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THE RELATIONSHIP OF ADAPTIVE CLOTHING ON THE SOCIAL  
PARTICIPATION AND SELF-ESTEEM OF ADOLESCENTS  
WITH DISABILITIES

by

Emalee Brown

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family and Consumer Sciences Education and Extension

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UTAH STATE UNIVERSITY  
Logan, Utah

2021

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## ABSTRACT

The Relationship of Adaptive Clothing on the Social Participation and  
Self-Esteem of Adolescents with Disabilities

by

Emalee Brown, Master of Science

Utah State University, 2021

Major Professor: Lacey Boschetto. Ph.D.  
Department: Applied Sciences, Technology and Education

Mobility disabilities affect lower and upper limbs, which can make it difficult to perform everyday tasks such as dressing. Many people with mobility disabilities require the use of assistive devices such as wheelchairs or braces. Mass-produced clothing is not designed to accommodate such devices or impairments of limbs. Changes in the design process are required to make clothing more efficient for people with disabilities (PWD).

Adaptive clothing is designed for people who have difficulties dressing due to impairments or limited mobility. One example of adaptive clothing include Velcro on the sides of pants to make it easier to fit over braces on legs. This modification allows PWD to wear clothing similar to their abled-bodied peers while still accommodating their disabilities.

Clothing plays such an essential role in how a person presents themselves to others and reflects how they feel about themselves. Additionally, clothing has a significant effect on social situations and how people feel when they are around others.

Most research available on adaptive clothing focuses on the adaptations needed in clothing and the impact of clothing on social participation for adults with disabilities. Little is known about adolescent's relationship with clothing, especially adaptive clothing, and how it affects them socially or emotionally.

This research was enacted to understand the relationship that adolescents with disabilities have with adaptive clothing, including awareness of and purchasing of adaptive clothing. The study also explored the relationship adaptive clothing has on the social participation and self-esteem of adolescents with disabilities. This study found that adolescents with disabilities have a more positive attitude toward adaptive clothing than mass-produced clothing. Participants in this study revealed that clothing has impacted their feelings about themselves when in social situations but has rarely caused them to miss opportunities to participate. Finally, the participants stated that appropriately fitted clothing leads to higher levels of happiness and self-esteem.

(91 pages)

## PUBLIC ABSTRACT

### The Relationship of Adaptive Clothing on the Social Participation and Self-Esteem of Adolescents with Disabilities

Emalee Brown

Adaptive clothing allows people with disabilities to dress in current fashion trends that accommodate their physical disabilities or impairments. Current research shows an increase in the production and availability of adaptive clothing. Additionally, the research on the consumers of adaptive clothing focuses on adults and their relationship with the clothing. More research was needed to understand the relationship that adolescents with disabilities had with clothing, and more specifically, adaptive clothing.

The researcher developed a survey using two previous studies to identify awareness and use of adaptive clothing by adolescents with disabilities. The study also evaluated the relationship between clothing and social participation for adolescents with disabilities, as well as clothing and self-esteem for the same population. The data analysis showed adolescents with disabilities are aware of adaptive clothing and have more positive feelings towards adaptive clothing than mass-produced clothing. Participants also stated that clothing impacts how they feel in social situations yet rarely impacts their participation. Lastly, appropriately-fitted clothing affects how the participants feel about themselves and helps increase their self-esteem.

This study adds to the literature regarding adolescents with disabilities, their relationship with mass-produced clothing to adaptive clothing, and how clothing affects

them socially and emotionally. This information is vital to the clothing and fashion industries, as well as the population of adolescents with disabilities.

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## CONTENTS

	Page
ABSTRACT.....	iii
PUBLIC ABSTRACT .....	v
ACKNOWLEDGMENTS .....	vii
LIST OF TABLES.....	x
LIST OF FIGURES .....	xi
CHAPTER I: INTRODUCTION.....	1
Problem Statement.....	4
Purpose Statement.....	5
Research Objectives.....	6
Assumptions.....	6
Limitations .....	7
Significance of the Study .....	7
Definition of Terms.....	8
Summary.....	9
CHAPTER II: LITERATURE REVIEW .....	10
Adaptive Clothing Literature .....	11
Theoretical Frameworks .....	20
Conceptual Framework.....	25
Summary.....	28
CHAPTER III: METHODOLOGY .....	29
Research Design.....	29
Population .....	30
Instrumentation .....	32
Data Collection .....	34
Data Analysis .....	36
Summary.....	36

	Page
CHAPTER IV: RESULTS.....	37
Research Objective 1 .....	38
Research Objective 2 .....	40
Research Objective 3 .....	41
Research Objective 4 .....	41
Research Objective 5 .....	44
Summary .....	46
CHAPTER V: CONCLUSIONS AND RECOMMENDATIONS.....	47
Research Objective 1 .....	48
Research Objective 2 .....	49
Research Objective 3 .....	50
Research Objective 4 .....	50
Research Objective 5 .....	52
Recommendations for Practice .....	53
Recommendations for Research .....	54
REFERENCES .....	56
APPENDICES .....	60
Appendix A: Survey Instrument .....	61
Appendix B: Recruitment Email to Districts .....	64
Appendix C: Recruitment Email to Principals.....	66
Appendix D: Recruitment Email to Special Education Teachers, Including Email to Parents/Guardians.....	68
Appendix E: Recruitment Email to Special Education Teachers With Non-Responsive Principals, Including Email to Parents/ Guardians.....	71
Appendix F: Follow-up Email to Teachers, Including Email to Forward to Parents/Guardians.....	74
Appendix G: Email to Utah Foundations and Online Support Groups, Requesting Survey Distribution .....	77
Appendix H: Post for Foundation and Support Group Recruitment in Facebook Groups.....	79

## LIST OF TABLES

	Page
Table 1 Adapted Illustration of Erikson’s (1963) Theory of Psychosocial Development .....	24
Table 2 Breakdown of Instrument Questions by Research Objectives and Originators .....	33
Table 3 Identified Disability(ies) or Impairment(s) of Survey Participants .....	38
Table 4 Adolescents with Disabilities’ Feelings About Mass-Produced and Adaptive Clothing.....	39
Table 5 Clothing’s Impact on the Social Participation of Adolescents with Physical Disabilities.....	42
Table 6 Frequency of Clothing’s Effects on Social Participation of Adolescents with Disabilities .....	43
Table 7 The Perception of Clothing to Self for Adolescents with Disabilities.....	44

## LIST OF FIGURES

	Page
Figure 1 Maslow's (1943) hierarchy of needs.....	21
Figure 2 Conceptual framework on clothing for a person with disabilities .....	26

# CHAPTER I

## INTRODUCTION

The Americans with Disabilities Act National Network (2020) defines a disability as a physical or mental impairment that substantially limits one or more major life activities (para. 2). In 2018, the Centers for Disease Control and Prevention (CDC) released new data stating one in four adults in the U.S. live with some form of disability (e.g., mental, chronic, vision, mobility), with numbers increasing with age. Furthermore, 13.7% of the U.S. population lives with some form of mobility disability (CDC, 2018).

Mobility disabilities are categorized as disabilities that affect lower or upper limbs through either age, disease, injury, or congenital defects, which often require assistive devices or mobility aids such as crutches, braces, wheelchairs, or artificial limbs (Disabled World, 2019). Mobility disabilities, among other variations of disabilities (e.g., vision, hearing, mental), or physical impairments (e.g., ports, ostomies), often make it challenging for a person with disabilities (PWD) to fit in and wear mass-produced clothing items. Some examples of these challenges include pulling a t-shirt over one's head for someone with limited arm mobility or sliding on pants for those that are in wheelchairs.

Mass-produced clothing is designed using brand-determined sizing, making it difficult to know what size to get when shopping at different stores. There is no current set of standardized sizing across all brands and designers of fashion, meaning a size 2 in one brand could be a 0 or 4 in another brand (Kapner, 2019). The sizing variances and lack of other design accommodations provide a high number of challenges when it comes

to finding clothes for a PWD.

The difficulties associated with the fit of mass-produced clothing caused by disabilities or impairments can negatively affect the self-esteem of the PWD. “The lack of attractive, functional clothing can be detrimental to overall well-being if individuals are unable to present themselves according to personal standards” (Kabel et al., 2017, p. 166). Disabled bodies may include variations such as bent backs, misshapen or immobile limbs, or distorted torsos, preventing PWD from wearing mass-produced clothing and being confident in how they present themselves to society. Kabel et al. shared the story of a research participant who had always been well kept but had lost most of her mobility due to illness and age. This participant was resigned to wearing stretchy t-shirts and sweatpants, making her feel worse about herself and the physical issues she faced (p. 166).

Dress is important in making a connection with other people with whom you interact. “Dress...marks the boundary between self and other, individual, and society” (Entwistle, 2000, p. 327). Dress also plays an essential role in how a person feels about themselves and their appearance. Adolescents and young children whose appearance may be seen as different from the current social beauty norms may negatively affect their psychological well-being due to the social significance of appearance and possible attitudes or prejudices towards those who may appear atypical (Hill-Beuf & Porter, 1984).

Furthermore, the self-esteem of adolescents with physical disabilities may be affected because their disability keeps them from appearing like the general population

around them. Kabel et al. (2017) found that lack of appropriate clothing also affects PWD social participation. PWD were found to opt out of attending special occasions or cultural events due to a lack of appropriate clothing that fits their atypical bodies. Clothing may prevent adolescents with disabilities from expressing themselves how they wish in their appearance, thereby affecting their self-esteem. Moreover, lack of appropriate clothing that fits their bodies well may prevent adolescents from attending important social, cultural, or religious events (Kabel et al., 2017).

In addition to the effects on self-esteem and social participation, Stokes and Black (2012) found that safety concerns are also a factor when considering mass-produced clothing, thereby showing an increased need for apparel designed with PWD in mind. One critical safety concern is the need to make sure the clothing does not get caught in the wheels of wheelchairs or other devices used to assist mobility. Properly designed clothing may help reduce the safety concerns of PWD, making the PWD feel more secure in their clothing choices (Stokes & Black, 2012).

One solution to the many clothing struggles of PWD is adaptive clothing. Adaptive clothing is clothing that has been designed for people who “have difficulties dressing due to the inability to manipulate closures or due to lack of a full range of motion required for self-dressing” (Disabled World, 2020). Examples of adaptive clothing include rear closure garments, side-snap pants, cut-away garments, or side zip garments. Adaptive clothing allows people with disabilities to feel comfortable and confident in their appearance; however not everyone with disabilities has the option to purchase adaptive clothing due to its high cost and limited supply (Laitala & Klepp,

2019). Finding adaptive clothing can be challenging for PWD, as it is an underdeveloped, yet growing niche in the fashion industry (Gaffney, 2019).

Despite the limited supply of adaptive clothing, there has been an increase in interest and production in recent years. According to the fashion search platform, Lyst, internet searches for adaptive clothing increased by 80% in 2019 (Lyst, 2019). While adaptive clothing is more prevalent online, mass retailers are slowly joining the adaptive market. Since 2017, retailers such as Asos, Lands' End, Target, Zappos, and Tommy Hilfiger have started designing more inclusive clothing lines, especially for children and adolescents (Gaffney, 2019). Some adaptations from these retailers include dresses with Velcro fasteners instead of buttons and trousers designed to accommodate prostheses (Gaffney, 2019). These clothing lines help make adaptive clothing more readily available at a lower price point, which provides PWD with more opportunities to purchase adaptive clothing.

### **Problem Statement**

PWD have difficulty finding the correct fit in mass-produced clothing, which affects many aspects of their lives. Most of the current research available regarding the need and use of adaptive clothing for people with disabilities focuses on people that are 18 years and older (Freeman et al., 1985; Laitala & Klepp, 2019; Kabel et al., 2017; Klepp & Rysst, 2017; Wang et al., 2014). After searching research databases including EBSCOhost and Google Scholar, minimal research was found on the impacts of apparel on self-esteem and self-confidence of adolescents (i.e., 13-18 years old) with disabilities



(Liskey-Fitzwater et al., 1993).

A search of current research journals reveals various available articles on adaptive apparel design (e.g., backless jeans, magnetic or Velcro closures instead of buttons, side closures on pants). These articles address the adjustments needed for adaptive clothing to be functional and comfortable for people (Kratz et al., 1997; Wang et al., 2014).

However, there is a dearth in the research literature addressing the field of apparel's impact and effects on adolescents with disabilities. Little is known about the social or psychological impact apparel plays on an adolescent with disabilities. Therefore, this study examined adaptive clothing's impact on adolescents' social and emotional needs, thereby adding to the existing research literature in the fields of clothing and disabilities to understand the importance clothing plays in the lives of adolescents with disabilities.

### **Purpose Statement**

Adaptive clothing has been shown to assist adults with disabilities in making everyday tasks easier and in helping them feel more confident in their disabilities (Laitala & Klepp, 2019). However, due to the lack of quantitative and qualitative research on adolescents with disabilities, the effects of adaptive clothing on adolescents' socio-psychological health has yet to be thoroughly analyzed. This study aimed to explore the awareness and use of adaptive clothing by adolescents with disabilities. In addition, this study was also to aid in determining if adaptive clothing affects adolescents' social participation and self-esteem. Five research objectives were crafted to guide this study on the awareness and use of adaptive clothing and social involvement and self-esteem of

adolescents with physical disabilities or impairments.

### **Research Objectives**

The five research objectives constructed to guide the design, data collection and analysis, and the outlining of both findings and the discussion include the following.

