

**Body Image in LGBTQ+ Young Adults: Current and Developmental Influences**

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### Abstract

All adolescents and young adults navigate a minefield of influences to develop healthy body image, and those who also come to recognize their sexual or gender minority identities face additional challenges. However, influences on body image specifically for lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority (LGBTQ+) youth remain largely understudied. The present research fills this gap in the literature, using both secondary analysis of the National Longitudinal Study of Adolescent to Adult Health (Study 1) and original survey data (Study 2). Regression analyses assessed relations between predictor variables (masculinity, femininity, current outness, perceived social support, the timing of sexual identity development milestones, and pubertal timing) and body image indicators (healthy perceived weight, perceived attractiveness, body appreciation, and drive for muscularity). Findings highlighted the consistent importance of some factors (e.g., masculinity, perceived social support) and mixed importance of other factors (e.g., pubertal timing, outness). This research is relevant to psychologists, clinicians, public health professionals, policymakers, and the LGBTQ+ community itself. Future research should build on these findings to further examine the complexities of body image development within this understudied population.

*Keywords:* psychology, developmental psychology, LGBTQ+, body image

### **Body Image in LGBTQ+ Young Adults: Current and Developmental Influences**

All adolescents and young adults navigate a minefield of influences to develop healthy body image, and those who also come to recognize their sexual or gender minority identities face additional challenges (McClain & Peebles, 2016; McGuire et al., 2016). However, lesbian, gay, bisexual, transgender, queer, and other sexual and gender minority (LGBTQ+) youth are largely underrepresented in body image research, and additional research may elucidate relations between a range of predictors and body image within this population. Thus, the present research uses both secondary dataset analysis of an older longitudinal study and newer survey data to assess both current and developmental influences on body image in LGBTQ+ young adults.

### **Body Image in Adolescence and Young Adulthood**

Body image refers to a person's perceptions, beliefs, and feelings related to their body (Muth & Cash, 1997). Body image is multidimensional in that it encompasses affective, perceptual, and evaluative components, and it is complex in that it incorporates feelings about body size and weight, appearance and attractiveness, functioning, and so on (Hosseini & Padhy, 2019; Smolak, 2006; Wertheim & Paxton, 2011).

Specific body image concerns vary depending on the population of interest. The desire for thinness, particularly in women, has been the focus of body image research for much time (Grogan, 2016; Tiggemann, 2004). This is likely due to the gender difference in body image favoring men, as well as the relatively greater societal emphasis on women's appearances compared to men's (Bordo, 1993; Fredrickson & Roberts, 1997; Gestsdottir et al., 2015; Gillen & Lefkowitz, 2006). However, body image encapsulates feelings about muscularity, attractiveness, and other factors in addition to weight and thinness (Mendelson et al., 2001; Pope et al., 1999), and societal ideals differentially emphasize each of these aspects by gender (Cafri

& Thompson, 2004; Stice, 2003). Men's body image concerns frequently manifest as a drive for muscularity due to the popular muscular male body ideal (Grogan, 2006; Hoffmann & Warschburger, 2017; Murray & Touyz, 2012; Peixoto Labre, 2002; Teti et al., 2020).

Furthermore, given the multidimensional nature of body image, researchers may specifically examine body appreciation, body (dis)satisfaction, drive for thinness/muscularity, and so on (Kling et al., 2019). An increased focus on understanding positive body image has recently emerged in the literature, shifting from the clinical origins of the field (Cash & Smolak, 2011; Kling et al., 2019). The current research takes a mostly positive approach to body image by examining body appreciation, healthy perceived weight, and perceived attractiveness; the drive for muscularity, which specifically captures muscularity-oriented aspects of body image, is also included (McCreary & Sasse, 2000).

Adolescence and young adulthood are important periods for the development of body image (Ata et al., 2007; Wardle et al., 2006). Children internalize attractiveness ideals from a young age, and researchers have identified specific societal pressures, such as the pressure for women to be thin, as young as 7-10 years of age (Ricciardelli & McCabe, 2001; Shapiro et al., 1997). However, adolescents are inundated with new stressors, including their changing bodies, increasingly salient societal ideals regarding behavior and appearance, and a host of other biopsychosocial influences on body image (Bucchianeri et al., 2013; Markey, 2010; Rodgers et al., 2014). For example, some factors that may influence body image in adolescence include changing family relationships (Markey, 2010), peer influences (Jones & Crawford, 2006), bodily changes associated with pubertal development (Bucchianeri et al., 2013; O'Dea & Abraham, 1999), romantic relationships (Markey & Markey, 2011), and messages from the media (Lawrie et al., 2006). Body image continues to evolve into young adulthood (Gestsdottir et al., 2015;

Kvalem et al., 2019). However, longitudinal studies yield mixed results regarding whether the overall trajectory into young adulthood tends to be beneficial or detrimental (e.g., Bucchianeri et al., 2013; Kvalem et al., 2019).

Body image is a large contributor to young people's overall sense of self (Harter, 2003; Harter & Whitesell, 2001). Unfortunately, issues with body image in adolescence and young adulthood are common and influential (Smolak, 2004). Body dissatisfaction contributes to depression (Smolak, 2006; Stice & Bearman, 2001; Wichstrøm, 1999) and the development of eating pathology (Stice, 2002; Striegel-Moore & Franko, 2008). On the other hand, healthy body image in adolescence is linked to positive downstream effects, such as better mental health and social behavior (O'Dea, 2012). The importance of body image for overall psychological functioning highlights the need for an integrated, nuanced developmental approach to examine body image across these important transitional periods.

