Body image and depressive symptoms among transgender and cisgender adults: Examining a model integrating the tripartite influence model and objectification theory

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ABSTRACT

Studies have shown higher levels of body image concerns and depression among transgender individuals, which may result from the internalized stigma of living in a body that does not conform to the expectations of their affirmed gender. We integrated objectification theory and the tripartite influence model, which both address how internalizing gendered appearance-related expectations are linked to body image and depression, and then determined whether this integrated model varied based on participants' gender identity. Participants included 715 cisgender women, 207 cisgender men, 186 trans men, and 71 trans women from the U.S. A multiple group analysis indicated that thin-ideal and muscular-ideal internalization were serially linked to body shame and depression through body monitoring and appearance comparison, with appearance comparison mediating the link between body monitoring and body shame. While this model was supported for each gender identity group, cisgender men had a relatively weaker relationship from thin-ideal internalization to body monitoring, and trans women had a relatively stronger inverse link from muscular-ideal internalization to body monitoring. Furthermore, the significance of the model pathways often differed based on gender identity. Overall, findings reveal the salience of gender identity in the connections between internalization, body monitoring, appearance comparison, body shame, and depression.

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1. Introduction

To date, researchers have largely addressed body image concerns, gendered appearance expectations, and psychological well-being from the perspective of a cisgender, heterosexist, and patriarchal cultural standard. Sociocultural models of body image suggest that socialization experiences and exposure to unrealistic appearance ideals that exaggerate characteristics associated with masculinity and femininity ultimately lead to the development of body image disturbance as well as psychological distress (Striegel-Moore & Bulik, 2007). It is possible that these models can be expanded to integrate the experiences of individuals with varied social identities that have been largely overlooked in body image research (Moradi, 2010).

In particular, two sociocultural models explain how body image disturbance and psychological distress may emerge during socialization and embodiment of traditional gender roles and appearance norms: the tripartite influence model (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) and objectification theory (Fredrickson & Roberts, 1997). The tripartite influence model suggests that the internalization of sociocultural appearance ideals frequently transmitted via sociocultural channels (e.g., the media, peers, parents) promote appearance-related comparisons to these appearance ideals (Thompson et al., 1999). Both internalization of sociocultural appearance ideals and appearance-related comparisons then predict body dissatisfaction and disordered eating. According to objectification theory, witnessing and experiencing sexual objectification encourages girls and women to objectify their own bodies, which could include habitually monitoring their appearance due to the internalized belief that their worth is contingent upon how closely their body approximates sociocultural appearance ideals (Fredrickson & Roberts, 1997). This habitual monitoring of appearance is linked to many indicators of poorer psychological

well-being, such as body shame, appearance anxiety, disordered eating, and depressed mood (for a review, see Roberts, Calogero, & Gervais, 2018). Both models have accrued much empirical support with samples of adolescent girls and women (e.g., Keery, Van den Berg, & Thompson, 2004; Rodgers, Chabrol, & Paxton, 2011; Rodgers, McLean, & Paxton, 2015; Slater & Tiggemann, 2002; Tiggemann & Williams, 2011).

Although these theories were originally developed to explain girls' and women's experiences being immersed in a culture that reduces the female body to its appearance, they have been extended to explain men's (e.g., Strübel & Petrie, 2019; Tylka, 2011) and sexual minorities' experiences (e.g., Kozee & Tylka, 2006; Tylka & Andorka, 2012; Wiseman & Moradi, 2010). These theories also may be of particular relevance to transgender individuals. Transgender is the term used to describe an individual whose gender identity does not align with their sex designation at birth (Tebbe & Budge, 2016). Although the term transgender is not absolute, it is often defined as the opposite of cisgender (i.e., individuals whose gender identity corresponds with their assigned sex at birth). Trans women are those who were assigned male at birth and identify as women or feminine, and trans men are those who were assigned female at birth and identify as men or masculine.

Societal appearance ideals reflect the rigid cultural gender and gender identity roles individuals are expected to achieve. When internalized, these gendered appearance ideals are used as a standard for self-evaluation. If a person approximates the appearance ideals consistent with their identified gender, their gender identity may be legitimized and their self-worth elevated (Tiggemann, 2011). Furthermore, body-related concerns and depressive symptoms may be exacerbated in trans individuals as they negotiate shifts in power in a society that defines men's attractiveness by their muscularity and dominance and women's attractiveness by their thinness and vulnerability (Moradi, 2010). Similar to cisgender women, trans women may internalize societal appearance ideals related to traditional feminine gender presentation such as thinness, and similar to cisgender men, trans men may internalize such ideals related to traditional masculine gender presentation such as lean muscularity (Comiskey, Parent, & Tebbe, 2020; Sevelius, 2013). Therefore, sociocultural models such as the tripartite influence model and objectification theory may be applicable to transgender individuals, in ways that may be similar and/or different than cisgender women and men.

Limited research has integrated constructs within these two theoretical frameworks to explore the body-related experiences of transgender individuals. Comiskey et al. (2020) investigated the associations between trans women's internalization of societal appearance ideals, appearance congruence (i.e., the degree to which one's appearance aligns with one's gender identity), body monitoring, body shame, disordered eating, and intention to obtain silicone injections. Trans women's internalization of societal appearance ideals was positively linked to their body surveillance and body shame, and their body shame contributed to higher disordered eating and intention to obtain silicone injections. While appearance congruence was inversely linked to body surveillance, this association was small in magnitude (whereas the other links were moderate to strong in magnitude), and appearance congruence was not uniquely associated with the remaining model variables. Overall, this study highlighted the importance of internalization of sociocultural appearance ideals, body surveillance, and body shame to trans women's disordered eating and intention to obtain silicone injections.