- Describe the attitudes of adolescents with physical disabilities towards mass-produced and adaptive clothing.
- Describe the awareness of adaptive clothing to adolescents with physical disabilities.
- Describe the use of adaptive clothing by adolescents with physical disabilities.
- Describe the social participation of adolescents with disabilities with or without adaptive clothing.
- Describe the perception of clothing to self for adolescents with disabilities.

### **Assumptions**

Assumptions for this study were based on the overall experiences and abilities of the study participants. This study's assumptions are as follows.

1. All participants have experience shopping for their own clothes.
2. Participants have the physical and mental capacity to answer all questions by themselves, without the influence of others to assist them.
3. Participants have access to equipment and the technology skills to allow for survey completion.
4. Participants answer the survey questions completely and honestly.

While four assumptions guided this study, some limitations need to be addressed to illustrate the study's restrictions.

## **Limitations**

This study's limitations were identified based on the age of the study participants (13-18 years old) and the 3-week time window allotted for data collection. The limitations impacting the design of this study were as follows.

1. Participant's age, reading level, and/or physical and mental capabilities might prevent them from understanding the survey questions.
2. Time constraints on data collection may lower the number of survey responses.
3. Gaining access to participants that are under 18 and part of a protected population under U.S. Laws including the Individuals with Disabilities Education Act (IDEA, Individuals with Disabilities Education Act, 2004), and the Americans with Disabilities Act (Americans With Disabilities Act, 1990).

Although some limitations are in place, the significance of this study determined the need for the study exceeded these limitations.

## **Significance of the Study**

Due to the high numbers of children and adolescents with disabilities, the need for more adaptive clothing increases as mass-produced clothing is not designed to fit their bodies appropriately, and adjustments are needed to accommodate fit, comfort, and mobility (Stokes & Black, 2012). It is important to understand the effects that adaptive clothing, or lack thereof, may have on the social participation or self-esteem of adolescents with disabilities. Study findings add to the limited literature on adolescents with physical disabilities or impairments that have a need for adaptive clothing. By examining the impacts adaptive clothing has on these adolescents, an increased

awareness was made in clothing design to help limit adverse effects and increase the positive impact on self-esteem and social participation. An understanding of the need for and availability of adaptive clothing will also benefit the fashion design and retail communities to expand their ability to meet the needs of more consumer markets.

### **Definition of Terms**

*Adaptive clothing:* Clothing designed for people that have trouble dressing themselves, or clothing that is made to fit bodies that may have malformations or impairments. Some adaptations include:

- Velcro closures instead of buttons,
- expanded leg girth on trousers to accommodate braces, or
- side closures instead of back closures (Disabled World, 2020).

*Adolescent:* An individual in the transitional stage of childhood to adulthood that occurs between the ages of 13 and 19 (Adolescence, 2020).

*Ostomy:* A bag connected to the body through tubing that allows urine or stool to pass through exit the body not in its normal route. Ostomies can be temporary or permanent (United Ostomy Association of America, Inc., n.d.).

*People with disabilities:* Someone who lives with physical disabilities or impairments.

*Port:* An flexible tube that is placed into a vein in the chest. This helps medical personnel have easier access to a person's blood, give intravenous medication, or to give medications for a period of days (Memorial Sloan Kettering Cancer Center, n.d.).

*Self-esteem:* The feelings a person has about their appearance and abilities,

including how they think others perceive them.

*Social participation:* How people interact with each other in social settings. This includes any face-to-face interactions, as well as participation in the event or activity.

*Stoma:* The opening in the body created by the ostomy surgery. They are usually covered with a bag to collect any stool or urine (United Ostomy Association of America, Inc., n.d.).

### **Summary**

This study was designed to address the gap in literature regarding adolescents with disabilities and their relationship with clothing. People with physical disabilities or impairments struggle to find clothing that fits their body variations well (Stokes & Black, 2012). One way to overcome this obstacle is to wear adaptive clothing designed to accommodate their body forms. The subsequent chapters review existing research literature (e.g., markets for adaptive clothing, social participation barriers for people with disabilities, adolescent psychology and clothing), the research methodology used within the design of this study, findings from the study, and the discussion of the results.

## **CHAPTER II**

### **LITERATURE REVIEW**

People with physical disabilities or impairments (PWD) are limited in their choices of apparel. It is difficult for them to find clothes that not only fit their body but are fashionable as well (Kabel et al., 2017). PWD in the adolescent age range are at risk of adverse effects on their self-esteem and social participation due to their lack of attractive apparel that fits their disabilities or impairments (Hill-Beuf & Porter, 1984). Adaptive clothing provides them with more apparel options that are better suited for their bodies, which allows them to feel more confident while participating in daily-life events (Kabel et al., 2017).

The theoretical framework of this study was based on Abraham Maslow's (1943) Hierarchy of Needs and Erik Erikson's (1963) Theory of Psychosocial Development. These development theories support the need for adaptive apparel and its importance on adolescent self-esteem and social participation. Complete coverage of the theoretical and conceptual frameworks are included later in this chapter.

This literature review expands on the need for adaptive clothing, including desired adaptations by PWD and purchasing experiences and difficulties. Social participation for PWD is reviewed, including face-to-face interactions and involvement in social events. This review concludes with an overview of adolescent psychology and the relationship of clothing to adolescent self-esteem. These many topics and their relevant literature are addressed in the subsequent sections.

## **Adaptive Clothing Literature**

The current research in adaptive clothing focuses primarily on adults, ages 18 and up, with a variety of disabilities (Freeman et al., 1985; Kabel, 2019; Klepp & Rysst, 2017; Kratz et al., 1997). Many studies have focused on the design adaptations needed to make functional and practical adaptive clothing (e.g., Klepp & Rysst, 2017; Kratz et al., 1997; Laitala & Klepp, 2019; Stokes & Black, 2012; Wang et al., 2014). Moreover, many studies also focus on the social effects of clothing for people with disabilities (e.g., Hill-Beuf & Porter, 1984; Jaeger et al., 2015; Kabel, 2019; Kabel et al., 2017, 2016; Kratz et al., 1997). However, fewer studies highlight the psychological importance of adaptive clothing for PWD (Hill-Beuf & Porter, 1984; Stokes & Black, 2012). Within the following sections, research findings in the areas of adaptive clothing purchasing, the social impacts adaptive clothing has on PWD, and the impact of adaptive clothing on the psychological well-being of PWD are outlined to understand the relationship of clothing to people with disabilities.

### **Adaptive Clothing Purchasing**

An ordinary shopping trip for an abled-bodied person may include: (1) entering a retail store and finding the section(s) of the store that fits their desires or needs, (2) selecting clothes from racks or shelves, (3) trying on the selected clothing items, and (4) completing the purchase at the register before exiting the store.

While this seems like a straightforward approach to shopping, it is not always that easy for PWD. Some barriers to a simple shopping excursion for a PWD includes lack of

supply of appropriate clothing for their disability, inability to try on clothes in-store (e.g., due to specific disabilities), or unwelcome and uncomfortable social situations with retail representatives (Baker et al., 2007; Laitala & Klepp, 2019; Reich & Shannon, 1980).

Laitala and Klepp (2019) interviewed nine people who have ports, ostomies, or stomas. These participants expressed their desire to have clothing that is adapted to hide their physical impairments. However, the participants also shared that it is difficult to find clothes that hide the impairment while still being attractive and comfortable. The participants preferred high-waisted pants that allowed the stoma to rest under the waistline; however, mid-rise pants were the current style and sat right on the stoma, making the current style uncomfortable and unsustainable for long periods of wear (Laitala & Klepp, 2019).

Finding appropriate adaptive clothing that is comfortable, fashionable, and functional can be difficult and cause undue stress for PWD. Klepp and Rysst (2017) interviewed 20 people with what they term *deviant bodies*, referring to bodies that do not fit what Klepp and Rysst consider the social norms of appearance (e.g., physical attractiveness, youth, free from physical defect or deformity; p. 80). One participant stated her problem “is not just about finding clothes but also finding clothes that match her age and how she wants to present herself” (Klepp & Rysst, 2017, p. 94).

Adaptive clothing users want clothing that is attractive and functional and readily available to purchase. Studies have shown that PWD are not satisfied with the markets available to purchase adaptive clothing (e.g., retail stores, designer boutiques, big-box retailers; Annett-Hitchcock & Xu, 2015; Baker et al., 2007; Laitala & Klepp, 2019;



MacDonald et al., 1994). Most adaptive clothing used to be sold by specialty retailers online; however, in-store retailers have been adding adaptive clothing to their product lines in recent years (e.g., Kohls, Target; Goldstein, 2020). Identifying desired designs and including them in the mass-production design process helps retailers expand into the adaptive clothing market.

### **Needed Clothing Adaptations**

Each type of disability requires different adaptations to make adaptive clothing functional. “Garment design can aid or prevent a child’s comfort” (Fatima & Paul, 2015, p. 81). Clothing designed specifically for people with mobility disabilities should consider designs such as: (a) clothes with wider dimensions to fit over casts or braces, (b) clothes with a softer texture that fit tight against the skin for under the braces, (c) higher hemlines on pants and skirts to avoid getting caught in crutches or wheelchairs, (d) shoulder or center-back pleats to allow for more movement in the arms and shoulders (Fatima & Paul, 2015). Additionally, Klepp and Rysst (2017) found that most PWD not only want comfortable clothes but clothes that also hide their disabilities from others, thereby helping them blend in with able-bodied consumers.

Moreover, Laitala and Klepp (2019) interviewed nine people who have ports, ostomies, or stomas. These participants expressed their desire to have clothing that is adapted to hide their physical impairments. Unfortunately, most participants said it is difficult to find clothes that hide the impairment while still being attractive and comfortable. One participant chose to purchase maternity clothing and sew the waistband to support the stoma pouch, while another purchased dresses with high waistbands and

leggings a size larger to keep the stoma in place under the dress (Laitala & Klepp, 2019). Finding and purchasing clothing that fit desired adaptations can be difficult in both online and in-store markets.

### **Markets for Adaptive Clothing**

Adaptive clothing is available in both online and in-store markets. The advantages and disadvantages of markets catering to adaptive clothing purchasing are described in the following two sections.

**Online markets.** Online markets present a benefit for PWD in purchasing adaptive clothing because they can do it in the privacy of their own home. Laitala and Klepp (2019) found one study participant who had an ostomy pouch preferred to try on clothes at home due to discomfort and potential conflict with sales representatives. She stated:

The salespeople are trying to assist and come in and help. I do not think that is okay because I'm so afraid that they'll see the pouch and so if they know what the ostomy is, they'll say, "No, you are not allowed to try it on because it is easy to get a leakage." (p. 128)

However, participants also found that purchasing through online markets were more expensive due to extra costs of purchasing and returning clothing, as well as overall higher costs of online products (Laitala & Klepp, 2019).

To help consumers with purchasing from online retailers, virtual communities such as blogs and online chat forums (e.g., Apparelyzed, Disabilities-R-Us, Abledbody, Disaboom) are developed to share needs, discuss concerns, or get retail advice (Annett-Hitchcock & Xu, 2015). These virtual communities help guide members to know the best

places for purchasing adaptive clothing or what products are available online that can be easily adapted based on physical needs (Annett-Hitchcock & Xu, 2015).

**In-store markets.** Clothing shopping in retail stores becomes problematic when the PWD are not provided equitable treatment like their able-bodied counterparts. In a qualitative study by Baker et al. (2007), customer service experiences were described by 115 adults with various disabilities. Many experiences recorded expressed the awkwardness of entering a retail space and having people, including sales personnel, stare at them or go out of their way to avoid interactions. These reactions had the effect of bringing the PWD disability to the forefront of the interactions between them and the sales personnel, causing feelings of humiliation and discomfort (Baker et al., 2007).

Furthermore, Laitala and Klepp (2019) conducted a study on dressing people with skin disabilities, or visible ostomies found difficulties with the sales personnel assisting them because their conditions would create uncomfortable conversations. A study participant recalls a sales clerk forbidding her to try on clothes due to the possibility of leaving stains or leaks (Laitala & Klepp, 2019). Dealing with store personnel is only one aspect that makes in-store shopping difficult for PWD.

Additionally, the store layout of retail spaces has been identified as a significant obstacle for in-store purchases for PWD. The 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design (Department of Justice, 2010) requires store layouts to include a minimum of 36" aisle width, with up to 60" turning space. Unfortunately, not all stores are compliant with these laws in all areas of their retail spaces. Baker et al. (2007) reported that store layouts proved difficult for PWD in

wheelchairs due to narrow aisle width, inability to reach merchandise, small dressing rooms, or high point-of-sales counters. With so many different barriers in place from the store layout for people with mobility disabilities, purchasing adaptive clothing in retail stores becomes a more difficult task than other abled-bodied consumers experience.

### **Social Participation Barriers for People With Disabilities**

Social situations or community engagement can be complicated for people with disabilities due to their lack of confidence in their appearance or lack of appropriate clothing for certain situations. Individuals who identify as disabled tend to isolate themselves from others to avoid social prejudice (Lamb, 2001).

**Face-to-face interactions.** People with disabilities may often have different experiences in social situations than physically-abled people due to their apparel options and the way their body fits in their clothes. For example, Comer and Piliavin (1972) reported that interactions between a physically-abled person and a PWD were shorter in length than interactions between two PWD. They also found that eye contact time was shorter and smiling was less frequent in interactions between PWD and a physically-abled person. Additionally, Comer and Piliavin found that the PWD cut short their interactions with a physically-abled person because of their own feelings of discomfort or lack of self-esteem.

Interactions between PWD and the physically-abled may not always appear difficult for the physically-abled, but they often cause discomfort or frustrations for the PWD. Hammel et al. (2008) interviewed 63 PWD about their feelings of participation

and what participation means to them. The most common emotion expressed in the study was the desire to have meaningful social interactions similar to those of physically abled persons, without the stigma of their disability affecting the interactions. They wanted equality no matter their appearance or limitations.