### **Body Image in LGBTQ+ Individuals**

LGBTQ+ individuals may experience body image in ways that are unique and different from heterosexual and cisgender individuals (McClain & Peebles, 2016; Haines et al., 2008; Smith et al., 2019; Tabaac et al., 2018). First, while all young adults must consolidate an identity and sense of self (Markey, 2010), LGBTQ+ youth must simultaneously navigate the unparalleled process of coming to recognize and disclose their sexual and gender identities (Floyd & Stein, 2002), and it is unclear how these unique challenges may influence body image. Second, while all young adults are exposed to gendered societal expectations and pressures (Pitman, 1999), these pressures may be experienced differently within the LGBTQ+ community or compounded by additional heteronormative pressures (Smith et al., 2019).

First, the developmental tasks associated with adolescence and young adulthood are complicated in sexual and gender minority individuals by the overlapping task of consolidating an LGBTQ+ identity (Logan & Carter, 2017; McGuire et al., 2016), and few studies have examined how this may influence body image specifically. LGBTQ+ young adults may face significant stressors throughout this process, such as peer victimization (Zaikman et al., 2020), and such stressors are associated with devastating outcomes like suicidal thoughts and behaviors (Hatchel, Ingram, et al., 2019; Hatchel, Merrin, et al., 2019; Hatchel, Valido, et al., 2019; Heiden-Rootes et al., 2020). Homophobic and heterosexist societal attitudes also serve as a backdrop for these developmental processes (Hong & Garbarino, 2012). The minority stress theory (Brooks, 1981; Meyer, 1995) indicates that chronic stress associated with prejudice and discrimination leads to mental health issues in members of stigmatized communities (Friedman, 1999), such as the LGBTQ+ community (Heiden-Rootes et al., 2020; Meyer, 2003). Body image is certainly included among such mental health outcomes (He et al., 2020; Williamson, 1999), although research on LGBTQ+ young adults' body image is lacking (Tabaac et al., 2018).

Second, young people's body image develops in conversation with gendered societal expectations (Gillen & Lefkowitz, 2006; Hill & Lynch, 1983), and these expectations may be experienced differently by members of the LGBTQ+ community (Mendle et al., 2019). This idea is demonstrated by research on body image within subgroups of the LGBTQ+ community. First, a substantial body of literature suggests that sexual minority women tend to have better body image than their heterosexual counterparts (Alvy, 2013; Austin et al., 2004; Bergeron & Senn, 1998; Lakkis et al., 1999; Miller & Luk, 2019), and some attribute this difference to acceptance of more diverse body types and rejection of harmful societal beauty ideals in sexual minority women (Burnette et al., 2019; Swami & Tovée, 2006). However, other research has revealed no

such differences between lesbians and heterosexual women (Beren et al., 1996; Striegel-Moore et al., 1990; Peplau et al., 2009), which may suggest that overarching societal beauty pressures affect all women, regardless of sexual orientation (Koff et al., 2010; Smith et al., 2019). Second, sexual minority men overwhelmingly demonstrate more negative body image than heterosexual men (Badenes-Ribera et al., 2018; Beren et al., 1996; Frederick & Essayli, 2016; He et al., 2020; Lakkis et al., 1999; Morrison et al., 2004; Peplau et al., 2009), perhaps due to the stress that sexual minority men may feel because of the stereotype that gay men are effeminate or unmanly (He et al., 2020). Third, trans individuals in general exhibit poorer body image than cisgender individuals (Vocks et al., 2009); body image is crucial to gender identity and gender dysphoria (Jones et al., 2016; Teti et al., 2020), and trans body image concerns often relate to the desire to achieve a gendered physical ideal (Ålgars et al., 2012; Ewan et al., 2014). In short, gender influences the development of body image (Smolak, 2004), and gender is understood, experienced, and expressed in unique and varied ways within the LGBTQ+ community (Jones et al., 2019; Levitt, 2019; Watson, 2019). This necessitates considering LGBTQ+ youth as a population of interest for the development of body image.

### **Current Influences on Body Image**

LGBTQ+ individuals continue to navigate and manage their identities throughout their lives (Zaikman et al., 2020). For that reason, the present research evaluates several dimensions of LGBTQ+ young adults' current lives to assess influences on body image. Masculinity, femininity, and current outness are examined in the present research.

#### ***Masculinity and Femininity***

The extent to which individuals identify with traditionally masculine and feminine qualities may influence body image (Gil, 2007; Hawkins, 1983). Some research suggests that

masculinity may serve as a protective factor (and femininity a risk factor) for body image disturbance, highlighting the overall social valuation of masculinity over femininity (Broverman et al., 1972; Massey et al., 2020). Masculinity and femininity may be particularly important for LGBTQ+ individuals' body image, as the community includes a diverse range of individuals that experience and express such traits in ways that may or may not align with traditional ideas about gender (Romito et al., 2021; Watson, 2019). LGBTQ+ individuals also recognize their identities in the context of heterosexist societal forces that encourage conformity to traditional gender roles (Schroeder & Liben, 2021), thus pressuring LGBTQ+ individuals to perform masculinity or femininity depending on their gender/sex.