Two additional studies examined models containing constructs from both the tripartite influence model and objectification theory (i.e., internalization of societal appearance ideals, body monitoring) to explore trans women's body dissatisfaction and disordered eating (Brewster, Velez, Breslow, & Geiger, 2019) and trans men's body

satisfaction and compulsive exercise (Velez, Breslow, Brewster, Cox, & Foster, 2016) as part of a larger pantheoretical model of dehumanization (for a review, see Moradi, 2013). Brewster et al. revealed that the internalization of societal appearance ideals was uniquely linked to trans women's body monitoring, body dissatisfaction, and disordered eating, and body monitoring was linked to both body dissatisfaction and disordered eating. Velez et al. found that internalization of societal appearance ideals uniquely contributed to trans men's body monitoring and compulsive exercise, and body monitoring was also uniquely associated with their body satisfaction.

In the present study, we expanded upon the work of Comiskey et al. (2020), Brewster et al. (2019), and Velez et al. (2016) by integrating variables within the tripartite influence model and objectification theory to explain depressive symptomatology among individuals representing four gender identity groups: cisgender women, cisgender men, trans women, and trans men. Depressive symptomatology was chosen as the criterion variable because depression is (a) a specific indicator of psychological distress connected to the pervasive objectification of bodies and internalization of gendered appearance ideals (Fredrickson & Roberts, 1997), (b) prevalent among those identifying as transgender (40.4 % among trans women and 47.5 % among trans men; Budge, Adelson, & Howard, 2013), and (c) strongly connected to transgender individuals' suicidal ideation, attempts, and completions (Grossman, Park, & Russell, 2016; Reisner, Greytak, Parsons, & Ybarra, 2015). Furthermore, we assessed internalization of the thin ideal and internalization of the muscular ideal separately, unlike Comiskey et al., who assessed internalization of general sociocultural appearance ideals without specifying thinness or muscularity. While internalization of the thin ideal may be more applicable to cisgender women and trans women (McGuire et al., 2016; Sevelius, 2013), internalization of the muscular body ideal may be important to cisgender men and trans men (Velez et al., 2016), and therefore is important to assess both forms of internalization as separate constructs. We also explored participants' appearance comparison, a central variable within the tripartite influence model, but absent in the studies by Brewster et al., Comiskey et al., and Velez et al. Appearance comparison, together with body monitoring, may be especially relevant to transgender individuals who may have anxiety about "passing" as a member of their gender identity group (Moradi, 2010).

Within our integrated model (see Fig. 1), we posited that, for all gender identity groups, internalizing the thin and muscular appearance ideals would be associated with higher appearance comparison, both directly and indirectly via higher body monitoring. The link between internalizing societal appearance ideals and appearance-related social comparison is fundamental in the tripartite influence model (Keery et al., 2004; Thompson et al., 1999) and supported empirically in many studies (e.g., Tylka & Andorka, 2012). We posited that body monitoring, which is a behavioral manifestation of self-objectification (Fredrickson & Roberts, 1997), would also facilitate the connection between participants' internalization of societal appearance ideals and their engagement in appearance-related comparisons. Indeed, once appearance ideals are internalized and valued, individuals monitor their appearance and compare others' bodies against their own body to determine consistencies (and inconsistencies) with appearance ideals. We also hypothesized that internalizing societal appearance ideals and appearance comparison would be related to higher body shame. The emotional response of body shame occurs when individuals evaluate their appearance against others' appearance (e.g., media, peers) and realize that their body comes up short (Fredrickson & Roberts, 1997). Given that the emotional experience of body shame is dependent on appearance comparison, we predicted that appearance comparison would mediate the proposed link between body
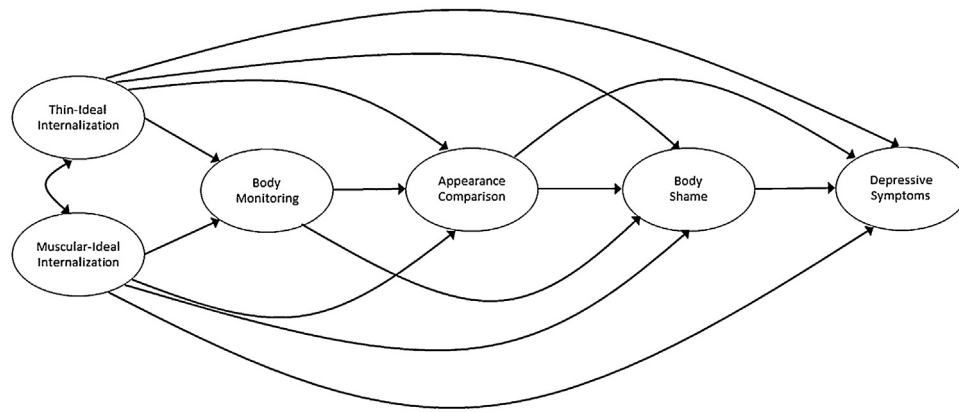
Fig. 1. Hypothesized structural model integrating elements of the tripartite influence model (internalization, appearance comparison) and objectification theory (body monitoring, body shame) to explain depressive symptoms in diverse gender identity groups (i.e., cisgender men, cisgender women, trans men, and trans women).

monitoring and body shame as described in objectification theory (therefore, while we include a direct path from body monitoring to body shame in Fig. 1, we expected it to be nonsignificant, fully mediated by appearance comparison). Similarly, we explored whether the link between internalization of appearance ideals (both thinness and muscularity) and depressive symptoms would be serially mediated by body monitoring, appearance comparison, and body shame for each gender identity group. Last, we expected that body shame and appearance comparison would (a) individually and uniquely contribute to depressive symptoms, as specified within objectification theory (Fredrickson & Roberts, 1997) and found in empirical research (Grabe, Hyde, & Lindberg, 2007; Laker & Waller, 2019), as well as (b) connect internalization of appearance ideals to depressive symptoms.