**Adaptive clothing effects on social participation.** Lack of adaptive clothing may exacerbate difficulties that PWD already experience in their daily interactions. By not dressing according to society standards, PWD stand open to societal scrutiny and condemnation (Entwistle, 2000). This scrutiny may affect a PWD in multiple areas of their lives, such as social behavior and social acceptance. Dress is an “important link between individual identity and social belonging” (Entwistle, 2000, p. 337).

Finding clothes that allow a PWD to feel comfortable in certain situations is not always easy and, in some cases, appears impossible. In a study on clothing-related barriers for people living with disabilities, Kabel et al. (2017) collected data on 81 disabled persons over the age of 18. They found that half of their study participants have declined to participate in social events due to lack of or inability to wear appropriate clothing. One participant expressed that she did not attend her high school homecoming dance due to lack of an appropriate dress and shoes (Kabel et al., 2017). Unfortunately, for some of the PWD in the study who refused to participate in some life events, their relationships with family and friends were negatively affected.

Adaptive clothing may also help PWD who face situations where specific clothing is required, such as uniforms, formalwear, or clothing for religious or cultural purposes (Kabel et al., 2017). Appropriate clothing for PWD may help eliminate many of

the uncomfortable social situations that they encounter. For example, Kabel et al. (2016) conducted a study on apparel-related participation barriers for PWD and their caregivers. One example of these cultural boundaries involved a caregiver daughter-in-law of an older man with South Asian heritage who suffered a stroke and now has nerve pain in his hands and feet. She expressed:

There's a big thing in my country, touching shoes are a big thing. You don't have anybody take your shoes off and on; it's considered a sign of not treating the other person well. And he would say, "No, no, no, you cannot take my shoes off." But he had laces and he couldn't. (p. 2188)

Kabel et al. (2016) also had a caregiver in their study express embarrassment when out at a public pool with her child who had a covered IV port that looked similar to a "leash" (p. 2188). She experienced disapproving glances and verbal abuse from other pool-goers who did not know the purpose of the covering. Lack of appropriate clothing to hide or disguise physical disabilities during specific social situation cause undue distress and discomfort on both the PWD and their caregivers.

### **Adolescent Psychosocial Development and Clothing**

A study of adolescent psychology is important to understand how disabilities affect adolescent's self-esteem. Also included in the following sections is how clothing can also affect the self-esteem of adolescents with disabilities.

**Disabilities during adolescence.** The adolescent stage of growth and development can be very stressful for young adults. Dwyer and Mayer (1968) stated the following about adolescent physical development:

The adolescent phase of growth is also unique because of its finality. Children

tend to assume that once they grow up their disabilities and problems will disappear. Teenagers are confronted with the reality of permanent differences, and some of them must come to terms with permanent defects or deficiencies in physical appearance. (p. 355)

As these differences in development become more apparent, adolescents may struggle to fit in with those around them.

According to Dwyer and Mayer (1968), “It is well known that adolescent growth patterns are extremely heterogeneous, whereas social and cultural pressures within the adolescent peer group stress homogeneity and conformity in matters of appearance. This situation leads to stress for many adolescents” (p. 353). For an adolescent PWD trying to physically conform to these society-determined standards of acceptable appearance, this may be a very stressful time.

Furthermore, Hill-Beuf and Porter (1984) conducted a study on young children and adolescents who suffered from a skin disease known as vitiligo. While their condition was visible from a young age, the children did not begin to concern themselves with their appearance until they reached the early stages of adolescence. By this time, the participants’ appearance outside of the societal-determined beauty standards began causing them anxiety, and they found themselves using clothing as a shield more than an individual expression. Using clothing as a shield may compound the self-esteem issue if the clothing is ill-fitting or unattractive.

**Clothing and self-esteem.** While adolescents with disabilities want to fit in with their peers, clothing may play an important factor in their acceptance by society. In fact, Stokes and Black (2012) found that the lack of adaptive clothing was found to negatively impact PWD self-esteem. In a study on girls with mobility disabilities between ages 13-

18, Stokes and Black reported that many of their subjects were uncomfortable wearing ready-to-wear clothing due to improper fit. These ill-fitting garments made their disabilities stand out, even more, causing the girls to be more self-conscious or even ashamed of their appearance (Stokes & Black, 2012).

Moreover, Freeman et al. (1985) suggest that adaptive clothing designed well with inconspicuous adaptations can increase self-confidence in social situations. Helping PWD feel more confident in their appearance through well-designed adaptive clothing may positively affect the PWD self-esteem.

### **Theoretical Frameworks**

The theoretical framework guiding this literature review is a combination of two development theories. The first theory is Maslow's (1943) Hierarchy of Needs, which addresses a sequence of needs that motivate an individual. The second theory is Erikson's (1963) Theory of Psychosocial Development, which identifies points of success or failure in each stage of development from childhood to adulthood. These theories are explained in more detail in the following sections.

#### **Hierarchy of Needs**

Abraham Maslow's Hierarchy of Needs is a motivational theory introduced in *A Theory of Human Motivation* by Maslow in 1943. In this journal article, Maslow describes five levels of human needs, where "the appearance of one need usually rests on the prior satisfaction of another, more pre-potent need" (p. 370). The needs, in the order given by Maslow, are as follows: (a) physiological needs, (b) safety needs, (c) love needs,

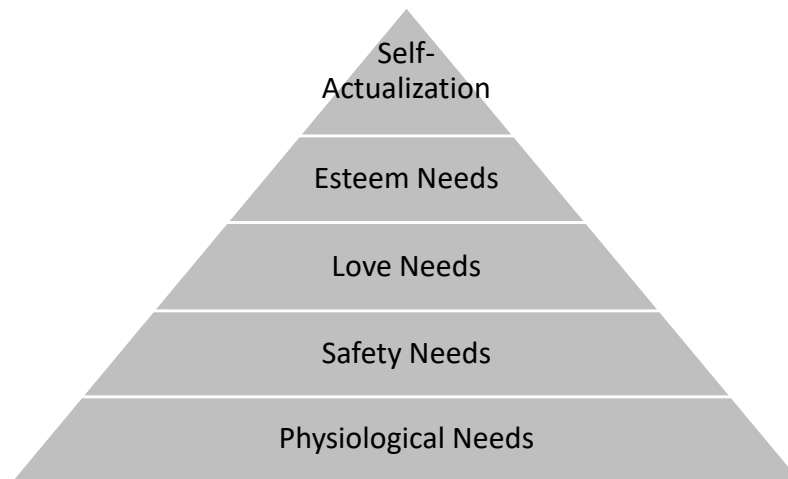


(d) esteem needs, and (e) need for self-actualization (Maslow, 1943)

Maslow's needs were later organized into a pyramid concept by psychologist Charles McDermid in 1960 in an article titled *How Money Motivates Men*. McDermid's pyramid (see Figure 1) was designed to help people in business understand how to have maximum motivation for little cost (McDermid, 1960). It has since become the iconic symbol that most people associate with Maslow's (1943) Hierarchy of Needs, even though Maslow himself did not create it.

**Figure 1**

*Maslow's (1943) hierarchy of needs (adapted from Charles McDermid's [1960] pyramid design)*



Furthermore, Maslow (1943) cites that physiological needs are the most important. He states, "that in the human being who is missing everything in life in an extreme fashion, it is most likely that the major motivation would be the physiological needs rather than any others" (p. 373). Thus, physiological needs become more important and urgent than any other needs. Hunger and water are the frequent examples Maslow

gives on physiological needs. Once the hunger is satiated, human needs become reorganized into the next order of importance.

Safety needs are listed as the second human need by Maslow (1943). An individual needs a “safe, orderly, predictable, organized world, which they can count on” (p. 378). Maslow explains that safety is not necessarily the person’s physical safety but the feeling of safety that matters. This feeling of safety can be altered by examples of the following: illness, injury, death, society, criminals, family, relationships, extremes of temperatures, and lack of physiological needs. Once this need is sufficiently gratified and the individual feels safe, they may move on to the next level of need, which is the need for love.

According to Maslow (1943), the love needs level includes affection and belongingness. As an individual reaches this level, “he will hunger for affectionate relations with people in general, namely, for a place in his group, and he will strive with great intensity to achieve this goal” (Maslow, 1943, p. 381). Individuals will not only seek to obtain love but give it as well. Conversely, the unfulfillment of an individual’s love needs, “is the most commonly found core in cases of maladjustment and more severe psychopathology” (Maslow, 1943, p. 381). The sense of belonging and love help an individual move onto the next level of needs.

The fourth level of needs addressed by Maslow (1943) is the esteem needs.

Maslow writes:

All people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, (usually) high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others. By firmly based self-esteem, we mean that which is soundly based upon real capacity, achievement and respect

from others. (p. 381)

Esteem needs are classified into two main categories. The first category is an individual's feelings about themselves, their abilities, and their accomplishments. The second category includes prestige, recognition, and attention from others. Furthermore, Maslow (1943) warns that "thwarting of these needs produces feelings of inferiority, of weakness, and of helplessness" (p. 382). This can also lead to more serious negative psychological effects. Satisfaction at this level leads to the final need that Maslow addresses, which is self-actualization.

When individuals have satisfied all other needs previously described, they may still feel discontent or restlessness in their lives. This may stem from not living up to the fullest potential of their abilities and desires. When an individual lives in a way that fulfills this potential, this is known as self-actualization (Maslow, 1943). As Maslow states, "What a man *can* be, he *must* be.... This tendency might be phrased as the desire to become more and more what one is, to become everything that one is capable of" (p. 382). Thus, self-actualization is finding one's purpose and pursuing it to completion in order to find happiness (e.g., a musician must make music, an artist must create, a poet must write).

### **Theory of Psychosocial Development**

Also used in constructing the theoretical framework for this study is Erik Erikson's (1963) Theory of Psychosocial Development (see Table 1). This theory is divided into eight stages that describe personality development through an individual's life span. Each stage is identified by the successful outcome of that specific stage and the

possible outcome of failure in the stage. For this study, the focus was on the adolescence stage of development titled *Identity vs. Role Confusion*, which is the fifth of eight stages of development.

**Table 1**

*Adapted Illustration of Erikson's (1963) Theory of Psychosocial Development*

Stage	Age	Psychosocial Issue
Infancy	0-1	Trust vs. Mistrust
Early Childhood	2-3	Autonomy vs. Doubt, Shame
Childhood (play)	4-6	Initiative vs. Guilt
Childhood (school)	7-12	Industry vs. Inferiority
Adolescence	13-19	Identity vs. Role-Confusion
Young Adulthood	20-35	Intimacy vs. Isolation
Adulthood	36-55	Generativity vs. Stagnation
Maturity	56+	Ego-Integrity vs. Despair

The *Identity vs. Role Confusion* stage is a cumulation of the skills and tools learned in previous stages of childhood. Adolescents are faced with the physiological changes that are happening in their bodies and the daunting adulthood tasks that are upcoming in the next stage (Erikson, 1963). According to Erikson, at this stage, adolescents become, “primarily concerned with what they appear to be in the eyes of others as compared with what they feel they are” (p. 261). Peer perception begins to overpower the adolescent’s self-perception.

Furthermore, social interactions become a large part of their developing identity. The opportunities given to them help influence how they think and feel about themselves. The danger of this stage is role confusion, where adolescents cannot settle on an

occupational identity, which can lead to depression or more serious psychotic episodes. Erikson (1963) remarks on how adolescents at this stage can be cruel and exclusive, especially if someone appears, “‘different,’ in skin color or cultural background, in tastes and gifts, and often is such petty aspects of dress and gesture” (p. 262). By this reasoning, poor clothing options brought on by bodies that deviate in shape or abilities can have detrimental effects on an adolescent’s social standing.

Erikson (1963) continues, “For adolescents not only help one another temporarily through much discomfort by forming cliques and by stereotyping themselves, their ideals, and their enemies; they also perversely test each other’s capacity to pledge fidelity” (p. 262). The success of this stage is focused almost singularly on the outcomes of the adolescent’s social participation and relationships. Success in this stage leads to a strong sense of identity for the adolescent, while failure could lead to role confusion, causing harm to development in further stages (Erikson, 1963).

