeans out of pajama material, why not make other things out of the same material. My friend mentioned that formal clothing for weddings were in need so I made a suit top and dress pants out of the cotton/spandex blend. The pants have an elastic waist with an internal drawstring. The suit top is simply a pajama top that is printed with a suit and tie template; when worn it will look like you are wearing a dress shirt and tie under a suit jacket. Same thing goes for the pants. They feel like pajama pants but are printed to resemble dress pants with belt hoops and front fly closure.

Since people don't wear formal clothing every day, I decided to make an everyday outfit out of the cotton/spandex blend for people with Adrenoleukodystrophy as well. I made a pair of jeans just like the pajama jeans,

except it has an elastic waist and an internal drawstring just like the dress pants. They are printed with front fly closure, belt loops, and pockets with rivets. The top is a simple t-shirt that is just looser so it is easy to put on, since we are also trying to make the adaptive clothing more fashionable, I decided to make a basketball jersey and basketball shorts outfit combination. They can be made with any logo or sports team. The basketball outfit is made of a cotton/polyester/spandex blend so it is a little cooler in the summer and allows for better draping. The jersey is a simple tank top and the shorts are just like real basketball shorts with an elastic waist and internal drawstring.

While drawing the flats are nice representations to show you what the clothes look like and be able to better point out where the hidden conveniences are, they are not a good representation of what they would actually look like on people with those kinds of disabilities. For this reason I included two painted sketches of the clothes actually on someone with a disability. The first sketch is of a woman with brittle bone disease wearing the summer outfit I created. As you can see she is wearing a brace to help her leg heal and is using a walker to get around. With the outfit I created you can only see the bottom of the brace, and the outfit is very trendy right now. The vibrant colors and the lace bandeau are very current and can be seen in stores for spring. The second sketch is of my friend's brother who has Adrenoleukodystrophy. Since my friend mentioned that she would like to see formal looking clothes that are easy to get on, I decided to show what the formal outfit would look like on. As you can see, the clothes look just like a suit and dress pants even though the pants actually have a drawstring

and are made out of a cotton/spandex blend. Also the vibrant color of the outfit distracts from the fact that he is in a wheelchair.

After looking at the adaptive apparel currently out there, my research, and my small adaptive apparel line, you can see the differences in the clothing. My clothing is more updated and current with fashion trends, but keeps the convenience of the adaptive apparel already out there. My clothes get away from the hospital gown look and provide more modesty than the adaptive apparel currently out there. My apparel line also helps for people with disabilities to have a little more independence and be able to dress themselves, or helps make dressing someone with a disability easier. However, this is just a line for a few kinds of disabilities. By combining what is already out there in adaptive apparel with my updated version of clothing, a new line of adaptive apparel can be made for every disability. The new line will be updated and trendy and make people feel good about themselves and help people stray the focus from just their disability.

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Paper well written
& thought out

Research

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