We expected that this model would fit the experiences of all four gender identity groups. Indeed, research has generally supported the tripartite influence model with samples of cisgender women and men (Keery et al., 2004; Tylka, 2011) and objectification theory with samples of cisgender women (for a review, see Roberts et al., 2018; Tiggemann & Williams, 2011). As discussed above, Comiskey et al. (2020), Brewster et al. (2019), and Velez et al. (2016) found that their models that integrated constructs from both theoretical frameworks provided a good fit for trans women and men.

Yet, the strength of the model paths may likely differ between the gender identity groups. Trans women and trans men, like cisgender women and men, are held to cultural standards of appearing feminine and masculine. However, their experiences associated with these gendered appearance norms likely differ from those of cisgender individuals (McGuire, Doty, Catalpa, & Ola, 2016; Sevelius, 2013; Velez et al., 2016). Therefore, transgender individuals' internalization of societal appearance ideals may be differentially associated with their body monitoring, appearance comparison, body shame, and depressive symptomatology compared to cisgender individuals. Moreover, scholars have asserted that body image experiences are not uniform within the transgender community and thus may also differ between trans women and trans men (Kraemer, Delsignore, Schnyder, & Hepp, 2007; McGuire et al., 2016; Mizock & Hopwood, 2016). Due to the lack of theory and research in this area, we did not make any formal hypotheses about differences in the strength of the model paths between the gender identity groups investigated.

In addition to exploring differences in the strength of model paths, we also investigated whether the levels of the model variables differed between the gender identity groups. Some researchers suggest that transgender individuals may exhibit more pronounced body dysphoria and body shame (e.g., Diemer, Grant, Munn-Chernoff, Patterson, & Duncan, 2015; Jones, Haycraft,

Murjan, & Arcelus, 2016), while others have argued that transgender individuals tend to feel comfortable in their body because they are less likely to be bound by dyadic gender boundaries (e.g., Kraemer et al., 2007). This inconsistency may be attributed to where a transgender person finds themselves within the process of gender identity consolidation and self-acceptance (McGuire et al., 2016). During gender affirmation processes, transgender people experience not only significant shifts in identity, but also their power (Mizock & Hopwood, 2016). For example, trans women may lose male social power and privilege as their conform to heteronormative gender expressions of femininity, thereby compelling them to reestablish their social power through their appearance (e.g., increased body monitoring, appearance comparison). Simultaneously, trans men may gain male privilege, but also gain new pressures of leanness and muscularity associated with masculinity and power.

Based on the literature reviewed, we hypothesized that cisgender men would have lower levels of body shame and body monitoring as compared to the other three groups, as well as lower levels of internalization of the thin ideal. We hypothesized that cisgender men and trans men would report relatively higher levels of internalization of the muscular ideal than cisgender women and trans women. Additionally, we predicted that trans women and trans men would have more depressive symptoms compared to cisgender women and men.

2. Method

2.1. Participants

The sample for the study comprised of 1179 participants (715 cisgender women, 207 cisgender men, 186 trans men, and 71 trans women). Participants ranged in age from 18 to 68 (M_{age} = 23.36 years, SD = 8.77). In terms of ethnicity, the majority were White (57.9 %, n = 683), 241 (20.4 %) were Hispanic/Latino, 120 (10.2 %) were African American/Black, and 63 (5.3 %) Asian or Pacific Islander.

2.2. Measures

2.2.1. Demographics and gender identity

Participants provided their age, weight and height, and ethnicity. Participants were also asked to identify their gender identity from the following options: (1) cisgender woman, (2) cisgender man, (3) trans man, (4) trans woman, (5) nonbinary/gender fluid/genderqueer, and (6) other. Due to low sample sizes, those who identified as nonbinary/gender fluid/genderqueer (n = 6) and

other (n = 1) completed the survey but were excluded from this study.

2.2.2. Internalization of appearance ideals

The 5-item Internalization-Thin/Low Body Fat subscale and the 5-item Muscular/Athletic subscale of the Sociocultural Attitudes Toward Attractiveness Questionnaire–4 (SATAQ-4; Schaefer et al., 2015) assess identification with lean (e.g., "I want my body to look like it has little fat") and athletic ideals of attractiveness (e.g., "I think a lot about looking muscular"). Participants responded to each item on a 5-point scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Items are averaged; higher scores indicate greater thin-ideal and muscular-ideal internalization, respectively. Among college women and men, Schaefer et al. reported alphas of .87 (Thin/Low Body Fat) and .97 (Muscular/Athletic) and validity evidence given its relationships with disordered eating symptoms, body image, and lower self-esteem. Cronbach's alphas from the current study were .81 for the Thin/Low Body Fat subscale and .89 for the Muscular/Athletic subscale.

2.2.3. Body monitoring

We used the 8-item Body Surveillance subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996) to assess the degree to which participants experienced themselves from an objectified perspective and monitored their appearance. Participants responded to items, such as "I often worry about whether the clothes I am wearing make me look good," on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Items are averaged, with higher scores indicating greater body surveillance. In a sample of undergraduate women, McKinley and Hyde (1996) reported a Cronbach's alpha of .89 and provided validity evidence among college women, such as its relationships with measures of public self-consciousness and lower body esteem. Cronbach's alpha from the current study was .82.

