

Gendered Ableism: Media Representations and Gender Role Beliefs' Effect on Perceptions of Disability and Sexuality

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Abstract This study explored the impact of advertisements featuring individuals either with or without a physical disability on attitudes towards sexuality and disability. In addition, the authors sought to determine whether there is a relationship between these attitudes and endorsement of traditional versus egalitarian gender role beliefs. A total of 707 online participants completed the Gender Role Belief Scale, then rated a series of ads featuring individuals with or without a disability (or served as a no ad control), and completed the Attitudes toward Sexuality Questionnaire and Perceptions of Sexuality Scale. Results demonstrated a complex relationship between gender role beliefs and exposure to advertisements on attitudes towards the sexuality of women and men with physical disabilities. As hypothesized, the endorsement of traditional gender role beliefs was related to more negative attitudes towards the sexuality of women with physical disabilities.

Keywords Disability · Sexuality · Gender roles · Media · Advertisements · Attitudes · Canada

Introduction

Ableism is most often used to describe the negative treatments of individuals with disability; defined more broadly, ableism is a set of “beliefs, processes and practices that produce a particular understanding of oneself, one’s body, and one’s relationship with

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others, based on the abilities one values or exhibits” [21, p. 253]. Individuals with disabilities are largely ignored by mainstream media. When shown, they are often portrayed as dependent and asexual. These misrepresentations lead to societal misconceptions about what it is like to live with a disability. In particular, the one-dimensional portrayals of men and women seen in the media are often reflective of the attitudes held by individuals with traditional gender role ideologies [10]. Therefore, the purpose of this study was to explore the impact of advertisements featuring individuals both with, and without, a physical disability—defined as any impairment which limits the physical function of one or more limbs or fine or gross motor ability—on attitudes towards sexuality and disability to determine whether there is a relationship between the endorsement of traditional gender role beliefs and ableism. We believe that endorsement of traditional gender role ideologies may be correlated with negative attitudes towards the sexuality of women with physical disabilities due to their perceived violation of gender roles. Furthermore, we hypothesize that exposure to advertisements featuring individuals who are able-bodied will increase negative attitudes towards the sexuality of women with physical disabilities among those who endorse traditional gender role beliefs; when these same individuals are exposed to advertisements featuring individuals with a physical disability, it is expected that their attitudes will become even more negative.

The Effects of Media on Perceptions of Gender and Disability

Mass media are a major part of the lives of many children, adolescents, and adults [17]. While many people select and use media for entertainment and distraction, it is also used for the exploration of developmental issues pertaining to curiosity, education, identity, and sexuality [12]. Whether intentional or not, advertising images indoctrinate developing boys and girls with messages that encourage the stigmatization and marginalization of anyone who is deemed not attractive or beautiful enough to be included in mass media imagery [12]. The ways in which individuals with disability are portrayed (or not portrayed) in advertising reflect not only our attitudes, but also our prejudices [1].

One of the most damaging factors related to prejudice is invisibility, perpetuated by the mass media through under-representation. Individuals with disability are largely ignored in mainstream advertising and other forms of media, which only serves to further isolate and stigmatize this group [1]. A study of diversity in television conducted by GLAAD found that only one percent of regular characters on American broadcast TV had one or more disabilities, compared to 12% of the US and Canadian populations [7]. The under-representation and invisibility of individuals with physical disabilities in all forms of media further contributes to marginalization. Although it may follow that increased exposure to individuals with disabilities in the media would create more positive attitudes, there has been no research investigating this assumption.

In a preliminary investigation, we exposed participants to advertisements featuring either individuals with physical disabilities, or individuals who were able-bodied, hypothesizing that exposure to ads with disabilities would increase participants’ acceptance of sexuality among individuals with physical disabilities. The ads featuring able-bodied individuals were categorized as “fitness advertisements,” which featured individuals in peak physical condition. A second set of ads featured individuals with physical disabilities. We chose ads based on their content and actively avoided any advertisements that explicitly discussed the individual’s disability and how it had been “overcome” (a

common theme seen in ads promoting charities or events such as the Paralympics). Later, when participants filled out measures designed to assess attitudes towards disability and sexuality, it was found that the ads featuring able-bodied individuals produced more negative attitudes when compared to the no ad control. Therefore, whereas under-representation of disability in the media may perpetuate negative attitudes regarding sexuality among individuals with physical disabilities, simply increasing media exposure may not be effective in producing more positive attitudes. The present study was designed to further investigate these effects.

Clearly, disability is an extremely stigmatizing phenomenon, the effects of which are even more profound when combined with women's societal devaluation. Certainly, women are also under-represented in media—in film, for instance—by a factor of four to one compared to their male counterparts [22]. The media consistently misrepresent actual proportions of men and women in the population, a distortion which leads some individuals to believe that men outnumber women and are therefore the cultural standard [23]. Further, media exposure has been shown to be related to motivations to self-compare with mediated characters, which increase the social comparison process and, in turn, lead to lowered body image perceptions [5]. Indeed, there is clear evidence suggesting that the media's typical portrayal of women in advertising has a negative effect on the way women feel about themselves [8]. So not only are women under-represented in the media, when they are represented, it serves primarily to reinforce the idealized female body as the societal standard.

Thus, women with disabilities are marginalized both because of their status as disabled and also because of their gender. The cross section of discrimination based on both disability and gender has serious implications for women with disabilities in that they are effectively rendered powerless by society [20]. Based on the dual oppression faced by women with physical disabilities, as well as the effect of media and advertising on the social comparison process, we hypothesized that the negative attitudes that followed exposure to ads featuring individuals with physical disabilities may have been due to women with disabilities' perceived inability to adhere to society's strict gender role expectations surrounding marriage. For example, a mother or wife with a disability may be seen as violating gender norm expectations due to her need for assistance in performing day to day activities, such as preparing meals or changing diapers. Although this hypothesis has not yet been explicitly examined in the literature, research nonetheless suggests that women and men continuously act out membership in their appropriate gender category, and are expected to submit to traditional gender ideologies in ways that are construed by society as natural [14].

If, as we suggest, perceived violation of gender role norms is one reason for negative attitudes toward individuals with physical disabilities engaging in sexual activity, then we would expect individuals with traditional gender role beliefs to hold more negative attitudes than those with more egalitarian beliefs. Indeed, research has shown prejudices against those viewed as gender deviant are most pronounced in individuals with traditional gender role attitudes [14]. For example, research has shown a correlation between traditional gender ideologies and homophobic attitudes; individuals with traditional gender role attitudes tend to express higher levels of homophobia [14] and are more negative in their evaluations of individuals who violate traditional gender role expectations, regardless of sexual orientation [15]. Rather than normalizing disability then, media images of women with disabilities may only serve to make salient these perceived gender role violations in the eyes of individuals with traditional gender role beliefs. Therefore, the present study

includes a measure of gender role beliefs to examine how individuals with different beliefs respond to ads featuring men and women with disabilities.