Masculine-typed traits include ambitious, independent, dominant, and so on (Bem, 1974). The relationship between masculinity and body image is complex and may vary depending on the measure of body image used (Griffiths et al., 2014). In general, masculinity is beneficial for body satisfaction (Steele et al., 2019), perhaps due to its positive association with self-esteem (Lamke, 1982) or the high social value granted to masculine traits (Massey et al., 2020). The positive influence of masculinity on body image has been shown across many diverse samples, such as heterosexual and homosexual men (Hospers & Jansen, 2005), lesbian women (Henrichs-Beck & Szymanski, 2016), and bisexual women (Steele et al., 2019). However, most research on body image has focused on thinness as an indicator of body satisfaction, particularly in women (Tiggemann, 2004). While it is true that body dissatisfaction in some men may relate to a desire for thinness (Olivardia et al., 2004), the relatively recent increase in the study of male body image (Grogan, 2006) has drawn attention to the drive for muscularity as an aspect of body image, which reflects the Western male muscular body ideal (Murray & Touyz, 2012; Pope et al., 1999). The masculinity hypothesis states that conformity to masculine norms poses a risk



factor for muscularity-driven body dissatisfaction and disordered eating as individuals navigate a feeling of vulnerability regarding their masculinity (Blashill, 2011; Murray & Touyz, 2012). This hypothesis is supported by some empirical data (Griffiths et al., 2014; Steinfeldt et al., 2011). For example, a study of 157 men and 343 women demonstrated that self-reported male-typed traits and behaviors related to the need to be more muscular (McCreary et al., 2005), suggesting that the masculinity hypothesis may not be limited to men. Informed by the complexity of the literature, the present research examines the effects of masculinity on two body image measures: body appreciation and drive for muscularity.

Femininity is generally considered to be detrimental to body image, specifically the drive for thinness, due to societal beauty pressures (Cella et al., 2013; Koff et al., 2010; Snyder & Hasbrouck, 1996). Feminine-typed traits, such as nurturance and passivity, may contribute to low self-esteem and approval-seeking tendencies and therefore lead to body dissatisfaction as individuals strive to achieve body ideals (Griffiths et al., 2014; Lakkis et al., 1999); this is referred to as the femininity hypothesis (Lakkis et al., 1999; Meyer et al., 2001; Murray & Touyz, 2012). Some research supports this idea; for example, a study of 188 lesbian and bisexual women found that women who self-reported as more feminine had lower body satisfaction than androgynous or masculine women (Ludwig & Brownell, 1999). Furthermore, a study of 246 heterosexual young men suggested that the femininity hypothesis may not be limited to women (Griffiths et al., 2014). However, the literature is not conclusive; for example, a 2019 study found femininity to be positively related to body satisfaction in bisexual, but not lesbian, women (Steele et al.). This demonstrates the need for nuance in future research involving the LGBTQ+ community, which is one goal of this research.

### ***Current Outness***

An LGBTQ+ individual's level of outness refers to the degree to which they are open about their identity and/or behaviors with others (Frost & Meyer, 2009; Gios et al., 2021). The process of coming out is important to LGBTQ+ identity development in that it reflects a degree of self-exploration and acceptance (Troiden, 1979; Zaikman et al., 2020). Adolescence and young adulthood are important times for the consolidation of a coherent identity in all young people (Benson et al., 2007), so it follows that outness is also relevant to LGBTQ+ individuals' identity development during this time (Kosciw et al., 2015). Outness has historically been operationalized as an out-or-not-out dichotomy (Kosciw et al., 2015), but more recent work has attempted to capture the complexity of outness as a scale that may differ across various domains (e.g., the Outness Inventory; Mohr & Fassinger, 2000).

Outness confers a combination of benefits and risks for LGBTQ+ individuals (Corrigan & Matthews, 2003; Zaikman et al., 2020). Overall, outness is associated with higher self-esteem, lower depression, and overall positive adjustment (Kosciw et al. 2010; Morris et al., 2001; Rasmussen, 2004; Russell et al., 2014). However, LGBTQ+ young adults may also deal with peer victimization, which may increase through the coming out process (Chesir-Teran & Hughes, 2009; Zaikman et al., 2020). In coming out, LGBTQ+ young people may suffer both directly from peer victimization and indirectly, as peer victimization is associated with suicidal thoughts and behaviors, poor academic outcomes, and other adverse consequences (Hatchel, Ingram, et al., 2019; Hatchel, Valido, et al., 2019; Heiden-Rootes et al., 2020; Kosciw et al., 2015). Ultimately, coming out has been shown to increase self-esteem, even despite victimization (Logan & Carter, 2017). For example, a 2015 study of 7,816 LGBT young adults found that higher outness was indeed associated with higher victimization, but also with higher self-esteem and lower depression (Kosciw et al.). In short, outness is a complex, socially embedded

phenomenon that has overall benefits for LGBTQ+ individuals, even despite the challenges associated with it (Feldman & Wright, 2013).

Outness may be related to body image, as bodies and physical presentation cues are important to LGBTQ+ identity and can indicate one's sexual or gender identity (Levitt, 2019). For example, slicked back short hair became a signifier of butch lesbian identity around the 1950s (Levitt, 2019). An individual's degree of outness is frequently a reflection of their environment (Dentato, 2014; Evans & Broido, 1999); lower outness may mean that individuals are not able to express themselves or are expected to perform gender ideals with which they may or may not identify (Pitman, 1999; Rich, 1980), which may be detrimental to body image. Lower outness may also be related to internalized homophobia (Totenhagen et al., 2018), which is associated with worse body image (Badenes-Ribera et al., 2018; Haines et al., 2008). To our knowledge, no studies to date have directly examined the link between outness and body image across the LGBTQ+ community; however, the connection between outness and well-being in general (Strain & Shuff, 2010; Zaikman et al., 2020) makes it urgent to examine these relations.