2.2.4. Appearance comparison

The 5-item Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff-Dunn, 1991) assessed the degree to which individuals compare their own appearance with others. On items such as "I compare my body to others to determine if I am fat or thin," participants responded on a 5-point scale that ranged from 1 (definitely disagree) to 5 (definitely agree). Items are averaged, with higher scores indicating a greater tendency to make appearance-related comparisons. In a sample of adult women, Thompson et al. (1991) reported a Cronbach's alpha of .78 and significant correlations with measures of body dissatisfaction and self-esteem, providing internal consistency and validity evidence. Cronbach's alpha from the current study was .92.

2.2.5. Body shame

We used the 4-item Body Shame Scale (Tripp & Petrie, 2001) to assess participants' feelings of shame associated with the shape and size of their bodies. Participants responded from 1 (definitely disagree) to 5 (definitely agree) for each item ("I feel ashamed of my body or some part of it," "I feel ashamed about exposing specific body parts," "I feel ashamed when others comment on my body parts," and "I try to hide my body because I am ashamed of it"). Items are averaged; higher scores indicate more body-related shame. Tripp and Petrie (2001) reported a Cronbach's alpha of .90 and provided validity evidence with college women, including its relationships with measures of body dissatisfaction, body shape concerns, and disordered eating (e.g., bingeing). Cronbach's alpha from the current study was .91.

2.2.6. Depressive symptoms

The 9-item Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001) measures depressive symptomatology. Its items, such as "feeling, down, depressed or hopeless," participants indicated the extent to which they had been feeling that way during the last two weeks on scale from 0 (not at all) to 3 (nearly every day). Items are summed, with higher scores indicating greater depressive symptomatology. Kroenke et al. reported Cronbach's alphas that ranged from .86 to .89. Across two patient samples of men and women (i.e., primary care and obstetrics/gynecology) they also established the scale's criterion related (e.g., sensitivity and specificity for diagnosis were 88 %) and construct validity. Cronbach's alpha from the current study was .93.

2.3. Procedure

After receiving approval from the first and second authors' university IRB, participants were solicited from social media (i.e., Facebook) and universities located in the Northeast, Midwest, Southwest, and Southeast U.S. to participate in a study on gender identity, body image, and psychological health. Interested participants accessed a secure website where they provided consent and then anonymously completed the survey. Students received extra credit points or course credit at the discretion of each university and professor. A research panel was also recruited directly from a pre-arranged pool of respondents in the U.S. who have agreed to be contracted by a market research service (i.e., Qualtrics). Qualtrics participants each received $5.00 financial compensation.

Initially, 1,449 people entered the website and completed the consent form. Of these, 12 were removed because they selected nonbinary/gender fluid/genderqueer or other as their gender identity. Another 258 responses were removed because they left five or more questions blank. Of the remaining participants, 250 were recruited from Qualtrics panels (182 trans men and 68 trans women) and 929 were recruited from the universities and social media (715 cisgender women, 207 cisgender men, 4 trans men, and 3 trans women).

2.4. Statistical analysis

Data were analyzed using SPSS version 26. A one-way MANCOVA was conducted to determine a statistically significant difference between gender identity groups (i.e., cisgender women, cisgender men, trans men, trans women) on body shame, body monitoring, sociocultural concerns (i.e., physical appearance comparison, internalization of thin and muscular ideals), and depressive symptoms while controlling for age and BMI. Correlations were run separately for each gender group.

We used structural equation modeling via Mplus Version 6.12 (Muthén & Muthén, 1998-2011Muthén & Muthén, 1998-2011) with maximum likelihood estimation to examine the hypothesized model in Fig. 1. First, we created latent variables. Specifically, we used the individual Thin/Low body fat items to estimate the thin-ideal internalization latent variable, individual Muscular/Athletic items to estimate the muscular-ideal internalization latent variable, individual Physical Appearance Comparison Scale items to estimate the appearance comparison latent variable, and individual Body Shame Scale items to estimate the body shame latent variable. We created three parcels to estimate the body surveillance latent variable and three parcels to estimate the appearance comparison latent variable—more specifically, we conducted an exploratory factor analysis on the items of the respective scale, rank ordered the items by their factor loadings, and then successively assigned (from the highest to lowest loading) the items to one of the three parcels (Russell, Kahn, Spoth, & Altmaier, 1998). Items within each parcel were then averaged. All parcels loaded on their respective

latent factor (all ps < .0001). We then analyzed the measurement model, which explored the fit of the item/parcel loadings on the latent variables.

Next, we analyzed the hypothesized structural model, containing item/parcel-factor loadings and standardized paths, using multiple group analysis to determine whether the pathways in Fig. 1 were similar in strength for the four gender identity groups. For this analysis, we created an invariant model that constrained all paths to be equal for the gender identity groups. We then compared this invariant model with the variant model counterpart, in which all paths were freed to vary.

For both the measurement and structural model, adequacy of model fit was determined via consensus among the comparative fit index (CFI), standardized root-mean square residual (SRMR), and root mean square error of approximation (RMSEA). Values around ≥ .95 for CFI, ≤ .08 for SRMR, and ≤ .06 for RMSEA indicate a good fit of the model to the data, whereas values between .90–.94 for CFI, .09–.10 for SRMR, and .07–.10 for RMSEA indicate an acceptable fit (Hu & Bentler, 1999).

Last, to examine our hypothesis of whether appearance comparison mediated the path between body monitoring and body shame, we used Shrout and Bolger's (2002) bootstrap procedures to estimate the significance of the indirect effect. We specified Mplus to create 10,000 bootstrap samples from the data set by random sampling with replacement, and then generate indirect effects. If the confidence interval of the indirect effect does not contain 0, then mediation is evidenced.

3. Results

3.1. Preliminary analyses

No missing data were evident at the individual item response level. The distributional properties of each measure (e.g., outliers, skewness, kurtosis) were within normal ranges so we made no transformations to the data. Given that age and BMI were related to several of the model variables, they were included as covariates within the analyses. Partial correlations between study variables were examined for each gender group and are presented in Table 1.