In sum, the purpose of this study was to determine the effects of exposure to ads featuring images of men and women both with, and without, physical disabilities on attitudes toward the sexuality of individuals with disabilities among participants with traditional versus egalitarian gender role beliefs. We expected that traditional participants' attitudes towards the sexuality of individuals with physical disabilities would be more negative relative to egalitarian participants' attitudes. Further, we hypothesized that traditional participants would express more negativity towards the sexuality of women with physical disabilities than toward men with physical disabilities. We also hypothesized that traditional participants' attitudes would be more strongly impacted by the advertisements in that the ads featuring disability would influence them to report more negativity toward the sexuality of women with disabilities. In contrast, we expected that egalitarian participants' attitudes would be largely unaffected by advertisement exposure.

Method

Design

This study employed a 3 (ad condition: Advertisements featuring able-bodied individuals, advertisements featuring individuals with physical disabilities, no advertisement exposure) \times 2 (participant gender), \times 2 (gender of individual with physical disability) \times 2 (traditional vs. egalitarian participant) factorial design. The dependent variables included the Perceptions of Sexuality Scale (PSS; [19]) and the Attitudes to Sexuality Questionnaire (ASQ; Individuals with a Severe Physical Disability) (adapted from [4]).

Participants

Participants were recruited by way of recruitment posters at local colleges and universities in a large, Western Canadian city, as well as from multiple online communities dedicated to research participant recruitment (i.e., Reddit, Crowdfunder, and Social Psychology Network). The recruitment websites and their sub-communities (e.g., r/psych, r/academicpsychology, r/samplesize) were selected based on their reputation as reliable sources for participant recruitment. In an effort to obtain as large and diverse a representation as possible, we used these online communities to recruit English speaking participants 18 years and older, resulting in a final sample including 707 participants (361 female, 341 male, 5 other). Participants ranged in age from 18 to 78 years, with a mean and median age of 27.86 ($SD = 9.70$) and 25 years, respectively. Participants represented 64 countries recruited from every populated continent.¹ Twenty-five percent indicated that they knew

¹ Every province in Canada was represented, excluding Prince Edward Island. Every US state, including the District of Columbia, was represented, excluding Wyoming, North Dakota, and Mississippi. Globally, participants were recruited from Algeria, Argentina, Australia, Austria, Belgium, Bosnia, Brazil, Bulgaria, China, Chile, Columbia, Croatia, Czech Republic, Denmark, Dominican Republic, Estonia, Finland, France, French Guyana, Germany, Greece, Egypt, El Salvador, Finland, Honduras, Hong Kong, Hungary, India, Indonesia, Ireland, Italy, Japan, Kazakhstan, Kuwait, Madagascar, Malaysia, Mexico, Morocco, Norway, Netherlands, New Zealand, Pakistan, Peru, Poland, Portugal, Puerto Rico, Republic of Serbia, Romania, Russia, Saudi Arabia, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, Ukraine, United Kingdom, and Venezuela.

someone with a physical disability. Of these individuals, 7% indicated close contact with this person and 19% rated their interactions with this person as positive or very positive.

Measures

The first part of the study, “Perceptions of Ads II,” consisted of the Gender Role Beliefs Scale [11] and an ad rating questionnaire.

The Gender Role Beliefs Scale (GRBS; [11])

This scale consists of twenty questions pertaining to attitudes towards gender roles of both men and women (e.g., “Some equality in marriage is good, but by and large the husband ought to have the main say-so in family matters” and “I see nothing wrong with a woman who doesn’t like to wear skirts or dresses”) rated on a 7-point Likert-type scale ranging from 1 (*very much disagree*) to 7 (*very much agree*). Because initial Cronbach’s alpha for the GRBS was poor ($\alpha = .59$), two items were removed due to poor item-total correlations. After removal of the items, “Homosexual relationships should be as socially accepted as heterosexual relationships” ($r = .006$) and “I like women who are outspoken” ($r = -.057$), Cronbach’s alpha increased to an acceptable .70. The scores on the GRBS were initially intended to divide participants into three groups; traditional, undifferentiated, and egalitarian. Due to unequal sample sizes, however, we instead chose to utilize a median split that divided the participants into two dichotomous categories; traditional and egalitarian. Traditional gender role ideologies are those that reinforce or adhere to expected differences in roles for men and women, while an egalitarian gender role ideology emphasizes equality in home activities and work roles [18]. Analyses showed that the two groups differed in the predicted direction on both measures of attitudes toward sexuality among individuals with physical disabilities, a finding which validates the use of a median split procedure.

Ad Rating Questionnaire

The ad rating questionnaire asked participants to rate ads for interest, product information, design, and persuasiveness on 7-point Likert scales. As the ad rating task was part of a deception to prevent participants from recognizing the connection between the ads and subsequent attitude measures, the ad rating data were not analyzed.

The second part of the study, entitled “Student Beliefs about Sexuality,” was comprised of the Attitudes to Sexuality Questionnaire (Individuals with a Severe Physical Disability) (adapted from [4]), the Perceptions of Sexuality Scale [19], and a demographics questionnaire.

Attitudes to Sexuality Questionnaire (Individuals with a Severe Physical Disability) (ASQ; [4])

The focus of the ASQ is on sexual rights for individuals with physical disabilities. The scale consists of 34 Likert scale questions designed to assess attitudes towards sexual rights, parenting, non-reproductive sexual behaviour and sexual dysfunction. The ASQ includes issues such as the right to get married, have children, and receive sexual education. The original questionnaire was developed to ascertain attitudes to sexuality in

adults with an intellectual disability. In the present study, the items were changed in order to elicit optimal reliability; the phrase “individuals with an intellectual disability” was replaced with “women/men with a severe physical disability” in order to reliably measure attitudes towards individuals with a physical disability. Two of the items in the questionnaire were altered to better reflect issues surrounding problems faced by those with physical disabilities (such as changing questions about one’s level of *emotional* development and instead examining one’s *physical* development). The five-point rating scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The results of the scale were summed and averaged, with a score of 5 representing significantly more positive, or accepting, attitudes. The resulting Cronbach’s alpha was .93.