### **Developmental Influences on Body Image**

LGBTQ+ young people juggle many stressors across the transition from childhood to adolescence to young adulthood. Thus, the present research examines several developmental factors which may influence body image. Perceived social support, sexual identity development milestones, and pubertal timing are included in the current research.

#### ***Perceived Social Support***

Social support refers to psychological resources provided to an individual by others that allow that individual to feel loved, valued, and supported in coping with stress (Yayan & Çelebioğlu, 2018). Social support comes from one's community, friends, family, and so on, and

it contributes to healthy development for adolescents and young adults (McDonald, 2018; Rigby, 2000). High social support is linked to overall well-being and self-esteem (Bovier et al., 2004; Chu et al., 2010; Ikiz & Cakar, 2010), and conversely, low social support relates to detrimental outcomes in youth, such as depressive symptoms (Alsubaie et al., 2019), suicidal ideation (Ibrahim et al., 2019), and bullying perpetration and victimization (Heerde & Hemphill, 2018; McDonald, 2018). The mechanism of this link is likely that social support provides individuals with positive emotions, buffers against the negative effects of stress, and reinforces self-esteem (Chu et al., 2010; Cohen, 2004; Cohen & Wills, 1985). While social support is multidimensional and can be measured in many ways, perceived social support has been found to be more relevant to well-being than other measures, such as social network size (Chu et al., 2010; French et al., 2018); thus, the current research assesses perceived social support.

Social support may be related to body image specifically (Brausch & Decker, 2014). Empirical evidence supports a connection between low social support and body image concerns, particularly for adolescent girls (Archibald et al., 1999; Gerner & Wilson, 2005; Stice & Whitenton, 2002). While less research has examined such links in young boys (Ata et al., 2007), boys' weight concerns, feelings about their bodies, body change methods, etc. may be influenced by factors related to social support, such as conflict and messages from parents (May et al., 2006; Ricciardelli et al., 2000). One longitudinal study of 428 adolescent girls and boys found deficits in parental support to be related to future increases in body dissatisfaction in both genders; peer support was significant in some instances (Bearman et al., 2006). The authors propose that social support may protect against body dissatisfaction, and vice versa, a lack of social support may heighten vulnerability as individuals attempt to conform to body ideals to gain acceptance.

As important as social support is for all young people, it is particularly crucial for the healthy development and overall well-being of LGBTQ+ individuals (McDonald, 2018). Social support helps LGBTQ+ young people deal with the stressors associated with recognizing and disclosing their identities (McDonald, 2018). This idea has existed in the literature for decades; for example, a 1995 study of LGB adolescents found that family support mediated the relation between victimization and mental health outcomes (Hershberger & D'Augelli). Research points to the myriad of positive outcomes associated with social support in LGBTQ+ youth, such as higher self-esteem and lower depression (Watson et al., 2019; Wilkerson et al., 2017). For example, a study of 245 LGBT young adults found that social support from one's family, friends, and community strongly predicted positive outcomes, such as self-esteem (Snapp et al., 2015).

Moreover, social support is particularly important during the coming out process (McDonald, 2018; Muñoz-Plaza et al., 2002). For example, a study of 499 lesbian women found that social support was positively associated with the degree of disclosure regarding their sexual orientation to family, both heterosexual and gay friends, and co-workers (Jordan & Deluty, 1998). A 2018 analysis of interviews with LGB young adults revealed that the coming out process distorted some participants' relationships within their social support system, suggesting lasting effects of the interaction between social support and sexual identity development (Emetu & Rivera). Due to the importance of social support during this developmental process for LGBTQ+ youth, perceived social support is assessed as a developmental rather than current influence in this research. We use both an earlier measure of perceived social support to longitudinally predict body image, as well as participants' retrospective self-reports of their perceived social support when they initially came out.

### ***Timing of Sexual Identity Development Milestones***

Sexual identity development milestones are salient events in the lives of sexual minorities that represent self-awareness, exploration, and personal identification as a sexual minority (Floyd & Stein, 2002; Martos et al., 2015). Examples include, but are not limited to, (age of) first self-recognition as queer, first identity disclosure to another person, and first same-gender/sex sexual experience (Groves et al., 2006; Parks & Hughes, 2007). These milestone measures are informed by theoretical models of sexual identity development, which have long attempted to capture sexual identity development from a stage-sequential perspective (Cass, 1979, 1996; Rotheram-Borus & Langabeer, 2001; Troiden, 1989). Common themes unite these models: individuals begin with a sense of differentness, navigate the process of disclosing their identity to others, and ultimately reach the ideal final stage of identity integration (Eliason & Schope, 2007). While more recent theoretical work has moved away from the idea that sexual identity development is necessarily linear (Brumbaugh-Johnson & Hull, 2019), the cross-cutting themes of the classic models informed the three categories of sexual identity development milestones used in the present research: internal realizations milestones, such as self-awareness; disclosure milestones, such as sharing one's identity with family members; and romantic and sexual experiences milestones, such as same-gender/sex relationship involvement (Haltom & Ratcliff, 2020; Martos et al., 2015; Parks & Hughes, 2007).

The literature is mixed regarding relations between the timing of sexual identity development milestones and well-being (Friedman et al., 2008; Jager & Davis-Kean, 2011; Rendina et al., 2019; Rosario & Schrimshaw, 2013). Early sexual identity developmental trajectories have been linked to some positive outcomes, such as higher comfort with one's sexual orientation (Floyd & Stein, 2002; Herdt & Boxer, 1996). However, early trajectories also pose a risk for negative outcomes, such as victimization or bullying (Henrickson, 2007) and risk

for later mental health problems (Gnan et al., 2019). This combination of benefits and risks is reminiscent of the literature on outness; once again, the potential connection to well-being in general necessitates further research specifically examining body image.