3.2. Group differences in body image and depression

First, to test whether the four gender groups differed significantly on measures of thin-ideal internalization, muscular-ideal internalization, body monitoring, appearance comparison, body shame, and depressive symptoms, we ran a MANCOVA, adjusting for BMI and age. As expected, this MANCOVA was significant, Pillai's trace $F(3507) = 24.13$, $p < .001$, partial $\eta^2 = .126$.

As shown in Table 2, the four groups differed significantly in terms of thin-ideal internalization, muscular-ideal internalization, body monitoring, appearance comparison, body shame, and depressive symptoms. Post-hoc pairwise comparisons revealed significant differences between the four groups (see Table 2). Cisgender men were less likely to report thin-ideal internalization compared to cisgender women, trans men, and trans women, and these three groups did not differ significantly from each other. Cisgender men were more likely to internalize muscular appearance ideals as compared to cisgender women and trans women. However, there was no significant difference in the muscular-ideal internalization scores of cisgender men and trans men. Similarly, there was no significant difference in the muscular-ideal internalization scores between cisgender women and trans women. Trans men, trans women, and cisgender women had significantly higher body monitoring scores than cisgender men. There were no differ-

ences in body monitoring scores between trans men, trans women, and cisgender women.

When examining differences in appearance comparison, results indicated that cisgender men reported lower levels of appearance comparison as compared to cisgender women, trans men, and trans women, and these three groups did not differ on average on this measure. Results further indicated that trans men and trans women had significantly higher body shame scores than cisgender men and women. Body shame scores were not statistically different between trans women and trans men. Cisgender women had significantly higher body shame scores than cisgender men. Last, differences in depressive symptom scores showed that cisgender men reported significantly lower levels of depressive symptoms as compared to cisgender women, trans men and trans women. Cisgender women had significantly lower depressive symptom scores compared to trans men and trans women, and trans men and trans women did not significantly differ in their average scores.

3.3. Evaluation of the hypothesized model

First, we evaluated the fit of the measurement model to ensure that the indicators (items or parcels) loaded on their respective latent variable. Skew and kurtosis for each indicator were less than or equal to 0.97 and −1.24, respectively. This model provided an acceptable fit to the data, CFI = .946, SRMR = .053, RMSEA = .063 (90 % CI: .060, .067), $\chi^2(215) = 1232.74$, $p < .001$. Therefore, we proceeded with analyzing the structural model using multiple group analysis. We included age and BMI as covariates (Fig. 2).

While the invariant model (where all paths were fixed to be equal across the gender groups) provided an acceptable fit to the data, CFI = .923, SRMR = .081, RMSEA = .066 (90 % CI: .063, .070), $\chi^2(1090) = 2507.57$, $p < .001$, the variant model (where all paths were freed to vary across the gender groups) provided a significantly better fit, CFI = .926, SRMR = .063, RMSEA = .066 (90 % CI: .063, .070), $\chi^2(1051) = 2418.58$, $p < .001$, $\Delta\chi^2(39) = 88.99$, $p < .001$. This finding indicates that at least one path was different in strength between the gender identity groups. We then compared the invariant model with a series of models in which only one path was allowed to vary at a time. If the invariant model provided a worse fit than the model with one variant path, then the strength of that particular variant path was different between the gender identity groups. Two paths were significantly different between the gender identity groups. First the positive link between thin-ideal internalization and body monitoring was significantly weaker for cisgender men compared to cisgender women, trans men, and trans women (the path was similar in strength for these three latter groups), $\Delta\chi^2(3) = 11.64$, $p = .009$. Second, the link between muscular-ideal internalization to body monitoring was significantly stronger for trans women compared to cisgender men, cisgender women, and trans men (this path was similar in strength for these three latter groups), $\Delta\chi^2(39) = 43.23$, $p < .001$. Of note, this path was negative for cisgender women and trans women, and positive for cisgender men and trans men.

3.4. Evaluation of mediation

In our model, appearance comparison mediated the relationship between body monitoring and body shame for all four groups: cisgender women, $\beta = .260$, $p < .001$ (CI: .177, .351), cisgender men, $\beta = .281$, $p < .001$ (95 % CI: .129, .462), trans women, $\beta = .392$, $p < .001$ (95 % CI: .144, .791), and trans men, $\beta = .151$, $p < .001$ (95 % CI: .027, .369).

Furthermore, the relationship between thin-ideal internalization and depressive symptoms was serially mediated by body monitoring, appearance comparison, and body shame for cisgender women, $\beta = .025$, $p < .05$ (95 % CI: .005, .071), cisgender men,

Table 1
Partial Correlations (Adjusting for Age and BMI) between Study Variables Among Gender Groups.

a. Cisgender Adults (men above the diagonal and women below)

Variables	1	2	3	4	5	6
1. Body Shame	–	.46***	.28***	.07	.55***	.45***
2. Body Surveillance	.39***	–	.21**	.22**	.68***	.35***
3. Thin Internalization	.37***	.45***	–	.36***	.28***	.16*
4. Muscular Internalization	.01	.07*	.37***	–	.20**	.04
5. Appearance Comparison	.48***	.63***	.48***	.14***	–	.34***
6. Depressive Symptoms	.39***	.26***	.22***	−.01	.35***	–

b. Transgender Adults (trans men above the diagonal and trans women below)

Variables	1	2	3	4	5	6
1. Body Shame	–	.37***	.39***	.05	.46***	.34***
2. Body Surveillance	.33**	–	.42***	.21***	.61***	.19**
3. Thin Internalization	.09	.13	–	.25**	.46***	.29***
4. Muscular Internalization	−.18	−.39**	.52***	–	.29***	−.03
5. Appearance Comparison	.53***	.55***	.30*	−.07	–	.37***
6. Depressive Symptoms	.37***	−.02	−.02	.12	.18	–

Note. *p < .05. **p < .01. ***p < .001.