Perceptions of Sexuality Scale (PSS; [19])

As a measure of perceptions of attitudes towards the sexuality of individuals with physical disability, the PSS focuses specifically on sexual behaviours. This 29-item measure includes a variety of male–female and same gender sexual behaviours ranging from holding hands in public to fondling and anal intercourse, as well as both risky (e.g., oral, anal, and vaginal intercourse without a condom) and safer (e.g., intercourse with a condom) sexual behaviours. The PSS was prefaced by one of two sets of instructions: “Please indicate on a five-point scale how acceptable you feel each of the following behaviours are for...,” followed by either “... men with a severe physical disability which has substantial and long term effects on their ability to carry out day-to-day activities” or “... women with a severe physical disability which has substantial and long term effects on their ability to carry out day-to-day activities”. The definition of physical disability was defined as “any impairment which limits the physical function of one or more limbs or fine or gross motor ability”. The five-point rating scale ranged from 1 (*not at all acceptable*) to 5 (*totally acceptable*). Scores were summed and averaged with a score of 5 indicating significantly more positive, or accepting, attitudes. Cronbach’s alpha was .97. The gender of the individual with a physical disability was randomized (e.g., “Women with severe physical disabilities have the right to marry” vs. “Men with severe physical disabilities have the right to marry”) and was utilized as a between-subjects factor.

Demographic Questionnaire

The demographics questionnaire included items asking age, gender, degree of contact with individuals with physical disabilities and the extent to which interactions had been positive or negative, as well as frequency of magazine reading.

Procedure

Participants were informed that the title of this study was “Perception of Ads II” and the purpose was to investigate how individuals perceive different advertisements. Participants were directed to an online survey using the survey software Fluid Surveys. Participants first completed the Gender Role Beliefs Scale [11] and then were randomly assigned to either able-bodied, disabled, or no ad conditions.

Participants in the ad conditions viewed ten ads respective of their assigned condition. The advertisements featured roughly equal numbers of males and females, photographed both separately and together (able-bodied ads: 4 females, 3 males, 3 male and female;

disabled ads: 6 female, 4 male). Best efforts were made to ensure that the individuals in both ads were the around the same age (25–30 years). Forty percent of the able-bodied ads featured a visible minority. However, due to the difficulties in finding ads featuring individuals with disabilities, no minorities were present in any of these ads. All able-bodied images featured individuals in peak physical form, often completing tasks that require extraordinary strength (i.e., yoga positions). Many of the ads featuring individuals with disabilities also focused on fitness (e.g., Paralympic athletes), although due to the scarcity of ads featuring individuals with disabilities, some images were taken from editorial spreads in fashion magazines.

Participants indicated their ratings of each ad on the ad rating questionnaire. This rating task served only as a filler to disguise the true purpose of the ads; the ratings were not of interest. This component of the study was designed to ensure participants attended closely to the ads in their condition and, as a result, were optimally exposed to the stimulus. After completing the rating task, participants were thanked for their contributions and informed that the study had concluded.

Immediately following, all participants were given an opportunity to participate in an additional study entitled, “Student Beliefs about Sexuality.” Again, the actual study was presented as two separate studies in order to evoke a belief that the two sets of tasks were unrelated. Each participant then completed the revised Attitudes to Sexuality Questionnaire (Individuals with a Severe Physical Disability) (adapted from [4]) female or male version, the Perceptions of Sexuality Scale [19] female or male version, and the demographics questionnaire.

Participants assigned to the no ad condition were informed that we were no longer accepting participants for ad ratings—but that they still needed to complete the Gender Role Beliefs Scale in order to establish a baseline measure of attitudes of university students—and were asked to instead participate in a different, unrelated study entitled, “Student Beliefs about Sexuality”, which was the same second study completed by those in the ad conditions. Completion of the entire study took approximately 40 min.

Results

To examine how gender role beliefs and type of advertisements (able-bodied vs. disability vs. no ad) influence perceptions of sexuality and disability, separate 2 (gender of participant) \times 2 (disability gender) \times 2 (gender role belief of participant) \times 3 (ad condition) ANOVAs were run on the ASQ and PSS² (see Table 1). Checks of assumptions revealed no issues with homogeneity of variance. Small sample sizes for some cells and violations of normality for both dependent variables required the use of bootstrapping [6].³ Means, cell sizes, and standard deviations based on 1000 bootstrapped samples are presented in Table 2. The *LSD* procedure was used for post hoc comparisons unless noted otherwise. See Table 3 for a summary of significant effects.

² Initial analyses were conducted using MANOVA, however a significant Box’s *M* ($p < .001$), in combination with unequal sample sizes, led us to conclude that the MANOVA effects were likely unreliable and are therefore not reported.

³ Analysis utilizing traditional ANOVA revealed results identical to our bootstrapped findings. We report bootstrapped results because robust statistics are preferred when there are violations to assumptions of normality [6].

Attitudes to Sexuality Questionnaire (ASQ)

Results of a 2 (participant gender) \times 2 (disability gender) \times 2 (gender role belief of participant) \times 3 (ad condition) ANOVA revealed a significant main effect for gender, $F(1, 678) = 102.78, p < .001$; partial $\eta^2 = .13$. Bootstrapped analyses indicated that female participants reported significantly more positive attitudes ($M = 4.02, 95\% \text{ BCa CI } [3.95, 4.09]$) than male participants ($M = 3.50, 95\% \text{ BCa CI } [3.43, 3.57]$), suggesting that females are more accepting of the sexual rights of individuals with physical disabilities than are males, $d = .75$. In addition, a significant main effect for gender role belief of participant was also revealed, $F(1, 678) = 12.19, p = .001$; partial $\eta^2 = .018$. Participants who reported a more egalitarian attitude toward gender roles displayed significantly more positive attitudes ($M = 3.85, 95\% \text{ BCa CI } [3.78, 3.93]$) toward the sexuality of men and women with physical disabilities than participants with a more traditional gender role ideology ($M = 3.67, 95\% \text{ BCa CI } [3.61, 3.73]$), $d = .26$.

A significant main effect for ad condition was also obtained on the ASQ, $F(2, 678) = 4.18, p = .016$; partial $\eta^2 = .012$. Bootstrapped pairwise comparisons revealed that participants in the able-bodied ad condition ($M = 3.82, 95\% \text{ BCa CI } [3.74, 3.90]$), $p = .007, d = .25$, and the disabled ad condition ($M = 3.81, 95\% \text{ BCa CI } [3.72, 3.89]$), $p = .016, d = .23$, had significantly more positive attitudes towards the sexuality of individuals with physical disabilities than those in the no ad condition ($M = 3.65, 95\% \text{ BCa CI } [3.57, 3.73]$). These main effects, however, are qualified by significant higher-order interactions.