To our knowledge, no studies have specifically examined relations between the timing of sexual identity development milestones and body image; however, it is urgent to assess these relations. LGBTQ+ individuals are coming out at increasingly younger ages (Floyd & Bakeman, 2006; Grov et al., 2006), so if the timing of sexual identity development milestones does influence body image, then these trends may be consequential. The present research seeks to provide a foundation of knowledge to the literature.

### ***Pubertal Timing***

Puberty is a time of significant biological and social maturation in which adolescents make sense of their own bodily changes and reconcile these changes with gendered societal attractiveness ideals (Stice, 2003). The physical changes associated with puberty are typically measured by the Tanner stages and include, but are not limited to, breast growth in girls, testes growth in boys, and pubic hair growth (Marshall & Tanner, 1969, 1970). These changes occur in the broader social context of adolescence, as individuals navigate increased responsibility, increased sexual interest, and gendered societal expectations (Forbes & Dahl, 2010; Stice, 2003). Body image is a critical issue for adolescents as they adapt to sexual maturity, weight gain, and other bodily changes (Bucchianeri et al., 2013; McGuire et al., 2016), as well as gendered expectations regarding behavior and appearance that become more salient at puberty (Gillen & Lefkowitz, 2006; Stice, 2003).

Pubertal timing refers to the timing of the onset of puberty in relation to one's same-gender/sex peers (Copeland et al., 2019; Graber et al., 1997). Self-reports are frequently used to

assess pubertal timing (Mendle, 2014); self-reports taken both during adolescence and retrospectively have demonstrated sufficient reliability and validity (Norris & Richter, 2005; Petersen et al., 1988). Self-report questions assessing pubertal timing may inquire about the timing of various aspects of the pubertal experience, such as menarche, the teenage growth spurt, needing to begin shaving, and so on (Beltz & Berenbaum, 2013).

Both theoretical and empirical research lack consensus on the differential effects of early and late pubertal timing by gender on mental health outcomes (Graber, 2013). Much research agrees on the detrimental influence of early pubertal timing for girls (Mendle & Ferrero, 2012). Early pubertal timing in girls is linked to adverse outcomes such as substance use problems (Copeland et al., 2010; Graber et al., 1997), depressive disorders and symptoms (Graber, 2008; Stice et al., 2001), eating disorders and symptoms (Berger et al., 2009; Klump, 2013), and poor body image (Fonseca & Matos, 2011; Grower et al., 2019; Siegel et al., 1999). In contrast, late pubertal timing in girls is associated with positive outcomes, such as academic achievement (Dubas et al., 1991; Graber et al., 2004). Some research has linked earlier pubertal timing to psychopathological outcomes in adolescent boys (Hamlat et al., 2019; Ullsperger & Nikolas, 2017). Research regarding the effects of late pubertal timing is more mixed (Graber, 2013; Mendle & Ferrero, 2012); however, late-maturing boys may experience detrimental psychological effects, including worse body image (de Guzman & Nishina, 2014; Duncan et al., 1985; Siegel et al., 1999).

Various theories propose mechanisms underlying these relations. First, the maturation disparity hypothesis points to the disparity between physical and psychological maturation in conferring risk to early-maturing adolescents (Ge & Natsuaki, 2009; Nelson et al., 2005). Second, the hormonal influence hypothesis proposes that early-maturing adolescents experience



risk for psychopathological outcomes due to their brains secreting more adrenal and gonadal hormones during this sensitive developmental time (Ge & Natsuaki, 2009). Third, the gendered deviation hypothesis proposes that early-maturing girls and late-maturing boys each face unique risks from stressful peer comparisons (Brooks-Gunn et al., 1994; Sontag et al., 2011).

Given that body image is a critical issue for all adolescents, those whose sexual or gender identities do not align with societal expectations face additional challenges (McClain & Peebles, 2016; McGuire et al., 2016). The gendered societal expectations regarding appearance and behavior that all adolescents must navigate may be particularly salient for LGBTQ+ adolescents (Mendle et al., 2019). Furthermore, puberty can be uniquely challenging for adolescents whose gender is incongruent with their body because the bodily changes associated with pubertal maturation can serve as a salient reminder of the incongruence (McGuire et al., 2016; Mendle & Koch, 2019). Transgender, nonbinary, and other gender nonconforming adolescents juggle gendered societal expectations, growing sexual interest, and physical development, with which they may or may not identify (Crockett et al., 2019; Vance et al., 2014). In addition to these changes and challenges, puberty is also a time in which some adolescents recognize queer attractions (Grossman et al., 2014). Adrenarche, an early stage in pubertal development marked by increased adrenal androgen production, is associated with increased sexual interest in adolescents of all sexual orientations (Suleiman & Harden, 2016; Herdt & McClintock, 2000). Therefore, adolescents often first recognize queer attractions and sexual orientations due to this increase in sexual desire (Mendle et al., 2019; Savin-Williams, 1998). LGBTQ+ youth are greatly underrepresented in puberty research (Crockett et al., 2019; Deardorff et al., 2019), and more research should investigate how LGBTQ+ experiences of puberty influence body image.

### **The Present Research**

The current research assessed potential predictors of LGBTQ+ individuals' body image. To this end, two studies were conducted: a secondary analysis of the National Longitudinal Study of Adolescent to Adult Health (Add Health) and an original survey.