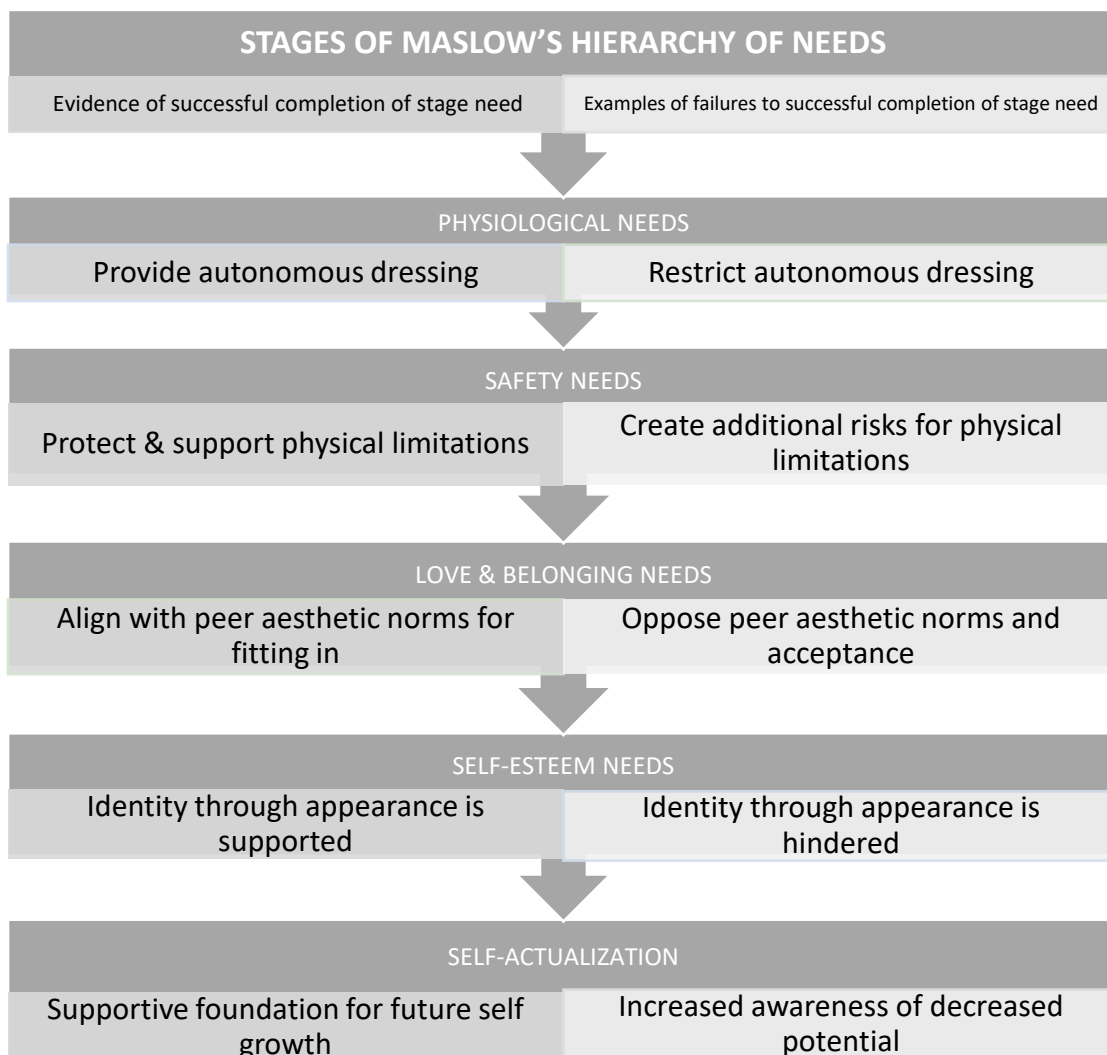
### **Conceptual Framework**

Based on the theoretical frameworks and the literature outlined earlier in this chapter, a conceptual framework (see Figure 2) was created to align theories on adolescence and apparel with this study’s research objectives. When integrated, Maslow’s (1943) and Erikson’s (1963) theories address the importance of this studies’ research objectives in three different ways: (1) Need and availability of adaptive clothing, (2) Social participation for PWD, and (3) Self-esteem of PWD.

First, the availability and quantity of adaptive clothing relate to the safety needs of

**Figure 2**

*Conceptual framework on clothing for a person with disabilities*



adolescents with disabilities (Maslow, 1943). PWD need clothing that fits with their physical disabilities or impairments. Lack of appropriately-fitted clothing can put them at risk for injury or further physical harm if they require the use of assistive devices (Stokes & Black, 2012). Appropriate clothing to cover their bodies also leads to the feeling of

security and stability, which Maslow (1943) includes in this stage.

Second, Maslow's (1943) and Erikson's (1963) theoretical frameworks align with the research objectives that address social participation and face-to-face interactions. Clothing impacts social acceptance and involvement of both abled-bodied people and PWD (Entwistle, 2000; Kabel et al., 2017, 2016). According to Erikson (1963), success in the adolescent stage of development includes positive social interactions and acceptance by peers, which leads to the adolescent creating their own identity. This also aligns with Maslow's need for love and belonging. Social acceptance and belonging of a PWD may be affected based on their appearance, including the fit and attractiveness of their clothing.

The third and final way this study's research objectives align with Maslow's theory includes discussing adaptive and non-adaptive clothing's effect on adolescents with disabilities' self-esteem (Freeman, 1985; Stokes & Black, 2012). This concept is parallel with Maslow's (1943) level of self-esteem needs. All people need to build self-esteem within themselves and how they think others perceive them (Maslow, 1943). Self-esteem is also critical in Erikson's (1963) development of either identity or role confusion.

Figure 2 shows Maslow's (1943) levels of needs beginning with the first need at the top of the figure. Each need is broken down into success or failure in that level, similar to Erikson's development stages which are also defined by success or failure terminology. The success or failure criteria are based on clothing for a PWD. When PWD have access to clothing that is adapted for their body differences, they can attain

autonomous dressing, find support for their disabilities or impairments, fit in with their peer aesthetic norms, and develop a sense of identity that supports their future growth. Furthermore, when adaptive apparel is not attained, their dressing can be restrictive, it can create additional physical limitations with their disability or impairment, they might oppose the peer norms, and their identity could be hindered leading to a higher awareness of their disabilities or impairments.

### **Summary**

The literature review, theoretical framework, and conceptual framework in this chapter support the research objectives in this study. Most of the research on adaptive clothing focuses on adults with minimal focus on the adolescent or child years. Finding adaptive clothing in-store can be difficult due to physical limitations while online shopping causes challenges due to lack on trying on clothing before purchasing. PWD face possible scrutiny by not following society dressing norms which can affect their interactions with others and their social participation. By not having appropriate clothes for their bodies, PWD become more self-conscious of their disabilities which leads to a lower self-esteem. For these reasons, this study focuses on adolescents and how adaptive clothing relates to their social participation and self-esteem. The following chapter includes the methodology for this study.



## **CHAPTER III**

### **METHODOLOGY**

This study aimed to explore the relationship between adolescents with disabilities and their use of adaptive clothing. In addition, this study also examined adaptive clothing's effect on the adolescent's social participation and self-esteem. The following research objectives (RO) were addressed.

- RO 1: Describe the attitudes of adolescents with physical disabilities towards mass-produced and adaptive clothing.
- RO 2: Describe the awareness of adaptive clothing to adolescents with physical disabilities.
- RO 3: Describe the use of adaptive clothing by adolescents with physical disabilities.
- RO 4: Describe the social participation of adolescents with disabilities with or without adaptive clothing.
- RO 5: Describe the perception of clothing to self for adolescents with disabilities.

#### **Research Design**

A quantitative research method was chosen for this study. Quantitative research is “useful to quantify opinions, attitudes, and behaviors and find out how the whole population feels about a certain issue” (Sukamolson, 2007, p. 9). The quantitative approach supported the purpose of the research to explore and identify trends related to dress practices among adolescents with disabilities. Additionally, this study intended to show attitudes towards adaptive clothing by adolescents with disabilities and therefore

fits well with the quantitative methodology.

This descriptive study used a Qualtrics online survey for data collection from adolescents in the state of Utah and throughout the U.S. that have a need for adaptive clothing. Advantages of online data collection are freedom of any in-person influence, limits cost and time of researcher, allows completion at participant's own time and pace, and the ability to reach participants in different locations (Dillman, 2016). An online survey was used to ensure anonymity of survey participants who are in vulnerable populations (e.g., wheelchair users, mobility restrictions, adaptive devices), as well as to reach a broader range of participants. According to Dillman, some disadvantages of online surveys include lack of reliable internet services, overuse of internet surveys, and low response rates. These disadvantages affected the study by causing low response numbers that limited validity, reliability, and generalizability.

### **Population**

The population sampling for this study was initially done with purposeful sampling techniques. Purposeful sampling is done to understand or gain insight and uses a select sample from which the most could be learned (Merriam & Tisdell, 2015). The original population sample for this study consisted of high school students with mobility or physical disabilities or impairments from Utah school districts. All Utah school districts were invited to participate in this study, of which 11 districts accepted.

Based on the most recent data from the Utah State Office of Education, in 2016 there were 62,377 students with disabilities between the ages of 6-21 as registered

through the Individuals with Disabilities Education Act (IDEA; U.S. Department of Education, 2016). Approximately one percent of that population is categorized as having impairments related to the population of this study, it was determined that the desired number of participants is 172 students to allow for strong reliability and generalizability (U.S. Department of Education, 2016). However, the district survey only provided five complete survey responses.

Because of the lack of survey responses from the 11 participating school districts, further online research was used to find foundations or support groups in Utah and throughout the U.S. that served disabled children and their parents. These foundations and groups were contacted through direct messages seeking approval to share the survey with their members. The Facebook groups in which this study's survey was shared are as follows.

- Children With Disabilities Support by Parents
- Cystic Fibrosis Community
- Empowering Special Needs Parents
- Ileostomy, Colostomy, Stoma and Bowel Support
- Living With a Colostomy
- Mothers of Children With Scoliosis
- Muscular Dystrophy and Neuromuscular Disease Support Group
- Muscular Dystrophy Coalition
- Parents of Children and Adults With Special Needs
- Parents of Children With Disabilities
- Parents of Kids With Juvenile Scoliosis
- Raising Children With Cerebral Palsy
- Scoliosis Support for Teens, Tweens and Parents of These
- Scoliosis Support Group
- Spina Bifida Utah
- Trikafta/Kaftrio Cystic Fibrosis
- Utah Kids Foundation Special Needs Parents Forum
- Utah Special Needs Resource Forum
- Utah Spina Bifida.

The survey data from posting in these groups comprise 25 of the 30 completed surveys.

### **Instrumentation**

A quantitative online survey (see Appendix A) was constructed using questions from Sontag and Lee (2004) regarding Proximity of Clothing to Self (PCS). Sontag and Schlater (1982) first introduced the concept of PCS as a way to relate concepts of clothing and an individual's feelings and emotions about themselves. Also included in the survey was how people portray themselves to others through their dress. The original work contained 208 statements, which was then refined by Sontag and Lee into 39 statements using a 6-point Likert-type scale (1 = *never or almost never true of me* to 6 = *always or almost always true of me*). Sontag and Lee analyzed their question constructs to prove high-reliability levels. Additionally, question validity was assured through a panel of eight national experts on clothing and the self.

Also included in the survey were questions regarding social participation for people with disabilities developed by Kabel et al. (2017). These questions included topics such as clothing purchasing experiences and clothing effects on social events and social participation. Question examples included:

- “Has the lack of appropriate clothing ever caused you to miss out on something?”
- “Have you encountered difficulty finding clothes that function to suit your needs but also meet your standard of acceptability [in terms of style, comfort, etc.]?”

The combination of questions from Sontag and Lee (2004), Kabel et al. (2017),

and researcher-developed questions, made up a survey consisting of 30 questions. Some questions included a 5-point Likert scale: 1-*strongly disagree*, 2-*disagree*, 3-*neither agree nor disagree*, 4-*agree*, and 5-*strongly agree*. Also included were multiple-choice and free-response questions. Table 2 consists of a breakdown of the distribution of instrument questions by research objectives and originators.

**Table 2**

*Breakdown of Instrument Questions by Research Objectives and Originators*

Research objectives (RO)	Survey questions	Survey questions influenced by the research literature
RO 1: Describe the attitudes of adolescents with physical disabilities towards mass-produced and adaptive clothing.	1-10	Researcher developed
RO 2: Describe the awareness of adaptive clothing to adolescents with physical disabilities.	11-15	12 (Kabel et al., 2017) 11, 13-15 Researcher developed
RO 3: Describe the use of adaptive clothing by adolescents with physical disabilities.	16-18	Researcher developed
RO 4: Describe the social participation of adolescents with disabilities with or without adaptive clothing.	19-25	19-25 (Kabel et al., 2017)
RO 5: Describe the perception of clothing to self for adolescents with disabilities.	26-30	26-30 (Sontag & Lee, 2004)

**Reliability**

Reliability of the instrument was determined post-hoc. Furthermore, some questions in the online survey were taken from a study done by Kabel et al. (2017) in which social participation of people with disabilities was evaluated. Other questions were taken from a questionnaire made by Sontag and Lee's (2004) Proximity of Clothing to Self scale, which evaluates the relationship a person has with their clothing including how clothing represents them as a person and affects their feelings about themselves.

Internal consistency of the instrument was assessed using Cronbach's Alpha. The internal consistency of the survey instrument used in this study was measured at  $\alpha = 0.72$ . A score between the coefficients of 0.70-0.80 indicates an acceptable rate of reliability, sufficient for research (Koo & Li, 2016).

### **Validity**

Face validity was assured by the thesis committee review and approval of the instrumentation. The survey instrument was also sent to experts at Utah State University and other Utah educators in the field of special education and research to further confirm content validity. The questions in this research's instrument that come from Sontag and Lee's (2004) study were validated in their study results. Kabel et al. (2017) used social media recruitment for their survey ( $N = 113$ ), ensuring a randomized variation of participants in their field of study, further ensuring content validity.

### **Data Collection**

After receiving IRB approval, an email detailing the purpose of the study (see Appendix B) was sent to each school district in Utah requesting permission to email the research survey to their Special Education (SPED) students. Some districts also required a formal research application which included questions about the purpose, time commitment, and benefits of the study. After receiving district approval, emails were sent to the principals of each high school (see Appendix C) for permission, then to the SPED teachers in the high schools. The SPED teachers in the high schools forwarded an email to the parents of their students (see Appendices D, E, and F).

All 41 of Utah's school districts were contacted for permission to send the survey to their students. Only 11 districts gave permission to contact SPED teachers (Beaver, Cache County, Emery, Granite, Iron County, Jordan, Park City, South Sanpete, Tooele County, Wasatch County, and Washington County). Unfortunately, not enough data was collected in that round of sampling to make conclusions.