A significant interaction between disability gender and gender role belief of the participant was also revealed, $F(2, 678) = 26.54, p < .001$; partial $\eta^2 = .038$. Egalitarian participants reported significantly more positive attitudes towards the sexuality of women with physical disabilities ($M = 3.95, 95\% \text{ BCa CI } [3.85, 4.86]$) than they did for men with disabilities ($M = 3.75, 95\% \text{ BCa CI } [3.65, 3.85]$), $p = .002, d = .29$. However, participants identified as having a more traditional ideology reported significantly more positive attitudes towards the sexuality of men with physical disabilities ($M = 3.83, 95\% \text{ BCa CI } [3.74, 3.91]$) than they did women ($M = 3.51, 95\% \text{ BCa CI } [3.43, 3.60]$), $p < .001, d = .46$.

A significant interaction between ad condition and gender of participant was also found on the ASQ, $F(2, 678) = 4.91, p = .008$; partial $\eta^2 = .014$. Women in all three ad conditions reported significantly more positive attitudes than men, all $ps < .004$. This effect was qualified by a significant three way interaction between ad condition, disability gender, and gender of participant, $F(2, 678) = 4.38, p = .013$; partial $\eta^2 = .013$ (see Figs. 1, 2). Bootstrapped post hoc comparisons indicated that for female participants, viewing able-bodied and disabled ads created more positive attitudes compared to no ads, regardless of disability gender, all $p < .002$. Among male participants, viewing ads featuring individuals with disabilities ($M = 3.67, 95\% \text{ BCa CI } [3.43, 3.91]$) also created more positive attitudes about the sexuality of men with disabilities compared to the no ad condition ($M = 3.36, 95\% \text{ BCa CI } [3.24, 3.48]$), $p = .016, d = .45$. When the disability gender was female, the opposite pattern was seen; male participants reported more negative attitudes in the disabled ad condition ($M = 3.36, 95\% \text{ BCa CI } [3.21, 3.51]$) compared to the no ad condition ($M = 3.66, 95\% \text{ BCa CI } [3.51, 3.82]$), $p = .006, d = .43$.

The four way interaction between all independent variables was also significant, $F(2, 678) = 3.27, p = .039$; partial $\eta^2 = .01$. This interaction indicates that the 3-way interaction of ad condition, disability gender, and gender role belief is different for female and

Table 1 ANOVA results displaying the effects of the independent variables on each dependent variable

Measure	Effect	<i>F</i>	<i>p</i>	η^2
ASQ	TradEgal	12.19	.001*	.018
	AdCondition	4.18	.016*	.012
	DisabilityGender	1.17	.279	.002
	Gender	102.78	.000*	.132
	TradEgal*AdCondition	2.73	.066	.008
	TradEgal*DisabilityGender	26.54	.000*	.038
	TradEgal*Gender	1.66	.198	.251
	AdCondition*DisabilityGender	1.58	.206	.005
	AdCondition*Gender	4.91	.008*	.014
	DisabilityGender*Gender	.41	.525	.001
	TradEgal*AdCondition*DisabilityGender	2.41	.091	.007
	TradEgal*AdCondition*Gender	.24	.788	.001
	TradEgal*DisabilityGender*Gender	.60	.439	.001
	AdCondition*DisabilityGender*Gender	4.40	.013*	.013
TradEgal*AdCondition*DisabilityGender*Gender	3.27	.039*	.010	
PSS	TradEgal	2.40	.122	.340
	AdCondition	.10	.902	.000
	DisabilityGender	.23	.630	.000
	Gender	61.99	.000*	.084
	TradEgal*AdCondition	3.52	.030*	.010
	TradEgal*DisabilityGender	4.90	.027*	.007
	TradEgal*Gender	1.66	.198	.251
	AdCondition*DisabilityGender	.78	.459	.084
	AdCondition*Gender	1.83	.161	.005
	DisabilityGender*Gender	.967	.326	.001
	TradEgal*AdCondition*DisabilityGender	2.96	.053*	.009
	TradEgal*AdCondition*Gender	1.37	.256	.004
	TradEgal*DisabilityGender*Gender	.17	.681	.000
	AdCondition*DisabilityGender*Gender	1.16	.315	.003
TradEgal*AdCondition*DisabilityGender*Gender	1.53	.216	.005	

ASQ Attitudes to Sexuality Questionnaire (individuals with a severe physical disability), PSS Perceptions of Sexuality Scale; * $p < .05$

male participants (see Table 2). Because of the many pairwise comparisons at this level, they were evaluated using a more conservative alpha (.01) in order to protect against familywise Type I error. Bootstrapped post hoc comparisons revealed that ads featuring individuals with physical disabilities increased the attitudes of traditional male participants towards the sexuality of men with physical disabilities. Traditional male participants showed significantly more positive attitudes in the disabled ad condition ($M = 3.80$, 95% BCa CI [3.47, 4.12]), when compared to those in the no ad condition ($M = 3.24$, 95% BCa CI [3.12, 3.39]), $p = .002$, $d = .81$. The ads did not have any effect on the attitudes towards the sexuality of men for traditional female participants.

Table 2 Descriptive statistics for the Perceptions of Sexuality Scale and the Attitudes to Sexuality Questionnaire (individuals with a severe physical disability)