Study 1 drew on 892 non-heterosexual cisgender participants from the Add Health dataset to examine relations between predictors in adolescence (perceived social support and three indicators of pubertal timing) and body image indicators in young adulthood (healthy perceived weight and perceived attractiveness). Participants were around 16, 21, and 28 years of age during each of the included waves, respectively. The Add Health study offered a valuable longitudinal perspective on queer body image.

Study 2 analyzed results from 484 self-identified LGBTQ+ individuals who completed a survey distributed via social media in the fall of 2020. This study provided a younger cohort with a broader range of LGBTQ+ identities, including trans and gender nonconforming individuals. The survey also allowed the use of additional predictors that were not available in the Add Health dataset, such as the timing of sexual identity development milestones.

While the mean ages in the Add Health and survey studies were comparable, the birth years were not. The participants in Study 1 were born between the years of 1974-1983 and therefore came of age during a time in which LGBTQ+ identities were generally less accepted. The survey data provided a contemporary perspective, with participants born between the years of 1990-2002 and therefore coming of age in a (generally) more accepting climate. It is unclear whether these differences in experience affected the relations of interest in this study.

## **Hypotheses**

### ***Study 1***

We tested hypotheses in terms of two indicators of body image: healthy perceived weight and perceived attractiveness. Study 1 examined two developmental influences: perceived social support and pubertal timing.

**Hypothesis 1.1.** We hypothesized that perceived social support (Wave II) predicts higher healthy perceived weight and higher perceived attractiveness at both Waves III and IV.

**Hypothesis 1.2.** Based on the literature on adolescents “in general,” we tested whether there is a significant positive relation between pubertal timing and downstream body image in queer women and a significant negative relation between pubertal timing and downstream body image in queer men. We hypothesized that these relations hold for each of our three indicators of pubertal timing for each gender/sex group.

### *Study 2*

We tested hypotheses in five groups in terms of two indicators of body image: body appreciation and drive for muscularity. Study 2 examined three current influences (masculinity, femininity, and current outness) and three developmental influences (previous perceived social support, the timing of sexual identity development milestones, and relative pubertal timing). The five groups were cisgender women, transgender women, cisgender men, transgender men, and gender nonconforming individuals.

**Hypothesis 2.1.** We predicted that masculinity relates to higher body appreciation and higher drive for muscularity for LGBTQ+ young people.

**Hypothesis 2.2.** We predicted that femininity relates to lower body appreciation and lower drive for muscularity for LGBTQ+ young people.

**Hypothesis 2.3.** We predicted that current outness relates to higher body appreciation and may also relate to drive for muscularity for LGBTQ+ young people.

**Hypothesis 2.4.** We predicted that previous perceived social support relates to higher body appreciation and may also relate to drive for muscularity for LGBTQ+ young people.

**Hypothesis 2.5.** We predicted that earlier timing of internal realizations milestones and disclosure milestones, respectively, each relate to higher body appreciation and may also relate to drive for muscularity for LGBTQ+ young people. In addition, we predicted that earlier timing of romantic and sexual experiences milestones relates to lower body appreciation and may also relate to drive for muscularity for LGBTQ+ young people.

**Hypothesis 2.6.** Again, we tested whether there is a significant positive relation between relative pubertal timing and body image in queer women and a significant negative relation between relative pubertal timing and body image in queer men.

## **Study 1**

### **Method**

#### **Study Design**

Add Health is a nationally representative survey of adolescents attending United States schools. These adolescents were in grades 7-12 in 1994-1995 and were subsequently followed into adulthood (Harris, 2013). Add Health originated with in-school questionnaires that were completed by over 90,000 students, followed by a combined stratified subsample and supplementary sample of 20,745 students who then completed 90-minute in-home interviews. In 1996, Wave II collected in-home interview data from 14,738 adolescents who were either in grades 7-11 at Wave I or were part of the genetic or adopted samples at Wave I. The transition into adulthood was captured by Wave III follow-ups in 2001 and 2002, with 15,170 participants completing in-home interviews. Wave III drew on an additional special “couples sample” that recruited romantic partners of Add Health participants. In Wave IV, 15,701 of the original

participants were re-interviewed between 2008 and 2009. An in-depth description of Add Health design features can be found in Harris (2013).

This study drew on the Add Health public-use data available through the Inter-university Consortium for Political and Social Research. The measures used in this study were from the in-home interviews from Waves II-IV.

### **Participants**

See Study Design for more information about the sample size for in-home interviews at each wave. The current study used a broadly defined queer subsample of participants from Waves I-IV. To be inclusive of the identity, attraction, and behavior elements of sexual orientation (Laumann, 2000), this study included each of these elements in collecting the queer sample. Participants were included in this study if they met any of the following qualifications: self-labeled as anything other than 100% heterosexual (Waves III-IV), expressed that they have ever had a romantic attraction to someone of the same gender/sex (Waves I-IV), indicated that they have had sex with one or more people of the same gender/sex (Wave IV), or shared that they have had sexual relationships with either people of the same gender/sex or both young women and young men (Waves I-II). Participants were then excluded if their gender/sex was missing at any point ( $N = 612$ ). Participants whose gender/sex changed at any point ( $N = 2$ ) were excluded from the current study due to the low sample size.

This resulted in a sample of 892 participants for every wave (583 young women, 309 young men). The age ranges for the young women were: 14-22 years at Wave II, 19-27 years at Wave III, and 25-34 years at Wave IV. The age ranges for the young men were: 14-21 years at Wave II, 19-26 years at Wave III, and 26-33 years at Wave IV.

There was a large age range (14-34) across waves. For consistency, we use the terms “young women” and “young men” to refer to all participants throughout all waves according to their gender/sex, which was binary in this dataset.