After an IRB amendment was approved, and to increase the data quantity, the researcher searched Facebook groups to find relevant support groups in the U.S. for children with disabilities or their caregivers. These groups focused on disabilities such as scoliosis, muscular dystrophy, ports and colostomies, and general physical disabilities. The group administrators were then contacted for permission to post about the survey to members of their groups (Appendix G). After approval, a simplified post with an image highlighting the study was posted in the different Facebook groups (Appendix H). This increased data collection to a sufficient response quantity.

The lack of survey response could be attributed to a number of factors. The time of year the survey was distributed (the second half of the school year when parents and students are worn out) may have affected the survey results. Additionally, the added stress of the COVID-19 pandemic on schools and parents might also account for the lack of survey responses. The pandemic caused many schools to increase technology use with their courses. This increase could have caused digital fatigue that prevented parents and students for doing one more thing online. It is unsure if the parents or guardians who received the survey chose not to have their adolescent participate or if it was the adolescents themselves. A consideration that was presented to the researcher towards the

end of the data collection window was that the use of the term “disabilities” in the social media post may have contributed to people ignoring the post, as they do not consider their children disabled. A discussion with one group member brought insight that another term, such as diagnosis or condition, would have made a more appealing post.

### **Data Analysis**

Data from the surveys was analyzed using SPSS v. 24. Descriptive statistics, including mean, standard deviation, percentages, and frequency, were analyzed for each of the survey questions. The purpose of this study was to explore the current state between clothing and adolescents with disabilities or impairments and to provide an awareness that could be used later for more detailed research. For this reason, in-depth statistical analysis was not required at this time.

### **Summary**

A quantitative research design was used identify attitudes of adolescents with disabilities or impairments towards adaptive clothing. The study originally began with participants from Utah school districts, then expanded to Facebook support groups to increase data quantity. The survey instrument was constructed from questions of two previously established surveys including Kabel et al. (2017) and Sontag and Lee (2004), as well as original questions from the researcher. The survey was sent to 11 participating Utah school districts, then after an IRB amendment, it was posted to multiple Facebook groups. The survey results were then analyzed for descriptive statistics using SPSS v. 24.



## CHAPTER IV

### RESULTS

This study examined the attitudes of adolescents with physical disabilities towards mass-produced and adaptive clothing, the awareness and use of adaptive clothing, and the effect clothing has on the social participation and self-esteem of adolescents with physical disabilities or impairments. Data were collected from high school students in Utah and adolescents throughout the U.S. The total number of adolescents who received the survey is unknown due to the multiple methods and attempts of distributing the survey. There were 84 survey responses, with a total of 30 completed surveys. Of the 30 participants, 11 were enrolled in 9th grade, 4 in 10th grade, 6 in 11th grade, and 4 in 12th grade. Five participants chose not to disclose their current school grade. The participants also included 8 males and 22 females.

The participant disability or impairment breakdown is represented in Table 3. As seen in Table 3, the disabilities/impairments most represented in this survey were wheelchair users ( $n = 12$ ), braces on extremities ( $n = 15$ ), and scoliosis ( $n = 15$ ). Other minor disabilities/impairments included crutches/walker ( $n = 3$ ), prosthetics ( $n = 2$ ), ports ( $n = 6$ ), colostomy bag ( $n = 1$ ), distorted limbs or torso ( $n = 5$ ), fine motor deficiencies ( $n = 3$ ), feeding tubes ( $n = 3$ ), and insulin pump ( $n = 1$ ).

The research objectives (RO) have been used to organize this chapter and are presented below.

- RO 1: Describe the attitudes of adolescents with physical disabilities towards mass-produced and adaptive clothing.

- RO 2: Describe the awareness of adaptive clothing to adolescents with physical disabilities.
- RO 3: Describe the use of adaptive clothing by adolescents with physical disabilities.
- RO 4: Describe the social participation of adolescents with disabilities with or without adaptive clothing.
- RO 5: Describe the perception of clothing to self for adolescents with disabilities.

**Table 3***Identified Disability(ies) or Impairment(s) of Survey Participants*

Disability or impairment	<i>n</i>
Wheelchair	12
Crutches/walker	3
Leg, body or arm braces	15
Prosthetic	2
Port	6
Colostomy bag	1
Scoliosis	15
Different shaped torso or limbs	5
Fine motor deficiencies	3
Feeding tube/G-tube	2
Insulin pump	1

*Note.* *n* = 30. Some participants have more than 1 identified disability or impairment.

**Research Objective 1**

Research objective 1 was to determine the attitudes of adolescents with physical disabilities or impairments towards mass-produced and adaptive clothing. Table 4 indicates the responses to the first 10 questions in the survey. The questions were statements about clothing that are judged using a 5-point Likert scale: 1 = *strongly*

*disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*.

Overall, the means of all statements appear to trend more towards the neutral answer of *neither agree nor disagree*. None of the 10 statements had a mean in the *agree* or *strongly agree* categories.

**Table 4**

*Adolescents with Disabilities' Feelings About Mass-Produced and Adaptive Clothing*

Survey question	<i>M</i>	<i>SD</i>	Strongly disagree		Disagree		Neither agree nor disagree		Agree		Strongly agree	
			<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Mass-produced clothing fits my body well.	2.5	.900	3	10	14	46.7	8	26.7	5	16.7	0	0
I feel confident about myself when wearing mass-produced clothing.	2.87	.973	2	6.7	10	33.3	8	26.7	10	33.3	0	0
I feel good about how I look when wearing mass-produced clothing.	3	.947	2	6.7	7	23.3	10	33.3	11	36.7	0	0
Finding mass-produced clothing that fits my body well is easy.	2.2	.847	5	16.7	17	56.7	5	16.7	3	10	0	0
I feel accepted by my schoolmates and friends when I am wearing mass-produced clothing.	3.33	.802	1	3.3	3	10	11	36.7	15	50	0	0
Adaptive clothing fits my body well.	3.37	.809	0	0	3	10	16	53.3	8	26.7	3	10
I feel confident about myself when wearing adaptive clothing.	3.17	.834	2	6.7	1	3.3	18	60	8	26.7	1	3.3
I feel good about how I look when wearing adaptive clothing.	3.07	.868	2	6.7	3	10	17	56.7	7	23.3	1	3.3
Finding adaptive clothing that fits my body well is easy.	2.07	.944	10	33.3	10	33.3	8	26.7	2	6.7	0	0
I feel accepted by my schoolmates and friends when I am wearing adaptive clothing.	3.03	.890	2	6.7	3	10	19	63.3	4	13.3	2	6.7

*Note.* *N* = 30.

In regards to the five statements about mass-produced clothing, none of the participants strongly agreed with any of the statements. Only five participants (16.7%) agreed with the statement “Mass-produced clothing fits my body well,” while the rest of the responses are either neutral or in disagreement. There were three participants (10%) who agreed with the statement “Finding mass-produced clothing that fits my body well is easy,” with the rest stating neutral or disagreeing attitudes. This statement had the second lowest mean ( $M = 2.2$ ) of all statements. Finally, over half of the responses ( $n = 17$ , 56.7%) said mass-produced clothing does not fit their body well.

For the questions regarding adaptive clothing, there were zero responses of *strongly disagree* to the statement “Adaptive clothing fits my body well.” Interestingly, 20 participants (66.6%) disagreed or strongly disagreed with the statement “Finding adaptive clothing that fits my body well is easy.” This statement has the lowest mean ( $M = 2.07$ ) of all statements, making this one of the more interesting findings of this study.

## **Research Objective 2**

Research objective 2 addressed the awareness of adaptive apparel for adolescents with physical disabilities or impairments. Of the 30 survey responses, 21 participants (70%) indicated they had previously heard of adaptive clothing. Other questions in the survey regarding this RO included the following.

- Have you ever/do you currently look for clothing on websites or magazines designed for people with disabilities? (yes/no) If yes, what websites or magazines do you use?
- Have you ever seen adaptive clothing in physical retail stores? (yes/no) If yes, which stores?

Despite most participants having heard of adaptive clothing, only 13 (43.3%) indicated they use websites or magazines specifically catered to adaptive clothing. Free responses ( $n = 3$ ) included using Pinterest, Google searches, and Facebook group recommendations for finding adaptive clothing to purchase. Only two participants (6.7%) confirmed seeing adaptive clothing in physical retail stores. One specific store indicated was Nordstrom, as their source for adaptive shoes. Another brand mentioned was Tommy Hilfiger, although it was not specified where they had seen those clothing items.

### **Research Objective 3**

The third research objective sought to identify the use of adaptive clothing by adolescents with physical disabilities or impairments. When asked if they own any adaptive clothing, 14 participants (47%) stated that yes, they do own adaptive clothing. Three participants (10%) were not sure. Most participants (93%) chose not to indicate details of the adaptive clothing they own. The only two free responses detailing types of adaptive clothing owned mentioned purchasing shoes with Velcro from Nordstrom and Tommy Hilfiger brand clothing from a physical retail store.

### **Research Objective 4**

Research objective 4 sought to describe how adaptive clothing, or the lack thereof, impacts the social participation of adolescents with physical disabilities or impairments. The questions included in this section of the survey asked if the participant's clothing had ever caused them to feel discomfort or embarrassment during

social events or activities. Furthermore, they were asked if they had ever refused to participate in an event or activity due to their lack of appropriate clothing. The results are listed in Table 5.

**Table 5**

*Clothing's Impact on the Social Participation of Adolescents with Physical Disabilities*

Question	Yes		No	
	<i>f</i>	%	<i>f</i>	%
Does the limited availability of clothing due to your disability or impairments cause you to feel insecure or less confident when in social situations (like at school or with friends)?	17	56.7	13	43.3
Have you ever said no or refused to participate in an activity or social event because you did not have appropriate/acceptable clothing for the occasion?	7	23.3	23	76.7
How you ever felt embarrassed or humiliated because of how your clothing options fit or look due to your disability or impairment?	17	56.7	13	43.3

*Note.*  $N = 30$ .

More than half of the participants ( $n = 17, 56.6\%$ ) stated their clothing had caused them to feel less confident and more insecure when in social situations. However, only seven participants claimed to miss or skip events and activities due to a lack of inappropriate clothing for the occasion. So while clothing has made some feel less confident, most are not allowing their clothing to have an impact on their social participation. When asked to provide an example of a time they felt less confident in social situations, one participant shared, “My bras don’t fit and I feel exposed. I can’t find one that works with my scoliosis.” Another participant mentioned, “My friends and I all wore dresses for a special event but mine fit weird because of the tube.” One participant explained, “trying to find summer clothes that hide the brace.” Finally, another

participant expressed frustration because her leg braces were always exposed in her outfits and “they are not really attractive.” She mentioned that she fits in Converse high tops that “are more stylish and cover the braces better.”

Participants were asked how often these situations of missing activities occur to them, in which only seven participants chose to respond. The responses are shown in Table 6. The different options include: once a year ( $n = 1$ ), a few times a year ( $n = 3$ ), monthly ( $n = 1$ ), daily ( $n = 1$ ), other: randomly ( $n = 1$ ).

**Table 6**

*Frequency of Clothing’s Effects on Social Participation of Adolescents with Disabilities*

Frequency	Responses
Once a year	1
A few times a year	3
Monthly	1
Daily	1
Other: More randomly	1

*Note.*  $n = 7$ .

When asked to share moments when they were embarrassed or humiliated because of how their clothing fits their bodies, some free responses were provided. One participant shared their embarrassment at the “brace showing underneath tank top arm holes.” Another participant stated they experienced a “hard time getting shoes on.” Other responses stated, “I can’t wear high cut tops or stuff my friends wear”; “I don’t like going in public with my feeding tube lines showing”; “they’re not flattering or attractive”; “wheelchair or braces dresses aren’t as pretty or flowy.” These comments show that

social participation can be uncomfortable due to clothing concerns.

### Research Objective 5

This study's fifth and final research objective sought to describe the perception of clothing to self for adolescents with disabilities. The perception of clothing to self is a way to relate concepts of clothing and an individual's feelings and emotions about themselves (Sontag & Schlater, 1982). The survey statements were rated using the same 5-point Likert type scale as was used in research objective 1: 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. Table 7 shows the results of these statements.

**Table 7**

*The Perception of Clothing to Self for Adolescents with Disabilities*

Survey question	<i>M</i>	<i>SD</i>	Strongly disagree		Disagree		Neither agree nor disagree		Agree		Strongly agree	
			<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
My self-confidence increases when I dress appropriately for any activity or event.	4.3	.651	0	0	0	0	3	10	15	50	12	40
When I feel good about what I am wearing, then I have more overall confidence in myself.	4.4	.675	0	0	0	0	3	10	12	40	15	50
When I look good in my clothes, then I have more confidence in my body.	4.3	.915	0	0	2	6.7	3	10	9	30	16	53.3
The way my clothing fits me affects how I feel about my body.	4.13	.900	0	0	1	3.3	7	23.3	9	30	13	43.3
When I buy clothing that looks good on me. I feel happy with my body.	4.4	.621	0	0	0	0	2	6.7	14	46.7	14	46.7

*Note.*  $n = 30$ .



The means for all five statements range between 4.13-4.4, which according to the Likert scale, is *agree*. There are no *strongly disagree* responses to any of the five statements. Three of the statements did not have any *disagree* responses: “My confidence increases when I dress appropriately for any activity or event,” “When I feel good about what I am wearing, then I have more overall confidence in myself,” and “When I buy clothing that looks good on me, I feel happy with my body.” The statement “When I look good in my clothes, then I have more confidence in my body” received two (6.7%) *disagree* responses. Lastly, the statement “The way my clothing fits me affects how I feel about my body” received one (3.3%) *disagree* response.