	Trad/Egal	Ad condition	Disability gender	Subject gender	<i>M</i>	<i>SD</i>	<i>n</i>	95% CI
ASQ	Egalitarian	No Ad	Male	Female	3.74	.556	19	3.50–4.00
				Male	3.47	.605	32	3.25–3.69
				Female	4.15	.591	33	3.91–4.37
			Able bodied	Male	3.88	.718	39	3.65–4.13
				Female	4.24	.542	22	4.01–4.45
				Male	3.56	.671	33	3.34–3.81
		Disabled	Male	Female	4.21	.760	21	3.84–4.51
				Male	3.68	.687	27	3.45–3.95
				Female	3.92	.735	43	3.73–4.13
			Female	Male	3.54	.617	15	3.24–3.85
				Female	4.20	.572	35	3.97–4.40
				Male	3.61	.655	27	3.34–3.88
	Traditional	No Ad	Male	Female	4.02	.562	31	3.82–4.21
				Male	3.24	.473	41	3.12–3.39
				Female	3.27	.359	5	3.03–3.59
			Able bodied	Male	3.44	.612	29	3.24–3.66
				Female	4.15	.562	35	3.95–4.34
				Male	3.47	.606	31	3.29–3.68
		Disabled	Male	Female	4.04	.514	44	3.88–4.19
				Male	3.23	.454	25	3.07–3.41
				Female	4.30	.570	48	4.11–4.47
			Female	Male	3.80	.685	15	3.47–4.12
				Female	3.99	.637	25	3.76–4.24
				Male	3.10	.388	27	2.98–3.26
PSS	Egalitarian	No Ad	Male	Female	4.03	.996	19	3.53–4.46
				Male	3.61	1.123	32	3.20–4.02
				Female	4.44	.583	33	4.22–4.65
			Able bodied	Male	4.20	.578	39	4.01–4.36
				Female	4.49	.571	22	4.22–4.70
				Male	3.80	.773	33	3.52–4.08
		Disabled	Male	Female	4.19	.990	21	3.70–4.61
				Male	3.83	.975	27	3.46–4.18
				Female	4.01	.923	43	3.70–4.27
			Female	Male	3.52	.983	15	2.99–4.00
				Female	4.39	.883	35	4.05–4.64
				Male	3.64	1.16	27	3.18–4.07
	Traditional	No Ad	Male	Female	4.39	.643	31	4.17–4.58
				Male	3.49	.883	41	3.21–3.77
				Female	3.69	1.02	5	2.76–4.63
			Female	Male	3.57	.926	29	3.20–3.89

Table 2 continued

Trad/Egal	Ad condition	Disability gender	Subject gender	<i>M</i>	<i>SD</i>	<i>n</i>	95% CI
	Able bodied	Male	Female	4.32	.754	35	4.02–4.57
			Male	3.43	1.15	31	3.03–3.83
		Female	Female	4.40	.690	44	4.17–4.59
			Male	3.27	1.02	25	2.90–3.65
	Disabled	Male	Female	4.36	.888	48	4.11–4.59
			Male	3.78	.957	15	3.27–4.22
		Female	Female	4.27	.759	25	3.90–4.56
			Male	3.78	.925	27	3.42–4.12

ASQ Attitudes to Sexuality Questionnaire (individuals with a severe physical disability), *PSS* Perceptions of Sexuality Scale. CI based on 1000 bootstrapped samples

Table 3 Summary of significant effects

Measure	Results
<i>ASQ</i>	Women held significantly more positive attitudes than men
	Egalitarian participants held more positive attitudes towards the sexuality of men and women with physical disabilities than participants with a more traditional gender role ideology
	Participants in the able-bodied and disabled ad conditions held significantly more positive attitudes towards the sexuality of individuals with physical disabilities than those in the no ad condition
	Egalitarian participants held more positive attitudes towards the sexuality of women with physical disabilities than they did for men with disabilities
	Traditional participants reported significantly more positive attitudes towards the sexuality of men with physical disabilities than they did women
	Women in all three ad conditions reported significantly more positive attitudes
	Women who viewed able-bodied and disabled ads reported more positive attitudes compared to those who viewed no ads regardless of disability gender
	Men who viewed ads featuring individuals with disabilities reported more positive attitudes about the sexuality of men with disabilities compared to those who viewed no ads
	Men reported more negative attitudes towards women with physical disabilities when viewing ads featuring disabled individuals compared to those who viewed no ads
	<i>PSS</i>
Egalitarian participants held more positive attitudes than those with a more traditional gender role ideology in the no ad control condition	
Egalitarian participants in the disabled ad condition reported significantly more negative attitudes toward men with a physical disability than those in the able-bodied ad condition	
Egalitarian participants in the disabled ad condition reported significantly more negative attitudes toward women with a physical disability than those in the no ad condition	

ASQ Attitudes to Sexuality Questionnaire (individuals with a severe physical disability), *PSS* Perceptions of Sexuality Scale

The able-bodied ads increased acceptance of the sexuality of men with physical disabilities for egalitarian female participants. Egalitarian women reported significantly more positive attitudes on the *ASQ* in the able-bodied ad condition ($M = 4.24$, 95% BCa CI

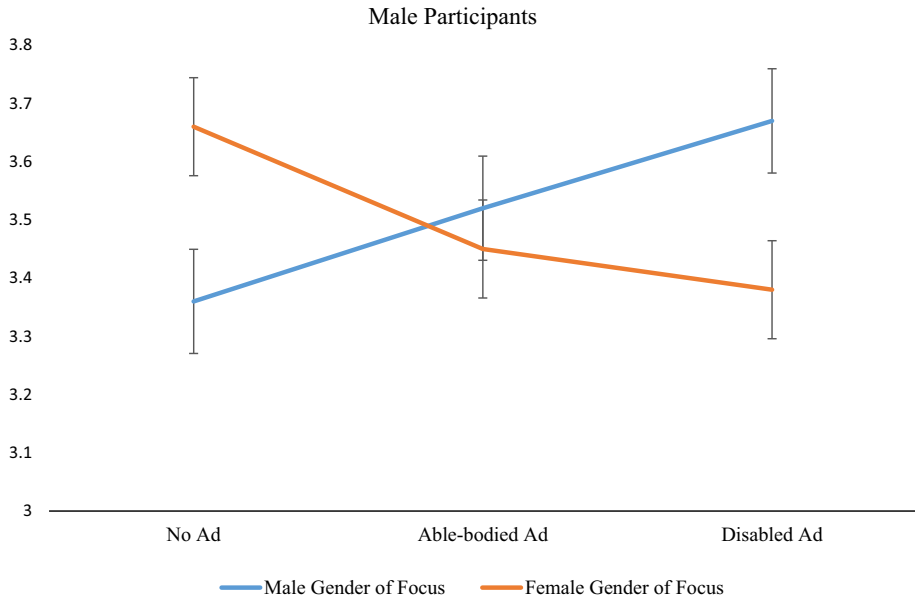


Fig. 1 Three-way interaction effect on the ASQ for males. *Note:* Bars represent standard error. When gender of focus was male, the no ad and disabled ad conditions were significantly different at $p = .016$. When gender of focus was female, the no ad and disabled ad conditions were significantly different at $p = .006$