Table 2
Adjusted Means and Standard Error for Body Image and Psychosocial Variables by Gender.

Variable	Cisgender men (n = 207) Adj. M SE	Cisgender women (n = 715) Adj. M SE	Trans men (n = 186) Adj. M SE	Trans women (n = 71) Adj. M SE	F value	Partial η^2
Body Shame	2.674$_a$ .074	3.256$_b$ .040	3.940$_c$ .081	3.871$_c$ .138	48.353*	.110
Body Monitoring	4.082$_a$ .073	4.758$_b$ .040	4.932$_b$ .079	4.865$_b$ .136	27.739*	.066
Internalization Thin/Low Body Fat	2.967$_a$ .060	3.463$_b$ .030	3.428$_b$ .065	3.612$_b$ .112	19.722*	.048
Internalization Muscular/Athletic	3.309$_a$ .067	2.850$_b$ .037	3.124$_{a,c}$ .073	2.718$_{b,c}$ .125	15.212*	.037
Appearance Comparison	2.931$_a$ .076	3.674$_b$ .041	3.606$_b$ .083	3.863$_b$ .142	27.042*	.065
Depression	14.434$_a$ .444	16.540$_b$ .242	23.027$_c$ .486	23.970$_c$ .830	77.293*	.165

Note. Degrees of Freedom were 3, 1173 for all F tests. Means that do not share subscripts differ at the p < .05 level. BMI (body mass index) and age served as covariates in each analysis. Internalization = SATAQ-4 Thin/Low Body Fat & Muscular/Athletic subscale (scores range from 1 [*low*] to 5 [*high*]). Appearance Comparison = Physical Appearance Comparison Scale (scores range from 1 [*low*] to 5 [*high*]). Body monitoring = Body Surveillance subscale of the Objectified Body Consciousness Scale (scores range from 1 [*low*] to 7 [*high*]). Body Shame = Body Shame subscale of the Objectified Body Consciousness Scale (scores range from 1 [*low*] to 5 [*high*]). Depression = Patient Health Questionnaire (total scores range from 1 [*minimal depression*] to 27 [*severe depression*]). * p < .001.
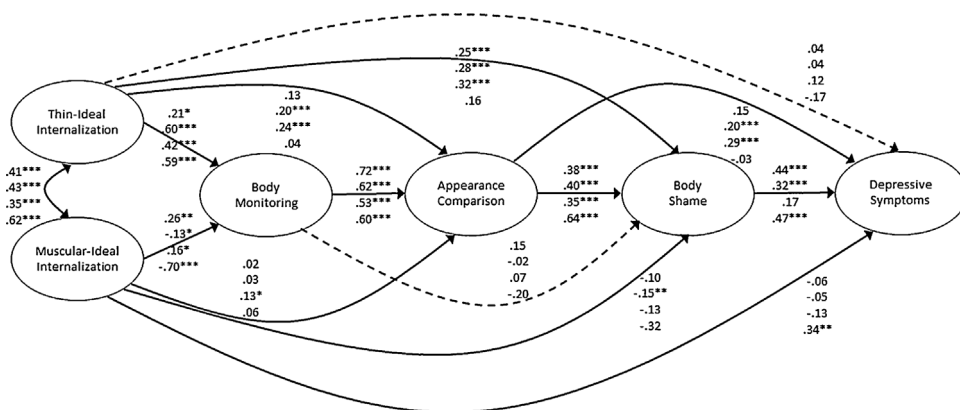

Fig. 2. Multiple group analysis of the hypothesized structural model. Standardized path coefficients are presented (top to bottom) for cisgender men, cisgender women, trans men, and trans women (respectively). *p < .05. **p < .01. ***p < .001.

β = .021, p < .05 (95 % CI: .002, .067), and trans men, β = .039, p < .05 (95 % CI: .025, .059), but not trans women, β = .012, ns (95 % CI: −.001, .049). In addition, body monitoring, appearance comparison, and body shame serially mediated the relationship between muscular-ideal internalization and depressive symptoms for cisgender women, β = −.009, p < .05 (95 % CI: −.020, −.003), cisgender men, β = .025, p < .05 (95 % CI: .005, .071), and trans women, β = −.113, p < .05 (95 % CI: −.393, −.025), but not trans men, β = .005, ns (95 % CI: .000, .026).

4. Discussion

The present study represents the examination of an integrated framework (containing constructs from both objectification theory and the tripartite influence model) with trans women, trans men, cisgender women, and cisgender men. This framework allowed us to determine the variables that uniquely contribute to multiple body-related experiences and depressive symptoms, as well as compare the strengths of the model pathways, for each gen-

der identity group, while controlling for age and BMI. Overall, the model provided an acceptable fit to the data for each gender identity group. For all gender identity groups, thin-ideal internalization was related to higher body monitoring, which was then linked to higher appearance comparison, which mediated the relationship between body monitoring and body shame. However, between the gender identity groups, differences emerged in the (a) significance levels and strengths of multiple variable paths, (b) the variables that contributed to depressive symptoms, and (c) the average levels of the variables themselves.