The statement with the most *strongly agree* responses ( $n = 16, 53.3\%$ ) is, “When I look good in my clothes, then I have more confidence in my body.” The next highest statement with *strongly agree* responses ( $n = 15, 50\%$ ) was “When I feel good about what I am wearing, then I have more overall confidence in myself.” The other three statements also have percentages of *agree* and *strongly agree*. These descriptive statistics show some level of positive connection between clothing selection and self-esteem for adolescents with disabilities or impairments.

All five statements have low levels of neutrality except one: “The way my clothing fits me affects how I feel about my body.” This statement has seven responses (23.3%) of *neither agree nor disagree*, while the other statements only have two or three neutral responses each.

## Summary

Data was collected from Utah high school students, as well as through Facebook groups. There were 30 completed surveys to be analyzed. Participants held a slightly more positive attitude towards adaptive clothing than mass-produced clothing. However, finding clothing, whether mass-produced or adaptive, to fit their bodies appears to be the biggest challenge. Most participants ( $n = 21$ , 70%) had heard of adaptive clothing yet very few ( $n = 2$ , 6.7%) had ever confirmed seeing adaptive clothing in physical retail stores. Almost half ( $n = 14$ , 47%) of participants own adaptive clothing. Over half ( $n = 17$ , 56.6%) of the participants stated that their clothing has made them feel insecure or embarrassed during social situations. However, only seven (23.3%) ever refused participation in social events due to lack of clothing. Lastly, all five statements regarding clothing fit and self-esteem have high means that fall in the *agree* category. This implies that there could be a connection between clothing and self-esteem of adolescents with disabilities or impairments.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

PWD have a hard time finding clothing that fits their physical disabilities or impairments. Adaptive clothing is designed to allow for easier dressing and disrobing for PWD. However, the market for adaptive clothing is still small compared to mass-produced clothing. Furthermore, most research literature about adaptive clothing and PWD is about adults over 18 years old. There is minimal research about adolescents and clothing, especially how clothing effects the social participation or self-esteem of adolescents with physical disabilities or impairments. The purpose of this study was to understand the relationship between adolescents with physical disabilities or impairments and clothing (adaptive and mass-produced), the awareness and use of adaptive clothing, and how clothing affects the social participation and self-esteem of adolescents with physical disabilities or impairments.

The data collection began with survey responses from high school students with physical disabilities or impairments from 11 school districts in Utah (Beaver, Cache County, Emery, Granite, Iron County, Jordan, Park City, South Sanpete, Tooele County, Wasatch County, and Washington County). The survey distribution was then expanded to collect more data. The survey was shared with Facebook groups that focus on adolescents with physical disabilities or their caregivers. The conclusions in this chapter are organized by the five research objectives (RO) for this study.

- RO 1: Describe the attitudes of adolescents with physical disabilities towards mass-produced and adaptive clothing.

- RO 2: Describe the awareness of adaptive clothing to adolescents with physical disabilities.
- RO 3: Describe the use of adaptive clothing by adolescents with physical disabilities.
- RO 4: Describe the social participation of adolescents with disabilities with or without adaptive clothing.
- RO 5: Describe the perception of clothing to self for adolescents with disabilities.

### **Research Objective 1**

Objective 1 of this study was to “*Describe the attitudes of adolescents with physical disabilities towards mass-produced and adaptive clothing.*” Participants in this study tended towards neutral responses regarding their feelings about mass-produced and adaptive clothing. The five statements regarding mass-produced clothing have a lower cumulative mean ( $M = 2.78$ ) than the statements about adaptive clothing ( $M = 2.94$ ). On the 5-point Likert scale used in this study, a 2 refers to *disagree* and 3 means *neither agree nor disagree*. The cumulative means imply that the adolescents in this study have a slightly more negative view towards mass-produced clothing than they do towards adaptive clothing.

The two statements specifically mentioning fit of mass-produced clothing earned the lowest mean score out of all the statements on mass-produced clothing, showing that proper fit is not achieved satisfactorily for these adolescents. This agrees with Klepp and Rysst’s (2017) findings that improper clothing fit leads patients to feel dissatisfied and frustrated with themselves and their clothing.

There also appears to be a higher number of *neither agree nor disagree* answers in the statements regarding adaptive clothing ( $f = 78$ ) than mass-produced clothing ( $f = 42$ ). It is unsure if the cause of this neutrality is due to a lack of experience with adaptive clothing or a higher feeling of apathy regarding clothing in general. Such high neutrality was not seen in previous research articles on adults, so it is possible this apathy comes from the participant's ages. Due to the age of this study's population, parents or guardians might make all clothing purchases leaving the adolescents to accept whatever is purchased for them. Overall, it appears that the adolescents in this study trend towards neutral or poor feelings regarding mass-produced and adaptive clothing.

### **Research Objective 2**

Objective 2 of this study was to "*Describe the awareness of adaptive clothing to adolescents with physical disabilities.*" The awareness of adaptive clothing is high, with 21 participants (70%) having heard of adaptive clothing prior to this study. These results indicate a high awareness of adaptive clothing but low trends in purchasing clothing. It is possible that these results could be skewed due to the parents buying the clothes instead of the adolescents

.In 2019, inquiries into adaptive clothing had increased by 80% on fashion websites (Lyst, 2019). There has also been an increase of designers creating adaptive clothing lines for their brand in the last 5 years (Gaffney, 2019). However, despite increases in production, they are still not available as easily as mass-produced clothing. Only two participants claimed to have seen adaptive clothing in physical retail stores. The

participants used online resources such as Pinterest, Google, or Facebook to find their clothing. Overall, knowledge of adaptive clothing was high due to increased exposure through online resources.

### **Research Objective 3**

Objective 3 of this study was to “*Describe the use of adaptive clothing by adolescents with physical disabilities.*” The data on this objective was limited; however, it showed that 14 participants (46%) owned and used adaptive clothing. It is possible that more than 14 study participants own adaptive clothing, but due to their young age and inexperience purchasing clothing they are unaware that some items they own are considered adaptive.

The only free response provided from these survey questions indicated purchases from Nordstrom as their preferred retailer for adaptive shoes. The adaptive clothing market is still growing both online and in-stores (Goldstein, 2020). This growth also allows adaptive clothing to be sold at a more reasonable price point, which, according to Laitala and Klepp (2019), was a factor that limited adaptive clothing purchases.

### **Research Objective 4**

Objective 4 of this study was to “*Describe the social participation of adolescents with disabilities with or without adaptive clothing.*” When asked if they have ever felt insecure or less confident in a social situation due to lack of appropriately fitting clothing, 17 participants said yes. The need to feel confident in themselves and belonging with

their peers addresses the love and belonging needs from Maslow's (1943) Hierarchy of Needs. In alignment with this study's conceptual framework, failure during this Love and Belonging stage can lead to opposition of peer norms and unacceptance. It is unsure if the participants felt unaccepted during these situations or simply more insecure in their appearance.

One result that appears noteworthy was that only seven participants had ever refused to participate in an event or occasion due to lack of appropriate clothing. This implies that while levels of comfort or embarrassment in social situations may vary, adolescents are not allowing clothing to negatively affect their social participation. By participating in these occasions, the participants can move to the success side of the Love and Belonging stage, as seen in this study's conceptual framework. The success criteria include aligning with peer aesthetic norms leading to a feeling of "fitting in" with their peers. It is positive to note that the participants said these moments of refusal are rare only happen a couple of times per year or less.

Finally, the participants were asked if they had ever felt embarrassed or humiliated in social situations due to lack of appropriate clothing. Over half of the participants ( $n = 17$ ) said they had felt embarrassed or humiliated. The participants expressed frustration with clothing items, such as bras or dresses, that lead to these embarrassing moments, making it difficult to want to participate. It can be challenging for adolescents to face societal scrutiny over their dress when in public (Entwistle, 2000). People with disabilities just want to be treated like others and not face criticism or embarrassment because of their dress (Hammel et al., 2008). The high number of

participants expressing that they have felt humiliation or embarrassment is concerning in that these experiences can lead to negative self-esteem or more refusals to participate to avoid these situations.

### **Research Objective 5**

Objective 5 of this study was to “*Describe the perception of clothing to self for adolescents with disabilities.*” The perception of clothing to self is how the concepts of clothing and an individual’s self-esteem relate to one another (Sontag & Schlater, 1982). The participants of this study *agree* (50%) or *strongly agree* (40%) that their self-confidence increases when they are dressed appropriately for an activity or event. This finding supports previous research done by Freeman et al. (1985), who found that clothing that fits properly and helps conceal the disability or impairment increases self-confidence.

One aspect of this objective’s results that stands out is there were only three *disagree* responses and zero *strongly disagree* responses. The statement “When I look good in my clothes, then I have more confidence in my body” had two of the three *disagree* responses. This implies clothing is not the only influence on an adolescent’s self-esteem. This finding is consistent with Maslow’s (1943) Hierarchy of Needs in that simply having clothing that fits is not the only need that must be met to achieve high levels of self-esteem. According to Maslow, an individual must also achieve security and belonging before self-esteem can be attained.

All but two participants agreed or strongly agreed that buying clothing that looks



good helps them feel happier with their bodies. It is important for adolescents with disabilities to have many options of clothing that fits their body, especially if it increases their happiness levels. The challenge therein lies in finding the clothing items. Though the clothing industry has increased its production of adaptive apparel in recent years (Gaffney, 2019), there is room for improvement.

### **Recommendations for Practice**

This study discovered connections between adolescents with physical disabilities or impairments and their social participation and self-esteem. Parents need to be aware of this connection because then they may take steps to prevent any negative effects clothing has on their children or adolescents with disabilities or impairments. Since it is most often parents who purchase clothing for adolescents, it is important for them to understand how the purchases they make might effect their adolescent's self-esteem. Parents can also use this study to increase awareness of adaptive clothing available. The parents can then be more sensitive during experiences where clothing might become a barrier for their adolescent and therefore can provide more support when needed.

As educators who work with adolescents, it is also important to understand what barriers might occur in the lives of students with physical disabilities or impairments. They need to be prepared to support and encourage students who may be experiencing clothing insecurity in social situations in their classrooms and schools. As teachers, it is their job to help their students grow, and by knowing what challenges adolescents may face regarding their clothing, social participation, and self-esteem, they can be ready to

bolster their students whichever way is needed.

The fashion industry needs to realize the impact clothing has on PWD of all ages. The industry needs to streamline the design and manufacturing process of clothes so adaptive apparel is just as easy to obtain as mass-produced clothing. They need to find a way to make adaptive clothing more easily attainable through mainstream retail stores, as well as in a price range that is comparable to other similar clothing items. If fashion designers and retailers can understand the importance of supplying adaptive clothing for all abilities, body shapes, sizes, and ages, then many negative opinions regarding clothing for PWD can be eliminated.

### **Recommendations for Research**

Further research focused on the individual areas of social participation and self-esteem for adolescents with disabilities or impairments is needed to gain a more in-depth knowledge of clothing's impact on these individuals. Studies with inferential statistical analysis will help increase awareness of exactly how clothing affects adolescents with physical disabilities or impairments. The instrumentation could be more specific regarding social participation or self-esteem to better understand clothing's effects on adolescents. Implementation of verbiage used by the PWD population in the instrument can help participants connect to the survey better. Instead of the term "disabilities," other terms such as "diagnosis" or "condition" would possibly engage more participants to the research.

Research into the clothing design and manufacturing process would allow for

more understanding of the limits of adaptive clothing. Understanding what is holding the adaptive clothing designers and manufacturers back would help break through the barriers into the mass-markets and more exposure of the clothing. Further investigation into the clothing industry could uncover ways to increase adaptive clothing production to be more readily available to those who need those items, all while keeping costs at an acceptable level.

More research needs to be conducted exploring how clothing affects adolescents and childrens lives. Survey exposure was limited because of the stress of the school year during the COVID-19 pandemic. Future research done, specifically during the summer break, might be more receptive to parents and students. Additionally, future studies completed in-class of a specific district or school could yield more results than online recruitment.

Completing research on adolescents or children presents more difficulties than researching adults due to their classification as a vulnerable population and required parental consent. A better way to streamline the process of parental consent so it is not such a barrier between the researcher and participants would help increase data results. Despite challenges of conducting research with children and adolescents, it is worth the effort because the information gained about their relationship with clothing can create a much needed boost to the adaptive clothing industry.

## REFERENCES

- Adolescence. (2020). *Psychology Today*. <https://www.psychologytoday.com/us/basics/adolescence>
- Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq. (1990). <https://www.ada.gov/pubs/adastatute08.htm>
- Americans with Disabilities Act National Network. (2020). <https://adata.org/faq/what-definition-disability-under-ada>
- Annett-Hitchcock, K., & Xu, Y. (2015). Shopping and virtual communities for consumers with physical disabilities. *International Journal of Consumer Studies*, 39, 136-144. <https://doi.org/10.1111/ijcs.12161>
- Baker, S. M., Holland, & J., Kaufman-Scarborough, C. (2007). How consumers with disabilities perceive “welcome” in retail servicescapes: A critical incident study. *Journal of Services Marketing*, 21, 160-173. <https://doi.org/10.1108/08876040710746525>
- Centers for Disease Control and Prevention. (2018, May 24). *Disability impacts all of us*. <https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html>
- Comer, R. J., & Piliavin, J. A. (1972). The effects of physical deviance upon face-to-face interaction: The other side. *Journal of Personality and Social Psychology*, 23(1), 33-39. <https://doi.org/10.1037/h0032922>
- Department of Justice. (2010). *2010 ADA standards for accessible design*. <https://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.htm#pgfId-1009823>
- Dillman, D. A. (2016). Moving survey methodology forward in our rapidly changing world: A commentary. *Journal of Rural Social Sciences*, 31(3), 160-174. <https://egrove.olemiss.edu/jrss/vol31/iss3/8>
- Disabled World. (2019, January 7). *Physical and mobility impairment information*. <https://www.disabled-world.com/disability/types/mobility/>
- Disabled World. (2020, June 11). *Disability adaptive clothing for disabled and elderly*. <https://www.disabled-world.com/assistivedevices/adaptive-clothing.php>
- Dwyer, J., & Mayer, J. (1968). Psychological effects of variations in physical appearance during adolescence. *Adolescence*, 3(12), 353-358.