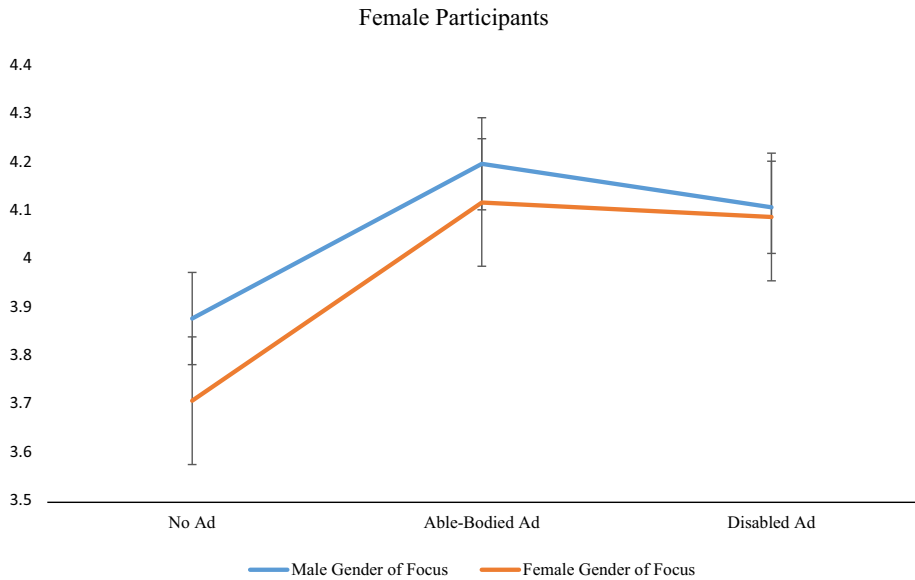


Fig. 2 Three-way interaction effect on the ASQ for females. *Note:* Bars represent standard error. When gender of focus was male; no ad and able-bodied ad conditions were significantly different at $p = .008$, and no ad and disabled ad conditions were significantly different at $p = .032$. When gender of focus was female; no ad and able-bodied ad conditions were significantly different at $p = .012$, while no ad and disabled ad conditions were significantly different at $p = .019$

[4.01, 4.45]) when compared to the no ad condition ($M = 3.74$, 95% BCa CI [3.50, 4.00]), $p = .008$, $d = .72$. No such pattern was observed for attitudes towards the sexuality of women with physical disabilities. The ads did not have any effect on egalitarian male participants' attitudes towards the sexuality of men or women with physical disabilities. For traditional female participants, the ads did not have any effect on attitudes towards the sexuality of women with physical disabilities.

Perceptions of Sexuality Scale (PSS)

A 2 (participant gender) \times 2 (disability gender) \times 2 (gender role belief of participant) \times 3 (ad condition) ANOVA revealed a significant main effect of gender, $F(1, 678) = 61.99$, $p < .001$; partial $\eta^2 = .084$. Female participants reported significantly more positive attitudes of sexuality ($M = 4.27$, 95% BCa CI [4.13, 4.37]) than male participants ($M = 3.66$, 95% BCa CI [3.55, 3.76]), $d = .65$. A significant interaction between ad condition and gender role belief of participant was also found, $F(2, 678) = 3.53$, $p = .027$; partial $\eta^2 = .01$. Bootstrapped post hoc comparisons indicated that participants with egalitarian gender role beliefs in the no ad condition reported significantly more positive attitudes ($M = 4.07$, 95% BCa CI [3.90, 4.23]), than those with a more traditional gender role ideology ($M = 3.78$, 95% BCa CI [3.52, 4.04]), $p = .047$, $d = .31$. Traditional and egalitarian participants did not differ in either of the other ad conditions. However, a significant interaction between traditional and egalitarian participants and disability gender was found, $F(2, 678) = 4.90$, $p = .027$; partial $\eta^2 = .007$. Egalitarian participants reported significantly more negative attitudes towards the sexuality of men with physical disabilities ($M = 3.91$, 95% BCa CI [3.74, 4.05]) than they did women with physical disabilities ($M = 4.11$, 95% BCa CI [3.98, 4.26]), $p = .043$, $d = .21$. The opposite was found for traditional participants. Participants with more traditional gender role beliefs reported significantly more negative attitudes towards women with physical disabilities ($M = 3.83$, 95% BCa CI [3.63, 4.01]) than they did men with physical disabilities ($M = 3.97$, 95% BCa CI [3.83, 4.09]), $d = .15$.

The preceding effects must be interpreted within the context of a significant three way interaction of ad condition by disability gender by gender role of participant, $F(2, 678) = 2.96$, $p = .053$; partial $\eta^2 = .01$ (see Fig. 3). When the disability gender was male, egalitarian participants in the disabled ad condition ($M = 3.77$, 95% BCa CI [3.43, 4.03]) reported significantly more negative attitudes than those in the able-bodied ad condition ($M = 4.14$, 95% BCa CI [3.96, 4.32]), $p = .035$, $d = .39$. When the disability gender was female, egalitarian participants in the disabled ad condition ($M = 4.01$, 95% BCa CI [3.72, 4.27]), reported significantly more negative ($p = .044$, $d = .33$) attitudes than those in the no ad condition ($M = 4.32$, 95% BCa CI [4.18, 4.44]). Nevertheless, in the disabled ad condition, attitudes toward women with disabilities did not differ from attitudes toward men with disabilities. Therefore, among egalitarian participants, ads featuring disabilities were associated with less favourable attitudes toward both men and women with disabilities engaging in a variety of sexual activities. In contrast, traditional participants' attitudes toward the sexual activities of individuals with physical disabilities were unaffected by the ad conditions.

Power Analysis

As a final check on the results, we conducted a post hoc power analysis to determine power where ANOVA effects were nonsignificant. Given our sample size, variance, and alpha