4.1. Variable differences in the gender identity groups

Several differences and themes emerged regarding the average levels of the model variables. First, cisgender men frequently reported lower levels of body-related distress (i.e., thin-ideal internalization, body monitoring, appearance comparison, body shame) and depression than the other gender identity groups. This finding may reflect the intersection of objectification, power, and gender identity (Moradi, 2010). Specifically, cisgender women, trans men, and trans women have experienced being treated as a woman by society, as they likely are the targets of ubiquitous interpersonal and media messages that emphasize the importance of women's appearance, objectifying encounters, and personal safety anxiety linked to such encounters (Fredrickson & Roberts, 1997). As a result, cisgender men likely experience less objectification than the other gender identity groups, and their privileged gender identity is valued regardless of their appearance and could buffer potential effects (e.g., body monitoring, appearance comparison) of appearance-related social influences (Fredrickson & Roberts, 1997; Thompson et al., 1999). Consistent body monitoring and appearance comparison may be more intensified in trans women, trans men, and cisgender women as they attempt to approximate gendered cultural standards and, for transgender women and men, to minimize the scrutiny of their gender identity by others.

Second, men (cisgender and transgender) were more likely to internalize muscular body ideals compared to their cisgender and transgender women counterparts, while women (cisgender and transgender) were more likely to internalize traditional feminine gender norms that emphasize a thin/low body fat appearance. Transgender individuals may be more likely to internalize cisgender-centric appearance ideals to avoid transgender discrimination and "pass" as cisgender (Brewster et al., 2019). For trans women, the development and adoption of such standards may be part of their transition process, which may be crucial for social awareness and self-acceptance (Brewster et al., 2019; Sevelius, 2013). Interestingly, trans men's degree of thin-ideal internalization did not differ significantly from cisgender and trans women. Trans men, in an attempt to masculinize their appearance, may focus on behaviors that will increase their muscularity, but they may also concurrently attempt to reduce body fat in order to suppress feminine sexual characteristics (e.g., hips, breasts; Ålgars, Santtila, & Sandnabba, 2010; Velez et al., 2016). Given that we did not measure motivations for pursuing appearance ideals, future research needs to examine this proposition.

Third, transgender participants reported higher levels of depressive symptoms compared to cisgender women and men, which is consistent prior research (e.g., Budge, Rossman, & Howard, 2014; Budge et al., 2016). Cisgender individuals are less likely to experience gender incongruency, gender identity stigma, and gender identity discrimination because of their normative/privileged gender identity status, which could potentially be protective against depressive symptoms. For trans women, greater depressive symptoms may be due in part to a loss of social power as they shift from a privileged status (men, masculinity) to a status considered inferior (i.e., women, femininity). Furthermore, the incongruencies

between one's actual and ideal body may be central to the distress of transgender individuals, which also could put them at a higher risk for depression (Kozee, Tylka, & Bauerband, 2012).

4.2. Model findings - trans women

For trans women, thin-ideal internalization was strongly linked to higher body monitoring, but was unrelated to appearance comparison, body shame, and depressive symptoms. Body monitoring was strongly related to higher appearance comparison, appearance comparison was strongly related to higher body shame, and body shame was strongly related to higher depressive symptoms. Muscular-ideal internalization was strongly related to lower body monitoring (this path was significantly stronger for trans women compared to other gender identity groups) but moderately related to greater depressive symptoms. The present findings that (a) thin-ideal internalization was connected to depressive symptoms indirectly through higher body monitoring, appearance comparison, and body shame and (b) muscular-ideal internalization was inversely related to body monitoring but positively related to depressive symptoms, extend previous research investigating sociocultural models with trans women (Brewster et al., 2019; Comiskey et al., 2020). For trans women, appearance comparison to cultural standards of female beauty may be associated with body shame and depressive symptoms because their bodies may not confirm their authentic self (i.e., gender identity) or match social expectations of femininity. Valuing/internalizing muscularity as an ideal may offset some pressure for trans women to appear feminine, whereas valuing thinness may increase the pressure for trans women to "pass" as feminine, which may set forth engaging in appearance comparison, body shame, and ultimately greater depressive symptoms. Yet, even though valuing muscularity is linked to lower body monitoring for trans women, it is not adaptive given that it is directly linked to more negative psychological well-being (i.e., higher depressive symptoms).

4.3. Model findings - trans men

For trans men, thin-ideal internalization was moderately related to higher body monitoring and moderately related to higher appearance comparison and higher body shame, but unrelated to depressive symptoms. Body monitoring was strongly related to higher appearance comparison, which was moderately related to higher body shame and greater depressive symptoms. Unlike the other gender identity groups, body shame did not uniquely contribute to trans men's depressive symptoms. Muscular-ideal internalization was weakly related to higher body monitoring and higher appearance comparison but did not uniquely contribute to either body shame or depressive symptoms. These findings extend existing knowledge of the body image of trans men (i.e., Velez et al., 2016) by showing that appearance comparison is a unique contributor to their depressive symptoms, and appearance comparison links both thin- and muscular-ideal internalization to their depressive symptoms. Comparing their appearance to muscular and masculine appearance ideals may be associated with trans men's body shame and depressive symptoms because their bodies may not reflect their gender identity or match social expectations of muscularity for men.

4.4. Model findings - cisgender women

For cisgender women, thin-ideal internalization was strongly related to higher body monitoring, slightly-to-moderately related to higher appearance comparison, and moderately related to higher body shame, but did not contribute uniquely to depressive symptoms. Instead, the relationship between thin-ideal internalization

and depressive symptoms was serially mediated by body monitoring, appearance comparison, and body shame. Body monitoring was strongly related to higher appearance comparison, which was then moderately linked to higher body shame. Both body shame and appearance comparison uniquely contributed to greater depressive symptoms. These findings emphasize the importance of behavioral (monitoring, comparison) and affective (shame) body-related responses to cisgender women's psychological distress (depression) that is underscored in objectification theory (Fredrickson & Roberts, 1997). These findings also emphasize the importance of thin-ideal internalization, which may set forth these body-related responses (Homan, 2010; Rodgers et al., 2015). In contrast, muscular-ideal internalization was only weakly related to lower body monitoring and body shame, and was unrelated to depressive symptoms, suggesting that this particular type of internalization is not as relevant to cisgender women.