- Entwistle, J. (2000). Fashion and the fleshy body: Dress as embodied practice. *Fashion Theory*, 4(3), 323–347. <https://doi.org/10.2752/136270400778995471>
- Erikson, E. H. (1963). *Childhood and Society*. W. W. Norton & Company, Inc.
- Fatima, N., & Paul, S. (2015). Assessment of clothing needs of physically challenged children. *International Journal of Multidisciplinary Approach and Studies*, 2(2), 78-82.
- Freeman, C. M., Kaiser, S. B., & Wingate, S. B. (1985). Perceptions of functional clothing by persons with physical disabilities: A social-cognitive framework. *Clothing and Textiles Research Journal*, 4(1), 46–52. <https://doi.org/10.1177/0887302X8500400107>
- Gaffney, A. (2019, July 28). *The \$400 billion adaptive clothing opportunity*. Vogue Business. <https://www.voguebusiness.com/consumers/adaptive-clothing-differently-abled-asos-target-tommy-hilfiger>
- Goldstein, J. (2020, September 14). *Models of all abilities appear in a virtual runway of dreams show at New York fashion week*. <https://people.com/human-interest/models-all-abilities-appear-virtual-runway-of-dreams-fashion-show-nyfw/>
- Hammel, J., Magasi, S., Heinemann, A., Whiteneck, G., Bogner, J., & Rodriguez, E. (2008). What does participation mean? An insider perspective from people with disabilities. *Disability and Rehabilitation*, 30(19), 1445-1460. <https://doi.org/10.1080/09638280701625534>
- Hill-Beuf, A., & Porter, J. D. R. (1984). Children coping with impaired appearance: Social and psychologic influences. *General Hospital Psychiatry*, 6(4), 294–301. [https://doi.org/10.1016/0163-8343\(84\)90024-0](https://doi.org/10.1016/0163-8343(84)90024-0)
- Individuals with Disabilities Education Act, 20 U.S.C. § 1400 et seq. (2004). <https://uscode.house.gov/view.xhtml?path=/prelim@title20/chapter33&edition=prelim>
- Jaeger, G., Røjvik, A., & Berglund, B. (2015). Participation in society for people with a rare diagnosis. *Disability and Health Journal*, 8(1), 44-50. <https://doi.org/10.1016/j.dhjo.2014.07.004>
- Kabel, A. (2019). Wardrobe malfunction: Case studies of disability and clothing at the threshold of older adulthood. *Journal of Human Behavior in the Social Environment*, 29(6), 731–743. <https://doi.org/10.1080/10911359.2019.1603130>
- Kabel, A., Dimka, J., & McBee-Black, K. (2017). Clothing-related barriers experienced by people with mobility disabilities and impairments. *Applied Ergonomics*, 59, 165–169. <https://doi.org/10.1016/j.apergo.2016.08.036>

- Kabel, A., McBee-Black, K., & Dimka, J., (2016). Apparel-related participation barriers: Ability, adaptation and engagement. *Disability and Rehabilitation*, 38(22), 2184-2192. <https://doi.org/10.3109/09638288.2015.1123309>
- Kapner, S. (2019, December). It's not you. Clothing sizes are broken. *Wall Street Journal*. <https://www.wsj.com/articles/its-not-you-clothing-sizes-are-broken-11576501384>
- Klepp, I. G., & Rysst, M. (2017). Deviant bodies and suitable clothes. *Fashion Theory- Journal of Dress Body and Culture*, 21(1), 79–99. <https://doi.org/10.1080/1362704X.2016.1138658>
- Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, 15(2), 155-163. <https://doi.org/10.1016/j.jcm.2016.02.012>
- Kratz, G., Söderback, I., Guidetti, S., Hultling, C., Rykatkin, T., & Söderström, M. (1997). Wheelchair users' experience of non-adapted and adapted clothes during sailing, quad rugby or wheel-walking. *Disability and Rehabilitation*, 19(1), 26–34. <https://doi.org/10.3109/09638289709166442>
- Laitala, K., & Klepp, I. G. (2019). Dressing a demanding body to fit in: Clean and decent with ostomy or chronic skin disease. *Social Inclusion*, 7(1), 124–135. <https://doi.org/10.17645/si.v7i1.1717>
- Lamb, J. M. (2001). Disability and the social importance of appearance. *Clothing and Textiles Research Journal*, 19(3), 134-143. <https://doi.org/10.1177/0887302X0101900304>
- Liskey-Fitzwater, N., Moore, C., & Gurel, L. (1993). Clothing importance and self-perception of female adolescents with and without scoliosis. *Clothing and Textiles Research Journal*, 11(3), 16-22. <https://doi.org/10.1177/0887302X9301100303>
- Lyst. (2019). *A year in fashion 2019*. <https://www.lyst.com/year-in-fashion-2019/>
- MacDonald, N. M., Majumder, R. K., & Bua-Iam, P. (1994). Apparel acquisition for consumers with disabilities: Purchasing practices and barriers to shopping. *Clothing and Textiles Research Journal*, 12(2), 38–45. <https://doi.org/10.1177/0887302X9401200206>
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*. 50, 370-396.
- McDermid, C. D. (1960). How money motivates men. *Business Horizons*. 3(4), 93-100. [https://doi.org/10.1016/S0007-6813\(60\)80034-1](https://doi.org/10.1016/S0007-6813(60)80034-1)

- Memorial Sloan Kettering Cancer Center. (n.d.). *About your implanted port*.  
<https://www.mskcc.org/cancer-care/patient-education/your-implanted-port>
- Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation*. [Ebook]. <https://ebookcentral-proquest-com.dist.lib.usu.edu>
- Reich, N., & Shannon, E. (1980). Handicap: Common physical limitations and clothing-related needs. *Home Economics Research Journal*, 8(6), 437-444.  
<https://doi.org/10.1177/1077727X8000800608>
- Sontag, M., & Lee, J. (2004). Proximity of clothing to self scale. *Clothing and Textiles Research Journal*, 22(4), 161-177. <https://doi.org/10.1177/0887302X0402200402>
- Sontag, M. S., & Schlater, J. D. (1982). Proximity of clothing to self: Evolution of a concept. *Clothing and Textiles Research Journal*, 1, 1-8.  
<https://doi.org/10.1177/0887302X8200100101>
- 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. <https://doi.org/10.1080/17543266.2012.700735>
- Sukamolson, S. (2007). *Fundamentals of quantitative research*. <https://pdf4pro.com/view/fundamentals-of-quantitative-research-chula-20b41d.html>
- U.S. Department of Education. (2016). *Utah identification of children with disabilities*.  
<https://osep.grads360.org/services/PDCService.svc/GetPDCDocumentFile?fileId=20718>
- United Ostomy Associations of America, Inc. (n.d.) *What is an ostomy?*  
<https://www.ostomy.org/what-is-an-ostomy/>
- Wang, Y., Wu, D., Zhao, M., & Li, J. (2014). Evaluation on an ergonomic design of functional clothing for wheelchair users. *Applied Ergonomics*, 45(3), 550–555.  
<https://doi.org/10.1016/j.apergo.2013.07.010>

APPENDICES



Appendix A  
Survey Instrument

## Survey Instrument

Qualifying Question: Adaptive clothing is clothing that has been altered for people with mobility disabilities that have difficulty putting on or taking off clothing. This clothing helps people with disabilities feel more independent. Some examples are: Velcro instead of buttons on shirts, Velcro instead of ties on shoes, side seams on pants instead of a front seam with button, side closures on shirts instead of front closure, pants with a higher waist in the back and shorter in the front. Are you an adolescent between the ages of 13-17 that has a disability or physical impairment that would benefit, or has benefitted, from having adaptive clothing?

Demographic Questions:

- What grade level are you currently enrolled in? (9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup>)
- What is your identified gender? (Male, Female, Other Gender, Prefer Not To Say)
- What is your disability(ies) or impairment(s) that cause you to need adaptive clothing? Select all that apply. (Wheelchair use; Crutches; Leg, body, or arm braces; Prosthetics; Port; Colostomy bag; Scoliosis; Different shaped torso or limbs; Other, please describe)
- For how long have you had this disability or impairment? (Less than one year; 1-2 years; 3-4 years; 5 or more years)

Mass-produced clothing is clothing that is produced and available in large quantities in most major clothing stores. There are no special designs made for people with disabilities.

Please respond to the following statements based on the level that you agree with them. (5-point Likert scale: 1-*strongly disagree*, 2-*disagree*, 3-*neither agree nor disagree*, 4-*agree*, and 5-*strongly agree*)

1. Mass-produced clothing fits my body well.
2. I feel confident about myself when wearing mass-produced clothing.
3. I feel good about how I look when wearing mass-produced clothing.
4. Finding mass-produced clothing that fits my body well is easy.
5. I feel accepted by my schoolmates and friends when I am wearing mass-produced clothing.

Adaptive clothing is specially designed clothing to fit people with disabilities who may struggle putting on and removing clothing on their own.

Please respond to the following statements based on the level that you agree with them. (5-point Likert scale: 1-*strongly disagree*, 2-*disagree*, 3-*neither agree nor disagree*, 4-*agree*, and 5-*strongly agree*)

6. Adaptive clothing fits my body well.
7. I feel confident about myself when wearing adaptive clothing.
8. I feel good about how I look when wearing adaptive clothing.
9. Finding adaptive clothing that fits my body well is easy.
10. I feel accepted by my schoolmates and friends when I am wearing adaptive

clothing.

11. Have you heard of adaptive clothing before this survey? Yes/no
12. Have you ever/do you currently look for clothing on websites or magazines designed for people with disabilities? Yes/no
13. If yes to 12, what websites or magazines do you use? Short answer
14. Have you ever seen adaptive clothing in physical retail stores? Yes/no
15. If yes to 14, which stores? Short answer
16. Do you own any adaptive clothing? Yes/no/not sure
17. If yes to 16, check the adaptive clothing items you own. (Shoes with Velcro; Slip-on shoes; Adaptive underwear; Pants with side seams; Pants with a higher back and shorter front; Pants with no back fabric around the rear; Pants with an elastic waistband; Shirts with hidden zippers; Shirts with Velcro on the front instead of buttons; Jackets with side zippers; other items, please describe)
18. If yes to 16, how often do you wear adaptive clothing? (Daily; 4-6 times a week; 2-3 times a week; once a week; special occasions only)
19. Does the limited availability of clothing due to your disability or impairments cause you to feel insecure or less-confident when in social situations (like at school or with friends)?
20. If yes to 19, please describe a situation when this occurred.
21. Have you ever said no or refused to participate in an activity or social event because you did not have appropriate/acceptable clothing? For example, you do not participate in a school dance because you did not have the appropriate formal wear or suitable shoes/footwear.
22. If yes to 21, please describe those moments in as much detail as you can remember.
23. If yes to 21, how often has something like this happened to you? (Once a year; A few times a year; Monthly; Weekly; Daily; Other, please describe)
24. Have you ever felt embarrassed or humiliated because of how your clothing options fit or look due to your disability or impairment?
25. If yes to 24, please provide examples.

(5-point Likert scale: 1-*strongly disagree*, 2-*disagree*, 3-*neither agree nor disagree*, 4-*agree*, and 5-*strongly agree*)

26. My self-confidence increases when I dress appropriately for any activity or event.
27. When I feel good about what I am wearing, then I have more overall confidence in myself.
28. When I look good in my clothes, then I have more confidence in my body.
29. The way my clothing fits me affects how I feel about my body.
30. When I buy clothing that looks good on me, I feel happy with my body.

Appendix B

Recruitment Email to Districts

Good Day,

My name is Emalee Brown and I am currently a graduate student with Utah State University. I am in the process of completing a thesis study (IRB #11583) on the impacts and effects of clothing on adolescents with physical disabilities or impairments (e.g., use of wheelchairs, crutches, braces, ports, ostomies, etc.). This study is intended to help increase awareness of how clothing affects the social participation and self-esteem of adolescents with disabilities. The results of this study will benefit future researchers on this topic, as well as those that work specifically with adolescents with disabilities.

I am writing to ask permission to contact your high school Special Education teachers about sharing the details of this project with the parents/guardians of all of their students. This will involve the Special Education teachers forwarding a message from me to the parents/guardians of the students in their classes. This will be a minimal time commitment for your Special Education teachers.

Additionally, one reminder email will be sent to the Special Education teachers to forward to the parents a week following the initial email.

The survey will not be completed during school hours or disrupt the school learning environment in any way. The survey will be sent out to the teachers in March, 2021.

I hope this is something your district would be willing to participate in. Please let me know if you have any further questions. I look forward to hearing back from you.