### **Measures**

The complete Add Health dataset contains a broad range of measures related to health; however, this section describes only the measures of interest for this study. We recoded the following responses as missing: “refused,” “don’t know,” “legitimate skip,” and “not applicable.”

#### ***Gender/Sex (Waves I-IV)***

At each wave, the interviewer confirmed each participant’s gender/sex and asked for clarification if necessary. For that reason, we use the phrase “gender/sex,” as the Add Health measure is in fact a composite. This study included participants who were not missing data for gender/sex at any wave and whose gender/sex did not change across waves. Gender/sex was coded 1 = *male* or 2 = *female*. The binary nature of the gender/sex variable constitutes a limitation in that it does not represent the wide range of gender identities that exist; however, Add Health does not contain any additional relevant measures.

#### ***Age (Waves I-IV)***

We computed participant age by subtracting each participant’s birth year from their interview year.

#### ***Body Image Indicators (Waves III-IV)***

Two measures were used as indicators of body image: healthy perceived weight and perceived attractiveness. These two indicators were significantly positively correlated with each

other within both waves; however, the Cronbach's alphas did not justify combining them (Wave III:  $\alpha = .28$ , Wave IV:  $\alpha = .32$ ).

**Healthy Perceived Weight (Waves III-IV).** Participants' healthy perceived weight was measured in response to the question: "How do you think of yourself in terms of weight?" Responses were measured using a five-point Likert scale ranging from *very underweight* to *very overweight*. We recoded this item to a three-point scale to create a measure of healthy perceived weight. Participants who rated themselves as a 3 (*about the right weight*) in the original measure were recoded as a 3 (*about the right weight*), indicating the highest healthy perceived weight. Participants who rated themselves as either a 2 (*slightly underweight*) or a 4 (*slightly overweight*) in the original measure were recoded as a 2 (*off by 1 degree*). Participants who rated themselves as either a 1 (*very underweight*) or a 5 (*very overweight*) in the original measure were recoded as a 1 (*off by 2 degrees*), indicating the lowest healthy perceived weight. Thus, a higher score on the healthy perceived weight measure indicated a higher healthy perceived weight, or better body image. The Pearson's  $r$  correlations between healthy perceived weight at Waves III and IV were .54 for young women and .28 for young men.

**Perceived attractiveness (Waves III-IV).** Participants' perceived attractiveness was measured in response to the question: "How attractive are you?" Responses were measured using a four-point Likert scale ranging from *very attractive* to *not at all attractive*. We recoded this item so that higher scores indicated higher perceived attractiveness. The correlations between perceived attractiveness at Waves III and IV are .48 for young women and .11 for young men.

#### ***Perceived Social Support (Wave II)***

We created an aggregate perceived social support measure by taking the mean of four standardized variables. Participants responded to the following questions: "How much do you

feel that adults care about you?"; "How much do you feel that your teachers care about you?"; "How much do you feel that your friends care about you?"; and "How much do you feel that your parents care about you?" Responses were measured for each question on a five-point Likert scale (1 = *not at all*, 2 = *very little*, 3 = *somewhat*, 4 = *quite a bit*, 5 = *very much*). Therefore, a higher score on the perceived social support measure indicated higher perceived social support. Cronbach's alpha for perceived social support items in the present sample was .67.

### ***Pubertal Timing Indicators (Wave II)***

We used three pubertal timing indicators for each gender/sex. All indicators of pubertal timing were significantly correlated with each other for young women and young men, respectively; however, the Cronbach's alphas did not justify combining the indicators for each gender/sex (young women:  $\alpha = .48$ ; young men:  $\alpha = .59$ ). Furthermore, a variety of genetic, nutritional, and other factors influence each of these indicators in unique ways (e.g., Buck Louis et al., 2008; Gajdos et al., 2010; Günther et al., 2010), suggesting that each indicator may provide valuable information on its own. We used pubertal timing indicators from Wave II instead of Wave I because more participants had entered puberty by Wave II.

First, young women's pubertal timing was measured using three separate indicators: relative physical development, early menarche, and breast development.

**Relative Physical Development.** Young women's physical development relative to their same-gender/sex peers was assessed with the question: "How advanced is your physical development compared to other girls your age?" Responses were measured using a five-point Likert scale (1 = *I look younger than most*, 2 = *I look younger than some*, 3 = *I look about average*, 4 = *I look older than some*, 5 = *I look older than most*). Thus, a higher score on the relative physical development variable indicated earlier pubertal timing.



**Early Menarche.** Young women's age at menarche was assessed with the question: "How old were you when you had your very first menstrual period?" Participants responded with the appropriate age in years. The Add Health dataset coded all responses that were less than or equal to 7 as *7 = 7 or younger*. All responses that were greater than or equal to 17 were coded as *17 = 17 or older*. If a participant shared an age between 8 and 16, their age was coded as that number. We recoded this age at menarche into an 11-point measure for early menarche. For example, a response of "7 or younger" for the age at menarche question was recoded as 11 = *earliest menarche*. A response of "17 or later" for the age at menarche question was recoded as 1 = *latest menarche*. The pattern followed with the ages in between, with younger ages at menarche recoded as higher measures on the early menarche variable. Thus, a higher score on the early menarche variable indicated earlier pubertal timing, consistent with the other indicators.