4.5. Model findings - cisgender men

For cisgender men, thin-ideal internalization was weakly connected to higher body monitoring (this path was significantly weaker compared to other gender identity groups) and moderately connected to higher body shame but was unrelated to appearance comparison and depressive symptoms. Muscular-ideal internalization was moderately linked to higher body monitoring, but unrelated to appearance comparison, body shame, and depressive symptoms. These findings suggest that, while muscular-ideal internalization seems to be more relevant to body monitoring than thin-ideal internalization for cisgender men, both forms of internalization do not seem to contribute substantially to their body-related behaviors and emotional experiences. Instead, body monitoring, appearance comparison, and body shame, which were moderately-to-strongly linked, seemed more relevant to cisgender men's depressive symptoms, collectively and completely mediating the associations between both types of internalization and depressive symptoms. These findings extend previous research on the tripartite influence model (Tylka & Andorka, 2012; Tylka, 2011) and objectification theory (Daniel & Bridges, 2010; Engeln-Maddox, Miller, & Doyle, 2011) with male samples to highlight the importance of body-related behavioral and emotional mechanisms to their emotional distress.

4.6. Limitations and future research directions

Our study includes limitations that pave directions for future research. First, all data were collected via self-report and thus subject to potential bias or misclassification. Although an Internet sample does provide anonymity, it can also pose several limitations. Within the transgender community, online studies may appear "alienating and distancing," resulting in wariness and concern about how the researchers will use the study results (Tebbe & Budge, 2016, p. 1011). Despite having a sizeable, demographically diverse group of participants, our study was limited by the smaller transgender sample compared to our cisgender control group. Furthermore, we did not include non-binary individuals in the sample. In the future, researchers may find it useful to establish relationships with transgender organizations and recruit from such places, specifying exactly how data will be used. Obtaining large samples from such organizations may allow researchers to explore the model variables and framework with non-binary individuals.

Another limitation is that the university sample was recruited due to convenience. College student samples have a propensity towards homogeneity that may create a bias in the data and thus should not be taken as representative of the population (Howitt & Cramer, 2007). Specifically, the university sample is more likely to share common characteristics, such as racial background, educa-

tion, and income. Because the sample recruited from Qualtrics was purposive, it too is not necessarily representative of the population. Participants were recruited deliberately due to their gender identity. We also used snowball sampling to collect data from social media, which as a form of non-probability sampling, may have created a systematically biased sample of the population (Howitt & Cramer, 2007). Our study needs to be replicated with community-based samples to determine whether the model relationships are stable across diverse samples.

We also did not ask for information on sexual orientation, which may have also impacted participants' responses. Gender identity and sexual orientation intersect differently for transgender individuals because they challenge binary gender norms, and they may experience shifts in sexual identity, gender expression, and even attraction during the gender affirmation process (Mizock & Hopwood, 2016). Researchers need to explore how sexual orientation may impact the model relationships among transgender individuals.

Importantly, for transgender participants, higher scores on our measures may be impacted by factors such as stage of transition, where they are in the process of gender identity consolidation and self-acceptance, self-objectification, appearance-related pressures, social stigma, and minority stress (e.g., anti-transgender discrimination), which we did not take into account for this study. For example, in a sample of 697 transgender individuals, Owen-Smith et al. (2018) found higher rates of depression in those who had no gender confirmation treatment compared to those who had gender confirmation surgery. We encourage researchers to explore these factors within the context of the integrated model framework, perhaps integrating the pantheoretical model of dehumanization (Moradi, 2013) as well as consider participants' stages of gender identity transition, consolidation, and acceptance. Forms of dehumanization, such as sexual objectification, appearance-related pressures, and anti-transgender discrimination (Brewster et al., 2019; Moradi, 2013) could be integrated as predictors that could "kick start" the internalization of appearance ideals (which is consistent with objectification theory and the tripartite influence model), whereas the stages of gender identity transition, consolidation, and acceptance could be explored as moderators of the variable relationships.

Finally, while our model framework and analyses were theoretically driven, they were correlational in design, and thus no inferences can be made about the directionality of the links between the proposed model pathways. Prospective studies exploring the model relationships over time are needed.

4.7. Conclusion

The present study affirms the importance of body-related experiences embedded within both objectification theory (Fredrickson & Roberts, 1997) and the tripartite influence model (Thompson et al., 1999) in explaining depressive symptoms among trans women, trans men, cisgender women, and cisgender men. The applicability of the integrated model to all gender identity groups was supported, and important similarities and differences emerged between the groups. For all gender identity groups, appearance comparison completely mediated the relationship between body monitoring and body shame, and thin-ideal internalization was associated with depressive symptoms indirectly through body monitoring, appearance comparison, and body shame - these findings are particularly novel contributions to the body image literature. Relatively weaker relationships were found from internalization of thin and muscular appearance ideals to body-related experiences for cisgender men compared to cisgender women, trans women, and trans men. Collectively, these findings highlight how social power, privilege, and objectification may intersect

to explain the relative importance of internalization of societal appearance ideals for body-related experiences and depressive symptoms among different gender identities.

CRediT authorship contribution statement

Jessica Strübel: Conceptualization, Funding acquisition, Investigation, Data curation, Methodology, Project administration, Resources, Visualization, Validation, Writing - original draft, Writing - review & editing. **Natalie J. Sabik:** Data curation, Methodology, Validation, Writing - original draft, Writing - review & editing, Visualization. **Tracy L. Tylka:** Data curation, Methodology, Validation, Writing - original draft, Writing - review & editing, Visualization.

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