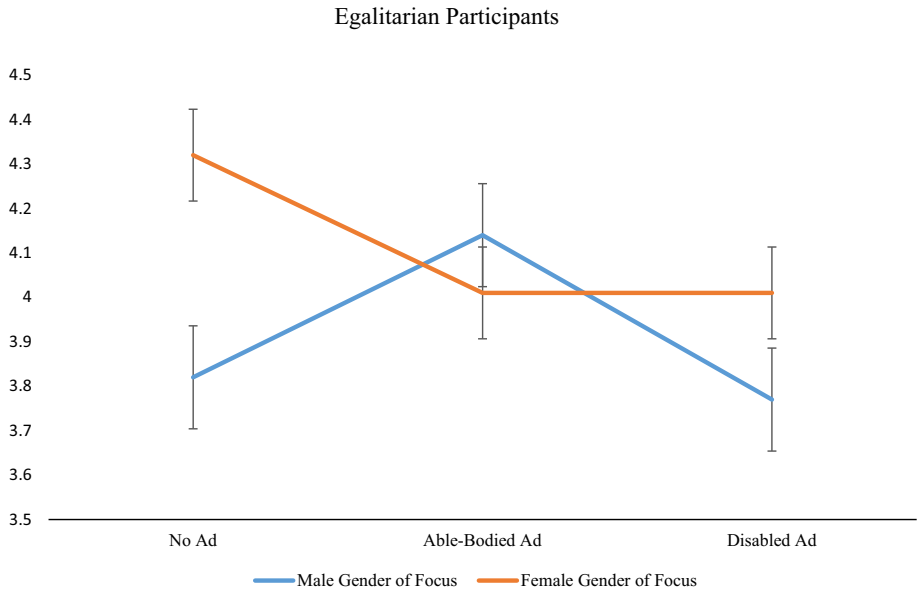


Fig. 3 Three-way interaction effect on the PSS for participants with egalitarian views. *Note:* Bars represent standard error. When gender of focus was male, able-bodied and disabled ad conditions were significantly different at $p = .035$. When gender of focus was female, no ad and disabled ad conditions were significantly different at $p = .044$

(.05), our ability to detect a medium effect, using Cohen's criteria, was either .99 or 1.00 for every nonsignificant main effect and interaction on both measures, except one, where it was .93. Even for a small effect, power ranged from .60 to .65 on the ASQ, and from .65 to .95 on the PSS. Where we failed to find significance, then, it is extremely unlikely that we missed any medium sized effects, and quite unlikely that we missed even small effects.

Discussion

The purpose of this research was to determine how gender role beliefs and ads featuring individuals both with, and without, physical disabilities affect attitudes toward the sexuality of women and men with disabilities. We hypothesized that participants with traditional gender role beliefs would hold more negative attitudes than egalitarians in regard to the sexual behaviours and reproductive rights of individuals with physical disabilities—and in particular toward women with physical disabilities—due to the perceived inability of women with physical disabilities to live up to societal expectations regarding femininity and motherhood. In addition, we expected that ads featuring able-bodied individuals and those with physical disabilities would activate these beliefs and further increase negative attitudes among traditional participants. Finally, we hypothesized that the ads would have no impact on the attitudes of egalitarian participants, for whom equal rights are given higher priority.

Overall, the results provided support for the hypothesis that individuals with traditional gender role beliefs have more negative attitudes towards the sexuality of individuals with physical disabilities than do those with egalitarian gender role beliefs. This was apparent in

attitudes toward individuals with physical disabilities engaging in various sexual acts, as well as attitudes toward reproductive rights for individuals with physical disabilities. The hypothesis that traditional participants would hold more negative attitudes towards the sexuality of *women* with physical disabilities than men with physical disabilities was also supported on the measure of reproductive rights, but not on the measure of sexual practices. These results provide partial support for the notion that women with physical disabilities are confronted with a dual oppression in regard to the expression of their sexuality—at least among those who espouse traditionalist views—whereby they must deal with the oppression of being female in a sexist society and disabled in an ableist society. Though not predicted, the opposite was found to be true for egalitarian participants who held more positive attitudes towards the reproductive rights of *women* than men with physical disabilities.

Although we hypothesized that both types of ads would intensify the negative attitudes of traditional participants, there was very limited support for this prediction. Specifically, exposure to ads featuring individuals with physical disabilities led to more negative attitudes toward reproductive rights, but only among men (both traditional and egalitarian), and only toward women with physical disabilities. In contrast, there was some evidence that both able-bodied and disability ads actually produced more favourable attitudes toward reproductive rights among traditional participants. Specifically, ads featuring individuals with physical disabilities increased men's acceptance for the sexual rights of men with physical disabilities, and both types of ads increased women's acceptance of rights for women with physical disabilities. Regarding acceptance of individuals with physical disabilities engaging in various sex acts, the ads had no effect on the attitudes of traditional participants. Further, the ads generally had a positive influence on attitudes towards the sexual rights of individuals with disabilities, but not on attitudes towards sexual behaviours.

Although egalitarian participants' attitudes were, as predicted, more favourable toward sexuality among individuals with disabilities, contrary to expectation their attitudes toward the sexuality of individuals with disabilities were affected by the ads. In addition to the effects of ads on attitudes toward reproductive rights of individuals with physical disabilities (noted above), the ads also affected egalitarian participants' attitudes toward sexual activity of individuals with disabilities. On the one hand, able-bodied ads were associated with more positive attitudes toward men with disabilities engaging in various sexual practices. On the other hand, ads featuring individuals with physical disabilities led egalitarian participants to become less accepting of women with physical disabilities engaging in various sexual behaviours. This may be an indication that egalitarians' beliefs in gender equality and fairness do not necessarily apply when they are exposed to actual individuals with physical disabilities.

No hypotheses were made about how male and female participants' attitudes would differ. However, on both measures, attitudes were found to be much more positive among female participants, a finding inconsistent with previous literature indicating that males tend to outscore females on various measures of sex and sexuality (see [16]). However, previous investigations have primarily evaluated gender differences in sexuality with regard to oneself—not in regard to another—and to our knowledge, not ever in regard to an individual with a physical disability.

The attitudes of women and men toward sexual rights were also shown to be influenced by both the advertisements and the gender of the individual with a physical disability. Female participants viewing able-bodied and disabled ads reported more positive attitudes compared to those in the no ad condition, regardless of the gender of the individual with a

disability. Male participants who viewed ads featuring individuals with disabilities also reported more positive attitudes about the sexuality of men with physical disabilities compared to the no ad condition. However, when the gender of the individual with a disability was *female*, the opposite pattern was seen; the ads featuring individuals with physical disabilities had a negative impact on attitudes towards the sexual rights of women with physical disabilities.

Overall, the results seem to suggest that men hold more negative attitudes towards the sexuality of women with disabilities; when confronted with images of such individuals, their attitudes seem to become more negative. Research suggests that contact with someone with a physical disability (or in this case, being confronted by the image of someone with a physical disability) may awaken fears that able-bodied individuals may have about developing a disability [1]. Able-bodied individuals protect themselves from the fear of becoming disabled by looking for and attending to the differences between themselves and those with physical disabilities; if the differences are great enough, distance is created, and the fear of becoming disabled is reduced [1].