Sincerely,

Emalee Brown  
Graduate Student  
Emalee.brown@aggiemail.usu.edu

Lacey Boschetto, Ph.D.  
Thesis Committee Chairperson  
Lacey.boschetto@usu.edu

Appendix C

Recruitment Email to Principals

Good Day,

My name is Emalee Brown and I am currently a graduate student with Utah State University. I am in the process of completing a thesis study (IRB #11583) on the impacts and effects of clothing on adolescents with physical disabilities or impairments (e.g., use of wheelchairs, crutches, braces, ports, ostomies, etc.). This study is intended to help increase awareness of how clothing affects the social participation and self-esteem of adolescents with disabilities. The results of this study will benefit future researchers on this topic, as well as those that work specifically with adolescents with disabilities.

After having received permission from your district, I am writing to ask your permission to contact the Special Education teachers in your school, as well as requesting their contact emails. The teachers will receive an email from me explaining the study and their role, and will also contain an email with the survey link they will forward to the parents/guardians of their students.

The time requirements of your teachers is limited. **Participation will only require them to forward information from my email into an email to the parents/guardians of their students.** There will also be two reminder emails sent to the teachers that they will be asked to forward as well.

The survey will not be completed during school hours or disrupt the school learning environment in any way. The survey will be sent out to your Special Education teachers in March, 2021.

I hope this is something your school would be willing to participate in. Please let me know if you have any further questions. I look forward to hearing back from you.

Sincerely,

Emalee Brown  
Graduate Student  
Emalee.brown@aggiemail.usu.edu

Lacey Boschetto, Ph.D.  
Thesis Committee Chairperson  
Lacey.boschetto@usu.edu

Appendix D

Recruitment Email to Special Education Teachers,  
Including Email to Parents/Guardians



Good Day,

My name is Emalee Brown and I am currently a graduate student with Utah State University. I am in the process of completing a thesis study (IRB #11583) on the impacts and effects of clothing on adolescents with physical disabilities or impairments (e.g., use of wheelchairs, crutches, braces, ports, ostomies, etc.). This study is intended to help increase awareness of how clothing affects the social participation and self-esteem of adolescents with disabilities. The results of this study will benefit future researchers on this topic, as well as those that work specifically with adolescents with disabilities.

After receiving permission from your district and school principal, I am emailing you with the study information and survey link for you to copy into a new email and send to all parents/guardians of students in your Special Education Program. After sending out the study information, there is nothing further that you need to complete at this time. Any questions or responses that are sent back to you from the parents/guardians must be forwarded back to the research team. There is to be no contact between you and the parents/guardians regarding this study outside of the email with the content below, in order to protect the integrity of the study protocol.

Thank you for your assistance in helping me complete my study. Please copy and paste the following in its entirety and send it on to the parents/guardians of your students:

Good Day,

**Please note that participation in this study is voluntary and will in no way affect the services provided to your student.**

My name is Emalee Brown. I am currently a graduate student completing a thesis through Utah State University (IRB #11583). Your student's teacher has been asked to pass along the information for my study. My thesis study examines the impacts and effects of clothing on adolescents with physical disabilities or impairments.

If your high school student is someone that fits the criteria of the study population, your student is asked to participate in the study. The study population includes, but is not limited to, the following situations:

- Currently uses a wheelchair, crutches, braces, or other mobility devices
- Currently has a port or colostomy bag
- Has other disabilities that affect use of their limbs or torso
- Has other physical disabilities or impairments that require, or would benefit from, the use of altered or adapted clothing

This survey is online through Qualtrics, and is designed to provide information on

clothing, self-esteem, and social participation of adolescents with disabilities or impairments. It includes questions regarding clothing purchasing, awareness of clothing designed for people with disabilities, how clothing impacts their social participation, and how clothing impacts how the adolescent feels about themselves. The survey will take approximately 10 minutes.

Below you will find the link to the survey. At the beginning of the survey you will find a parent informed consent form that you will need to electronically sign. After that, your student will need to sign another consent form, then the survey will begin. No follow-up commitment is required. If your student is not physically able to complete the survey by themselves, you may provide assistance in answering the questions. Students that are not mentally capable of forming their own responses are excluded from this study and do not need to participate.

The survey can be found at this link:

[https://usu.co1.qualtrics.com/jfe/form/SV\\_5vwZa3wFxEbS8p7](https://usu.co1.qualtrics.com/jfe/form/SV_5vwZa3wFxEbS8p7)

If you have any questions or concerns regarding this study, please contact the researchers directly, not the school Special Education teachers. We appreciate your help in this important research. Thank you for your time and consideration.

Sincerely,

Emalee Brown  
Graduate Student  
Emalee.brown@aggiemail.usu.edu

Lacee Boschetto, Ph.D.  
Thesis Committee Chairperson  
Lacee.boschetto@usu.edu

Appendix E

Recruitment Email to Special Education Teachers With Non-Responsive  
Principals, Including Email to Parents/Guardians

Good Day,

My name is Emalee Brown and I am currently a graduate student with Utah State University. I am in the process of completing a thesis study (IRB #11583) on the impacts and effects of clothing on adolescents with physical disabilities or impairments (e.g., use of wheelchairs, crutches, braces, ports, ostomies, etc.). This study is intended to help increase awareness of how clothing effects the social participation and self-esteem of adolescents with disabilities. The results of this study will benefit future researchers on this topic, as well as those that work specifically with adolescents with disabilities.

After receiving permission from your district, I am contacting you directly to have your class participate in my study. I am emailing you with the study information and survey link for you to copy into a new email and send to all parents/guardians of students in your Special Education Program. After sending out the study information, there is nothing further that you need to complete at this time. Any questions or responses that are sent back to you from the parents/guardians must be forwarded back to the research team. There is to be no contact between you and the parents/guardians regarding this study outside of the email with the content below, in order to protect the integrity of the study protocol.

Thank you for your assistance in helping me complete my study. Please copy and paste the following in its entirety and send it on to the parents/guardians of your students:

Good Day,

**Please note that participation in this study is voluntary and will in no way affect the services provided to your student.**

My name is Emalee Brown. I am currently a graduate student completing a thesis through Utah State University (IRB #11583). Your student's teacher has been asked to pass along the information for my study. My thesis study examines the impacts and effects of clothing on adolescents with physical disabilities or impairments.

If your high school student is someone that fits the criteria of the study population, your student is asked to participate in the study. The study population includes, but is not limited to, the following situations:

- Currently uses a wheelchair, crutches, braces, or other mobility devices
- Currently has a port or colostomy bag
- Has other disabilities that affect use of their limbs or torso
- Has other physical disabilities or impairments that require, or would benefit from, the use of altered or adapted clothing

This survey is online through Qualtrics, and is designed to provide information on clothing, self-esteem, and social participation of adolescents with disabilities or

impairments. It includes questions regarding clothing purchasing, awareness of clothing designed for people with disabilities, how clothing impacts their social participation, and how clothing impacts how the adolescent feels about themselves. The survey will take approximately 10 minutes.

Below you will find the link to the survey. At the beginning of the survey you will find a parent informed consent form that you will need to electronically sign. After that, your student will need to sign another consent form, then the survey will begin. No follow-up commitment is required. If your student is not physically able to complete the survey by themselves, you may provide assistance in answering the questions. Students that are not mentally capable of forming their own responses are excluded from this study and do not need to participate.

The survey can be found at this link:

[https://usu.co1.qualtrics.com/jfe/form/SV\\_5vwZa3wFxEbS8p7](https://usu.co1.qualtrics.com/jfe/form/SV_5vwZa3wFxEbS8p7)

If you have any questions or concerns regarding this study, please contact the researchers directly, not the school Special Education teachers. We appreciate your help in this important research. Thank you for your time and consideration.

Sincerely,

Emalee Brown  
Graduate Student  
Emalee.brown@aggiemail.usu.edu

Lacee Boschetto, Ph.D.  
Thesis Committee Chairperson  
Lacee.boschetto@usu.edu

Appendix F

Follow-up Email to Teachers, Including Email to Forward to Parents/Guardians

Good Day,

Thank you, again, for your assistance in helping me complete my thesis study on “The Relationship of Adaptive Clothing on the Social Participation and Self-Esteem of Adolescents With Disabilities.” There is one more week to complete the survey. Please copy and paste the following reminder email in its entirety and send it on to the parents/guardians of your students. This is the last time your assistance will be needed. Thanks! Here’s the email to send to parents and guardians of your SPED students:

Hello Parents/Guardians,

**Please note that participation in this study is voluntary and will in no way affect the services provided to your student.**

This is a reminder email that there is still time for your student to complete the survey to assist me in my Master’s thesis through Utah State University (IRB #11583). My thesis study examines the impacts and effects of clothing on adolescents with physical disabilities or impairments. Your child’s responses will provide important socio-emotional data to understand how clothing affects adolescents. **The survey closes at 11:59 PM on Saturday, March 13<sup>th</sup>.**

If your high school student is someone that fits the criteria of the study population, your student is asked to participate in the study. The study population includes, but is not limited to, the following situations:

- Currently uses a wheelchair, crutches, braces, or other mobility devices
- Currently has a port or colostomy bag
- Has other disabilities that affect use of their limbs or torso
- Has other physical disabilities or impairments that require, or would benefit from, the use of altered or adapted clothing

This survey is online through Qualtrics, and is designed to provide information on clothing, self-esteem, and social participation of adolescents with disabilities or impairments. It includes questions regarding clothing purchasing, awareness of clothing designed for people with disabilities, how clothing impacts their social participation, and how clothing impacts how the adolescent feels about themselves. The survey will take approximately 10 minutes.

Below you will find the link to the survey. At the beginning of the survey you will find a parent informed consent form that you will need to electronically sign. After that, your student will need to sign another consent form, then the survey will begin. No follow-up commitment is required. If your student is not physically able to complete the survey by themselves, you may provide assistance in answering the questions. Students that are not mentally capable of forming their own responses are excluded from this study and do not need to participate.

The survey can be found at this link:

[https://usu.co1.qualtrics.com/jfe/form/SV\\_5vwZa3wFxEbS8p7](https://usu.co1.qualtrics.com/jfe/form/SV_5vwZa3wFxEbS8p7)

If you have any questions or concerns regarding this study, please contact the researchers directly, not the school Special Education teachers. We appreciate your help in this important research. Thank you for your time and consideration.

Sincerely,

Emalee Brown  
Graduate Student  
Emalee.brown@aggiemail.usu.edu

Lacee Boschetto, Ph.D.  
Thesis Committee Chairperson  
Lacee.boschetto@usu.edu



Appendix G

Email to Utah Foundations and Online Support Groups,  
Requesting Survey Distribution

Hello,

My name is Emalee Brown and I am currently a graduate student with Utah State University. I am in the process of completing a thesis study (IRB #11583) on the impacts and effects of clothing on adolescents with physical disabilities or impairments (e.g., use of wheelchairs, crutches, braces, ports, ostomies, etc.). This study is intended to help increase awareness of how clothing effects the social participation and self-esteem of adolescents with disabilities. The results of this study will benefit future researchers on this topic, as well as those that work specifically with adolescents with disabilities.

I am contacting you to ask for your help in distributing my survey to parents of children with disabilities. My research population includes teenagers, ages 13-17, that have a physical disability or impairment, or any other need for adaptive clothing. I am hoping you would be willing to include my survey information in a post on your social media page, or another form of communication with your group. The parents will then decide to have their adolescents participate or not.

I have already attempted to send my survey through the Utah school districts but despite my efforts, I only have 5 survey results. I am hoping that with your assistance in spreading the reach of my research survey, that I can gather enough data to conclude my thesis.

Please let me know if you would be willing or are able to help me in my research. Thank you for your time and consideration.

Sincerely,

Emalee Brown  
Graduate Student  
Emalee.brown@aggiemail.usu.edu

Lacee Boschetto, Ph.D.  
Thesis Committee Chairperson  
Lacee.boschetto@usu.edu

## Appendix H

Post for Foundation and Support Group Recruitment in Facebook Groups

Hello everyone,

My name is Emalee Brown and I am a graduate student at Utah State University. I am currently working on my thesis project about clothing and adolescents with disabilities. I tried reaching out to the school districts in Utah for their help with distributing my survey and received little success. I am in desperate need of more survey responses. If you have an adolescent that fits the criteria below, please consider having them complete my less-than-10-minutes survey. Here is the link to the survey: [https://usu.co1.qualtrics.com/jfe/form/SV\\_5vwZa3wFxEbS8p7](https://usu.co1.qualtrics.com/jfe/form/SV_5vwZa3wFxEbS8p7)

Thank you so much for your help!

**ADAPTIVE CLOTHING  
AND ADOLESCENTS  
STUDY**  
USU IRB 11583

IF YOUR CHILD IS BETWEEN THE AGES OF  
13-17 AND HAS THE FOLLOWING:

- WHEELCHAIR, CRUTCHES, BRACES, OR OTHER MOBILITY DEVICES
- PORT OR COLOSTOMY BAG
- OTHER DISABILITIES THAT AFFECT USE OF THEIR LIMBS OR TORSO
- HAS OTHER PHYSICAL DISABILITIES OR IMPAIRMENTS THAT REQUIRE, OR WOULD BENEFIT FROM, THE USE OF ALTERED OR ADAPTED CLOTHING

PLEASE HAVE YOUR CHILD PARTICIPATE IN THIS STUDY TO HELP US UNDERSTAND HOW CLOTHING AFFECTS ADOLESCENTS WITH DISABILITIES.

THE 10-MINUTE SURVEY IS LOCATED AT:  
[HTTPS://USU.CO1.QUALTRICS.COM/JFE/FORM/SV\\_5VWZA3WFXEBS8P7](https://usu.co1.qualtrics.com/jfe/form/SV_5vwZa3wFxEbS8p7)

FOR QUESTIONS, CONTACT THE RESEARCHER AT  
EMALEE.BROWN@AGGIEMAIL.USU.EDU