Because individuals with disabilities continue to be marginalized in the media, and continue to face stigma within society, it is commonly assumed that greater media representation will serve to reduce the stigma they face. On this important question, the results of the present study provide less than encouraging results. The results revealed that while ads featuring individuals with disabilities generally produced more positive attitudes toward reproductive rights for individuals with physical disabilities, men's attitudes toward the rights of women with disabilities actually became more negative. Moreover, there was no evidence of any positive effects of disability ads on attitudes toward individuals with disabilities engaging in a variety of sexual practices. In fact, for some participants—specifically those with egalitarian gender role beliefs—attitudes became more negative.

Still, there are reasons why it may be premature to abandon the idea of increasing the representation of individuals with disabilities in the media. First, the present study only examined immediate effects following exposure to a collection of ten ads. Positive attitude change is likely to occur over the long term with repeated exposure. Second, this study specifically measured attitudes toward the sexuality of individuals with disabilities. There is no way to know if the ads produced more favourable attitudes on other dimensions (e.g., attitudes toward having someone with a disability as a co-worker or friend; perceptions of competence and ability). It should also be noted that the present study is limited in that the sample consisted primarily of individuals with some level of post-secondary education, and higher levels of education are associated with lower endorsement of stereotypes [9]. Indeed, attitudes within our sample were quite favourable; mean ratings and 95% confidence intervals were well above the midpoint in all conditions. The fact that data were collected solely online was also limiting, as data collected online introduces the possibility of self-selection bias due to the tendency of some individuals to respond to an invitation to participate in an online survey, while others ignore it [24].

Despite our best efforts to have all groups represented equally, with two non-manipulated independent variables (i.e., participant gender and traditional vs. egalitarian gender role beliefs) it was not possible to randomly assign participants equally across all conditions. This resulted in one unacceptably small cell of five (which was not compared to any other cells in post hoc analyses) and some large discrepancies between cell sizes. Certainly this is a limitation, and creates some ambiguity in the interpretation of significance levels and effects; however, the issue is partially addressed with the inclusion of effect sizes and power analysis. All but one effect size among post hoc contrasts met Cohen's [3] criteria for small to medium effects, and two would be considered medium to large. Moreover,

using the effect size for the gender main effect as a baseline, all but one effect is one-third to one half as large, and two are equivalent to the gender effect. These effects—particularly the effects of ad condition, which involved short term exposure to only ten advertisements—may therefore be considered meaningful. In addition, post hoc power analysis revealed exceptionally high power to detect medium sized effects where we had non-significance, and moderate to high power for small effects. Therefore, ANOVA results may be considered quite reliable.

Some of the comments made by participants indicated that the origin of a disability—that is, whether it was acquired or due to heritable causes—was an important consideration in their attitudes toward the person's sexuality. Future studies would benefit from the inclusion of a condition in which participants are asked to rate their attitudes towards women and men with both acquired and heritable disabilities. Individuals with congenital disabilities spend the bulk of their lives confronted by society's paternalistic attitudes, reflected in their socialization from birth to assume a disabled role that is asexual [13]. Research on public and rehabilitation center staff attitudes toward the sexual functioning of individuals with spinal cord injuries has shown that many wrongly assume that once an individual is confined to a wheel chair, their sex life is over [13]. Those who are confined from birth are viewed as never having a sex life to begin with. Furthermore, stereotypes related to concepts such as victimization, helplessness, dependency, and social isolation are issues individuals with physical disabilities face, partially depending on that individual's type and degree of disability [2]. Research has shown that there exists a fairly stable preference hierarchy of disability acceptability, with attitudes towards individuals with severe disabilities (e.g., quadriplegia and cerebral palsy) consistently ranked as more negative than individuals with less visibly disabling conditions [13]. Examining individuals with disabilities of differing severity would help provide more insight towards the origins of such attitudes.

Another issue concerning the present research is the nature of representation of individuals with disabilities depicted in the advertisements for the disabled condition. Society's lack of recognition of individuals with disabilities results in very one-dimensional and unrepresentative portrayals of individuals with physical disabilities. Many of the individuals in the advertisements used in this study are extraordinary individuals chosen for their ability to challenge society's views (e.g., athletes). The lack of representation of ordinary individuals with physical disabilities in the media made collecting images featuring realistic portrayals very difficult.

The present study has demonstrated that there exists a complex relationship between gender role beliefs and exposure to advertisements and the attitudes towards the sexuality of women and men with physical disabilities. Although ads created more positive attitudes under some conditions, this was more commonly the case for attitudes toward the sexuality of men with physical disabilities. In contrast, exposure to ads—particularly those featuring disabilities—tended to create more negative attitudes toward the sexuality of women with physical disabilities. This study also provided some support for the hypothesis that the endorsement of traditional gender role beliefs is related to more negative attitudes towards the sexuality of women with physical disabilities.

These results have many implications for practice and theory. Because women with disabilities are often viewed of undeserving of a sexual identity, they often do not receive the most basic in sex education. In fact, research on the sexual education of individuals with disabilities shows that the odds of not receiving sexual education or sexual counselling services among women with disabilities are two times greater than among their male counterparts [20]. Negative assumptions surrounding the sexuality of women with

disabilities have often found their way into the literature on sexuality and disability; books and articles aimed at addressing sexual education for individuals with disabilities sometimes include statements about the disabled woman's passive role in sexual acts resulting in a lack of literature aimed at female directed education [20]. Information on birth control methods and their consequences are often withheld from women with disabilities, particularly those who have been institutionalized, and it has often been thought that because women with physical disabilities are not sexually active, they do not require the internal examinations that are routine in the lives of able-bodied women [20]. Society's negative attitudes and the resulting stigmatization have effectively rendered individuals with disabilities as asexual beings, confined to remain in platonic friendships with the able-bodied population, and putting them at an increased risk for sexual exploitation, sexually transmitted infections, and cancers of the sexual organs and reproductive system [13].

As far as we know, this study is the first of its kind to establish a link between the endorsement of traditional gender role beliefs and ableism, as well as the first to establish the influence of advertisements on attitudes towards disability and sexuality. While this study has provided an important stepping stone towards understanding the basis for the negative societal devaluation faced by women with disabilities, future research is needed in order to better understand the complex relationship between sex and impairment and the resulting dual oppression on attitudes towards the sexuality of women with physical disabilities. Society's negative attitudes towards the sexuality of women with physical disabilities and the subsequent lack of education will continue to persist until the dual oppression faced by women with physical disabilities is better understood.

Compliance with Ethical Standards

Conflict of interest Alexandria Parsons, Arleigh Reichl and Cory Pedersen declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study. This article does not contain any studies with animals performed by any of the authors.

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