**Breast Size Change.** Young women's breast size change was assessed with the question: "As a girl grows up her breasts develop and get bigger. Which sentence best describes you?" Responses were measured using a five-point Likert scale (1 = *My breasts are about the same as when in grade school*, 2 = *My breasts are a little bigger than when in grade school*, 3 = *My breasts are somewhat bigger than when in grade school*, 4 = *My breasts are a lot bigger than when in grade school*, 5 = *My breasts are a whole lot bigger than when in grade school*). Thus, a higher score on the breast size change variable indicated earlier pubertal timing.

Second, young men's pubertal timing was measured using three separate indicators: relative physical development, facial hair, and voice change.

**Relative Physical Development.** Young men's physical development relative to their same-gender/sex peers was assessed with the question: "How advanced is your physical development compared to other boys your age?" Responses were measured using a five-point

Likert scale (1 = *I look younger than most*, 2 = *I look younger than some*, 3 = *I look about average*, 4 = *I look older than some*, 5 = *I look older than most*). Thus, a higher score on the relative physical development variable indicated earlier pubertal timing.

**Facial Hair.** Young men's facial hair thickness was assessed with the question: "How thick is the hair on your face?" Responses were measured using a four-point Likert scale (1 = *I have few scattered hair/growth isn't thick*, 2 = *Hair is somewhat thick/still see a lot of skin under it*, 3 = *Hair is thick/can't see much skin under it*, 4 = *Hair is very thick/like grown man's facial hair*). Therefore, a higher score on the facial hair variable indicated earlier pubertal timing.

**Voice Change.** Young men's voice change was assessed with the question: "Is your voice lower now than it was when you were in grade school?" Responses were measured using a five-point Likert scale (1 = *No/about the same as when in grade school*, 2 = *Yes/a little lower as when in grade school*, 3 = *Yes/somewhat lower than when in grade school*, 4 = *Yes/a lot lower than when in grade school*, 5 = *Yes/a whole lot lower than when in grade school*). Thus, a higher score on the voice change variable indicated earlier pubertal timing.

### **Data Analysis**

Statistical analyses were completed using IBM SPSS Statistics, Version 27. First, we conducted *t*-tests to assess differences between young women and young men on the body image indicators (each for Waves III and IV) and social support (with the Wave III and Wave IV samples, respectively). The pubertal timing indicators were not included, as these were specific to each gender/sex group. Second, we calculated Pearson's *r* correlations between the variables of interest for each gender/sex.

Finally, to examine our main predictions, we used hierarchical regressions to assess links between the predictors (perceived social support at Wave II and the pubertal timing indicators)

and outcomes (healthy perceived weight and perceived attractiveness, each at Waves III and IV) for young women and young men, respectively. We focused on the significance of each predictor as opposed to the overall model significance because we were not interested in whether the group of predictors significantly predicted the outcomes; however, we report the model statistics.

## **Results of Study 1**

### **Descriptive Statistics and *t*-test Results**

Table 1 presents descriptive statistics for all variables for both young women and young men. Table 2 presents the results of *t*-test analyses comparing young women and young men on key variables. A gender difference favoring young men emerged for healthy perceived weight at both Waves III and IV, consistent with the literature. There were no significant gender differences in perceived attractiveness at either Wave III or IV. A gender difference in perceived social support favoring young women appeared in both Waves III and IV.

### **Bivariate Associations**

Table 3a presents the intercorrelations for young women for the key variables in the regressions to follow.

There was evidence for some over-time consistency, to varying degrees, for young women's body image indicators (i.e., healthy perceived weight and perceived attractiveness). The body image indicators were significantly positively correlated with each other within and across waves. The strong positive correlations between healthy perceived weight across Waves III and IV and perceived attractiveness across Waves III and IV, respectively, suggested that these measures remained relatively consistent over time for young women. Furthermore, the moderate positive correlations among healthy perceived weight and perceived attractiveness both within and across waves suggested that these measures were related. However, the correlations

were not strong enough to justify aggregation, so the body image indicators were treated separately in subsequent analyses.

Correlations among the three indicators of pubertal timing in young women (i.e., relative physical development, early menarche, and breast size change) were moderate and significant. However, these measures were not correlated enough to justify aggregation, so the pubertal timing indicators were treated separately in subsequent analyses. Perceived social support was not significantly correlated with any of the three puberty indicators in young women.

Recall that the four dependent variables tested were healthy perceived weight and perceived attractiveness, each at Waves III and IV; the variables used as predictors were perceived social support and the three indicators of pubertal timing for each gender/sex. Five of the 16 correlation coefficients between dependent variables and variables used as predictors were significant. Specifically, later menarche in young women was associated with higher healthy perceived weight at both Waves III and IV, as well as higher perceived attractiveness at Wave IV. Less breast size change was associated with higher healthy perceived weight at both Waves III and IV.

As noted above, Table 1 presents the descriptive statistics for young men, as well as young women. Table 3b presents the intercorrelations for young men for the key variables in the regressions to follow.

There was evidence for some over-time consistency for young men for the body image indicators (i.e., healthy perceived weight and perceived attractiveness). For example, a moderately significant positive correlation was found between healthy perceived weight at Wave III and IV, suggesting some over-time consistency in individuals' perceptions of their weight. Similarly, a moderately significant positive correlation was found between perceived

attractiveness at Wave III and IV, suggesting some over-time consistency in individuals' perceptions of their attractiveness. While healthy perceived weight and perceived attractiveness were significantly positively correlated with each other at Wave IV, the two variables did not significantly correlate at Wave III. The lack of consistent correlation between the two indicators of body image suggested it was best to treat them separately in subsequent analyses.

Correlations among the three indicators of pubertal timing in young men (i.e., relative physical development, facial hair, and voice change) were moderately significant. However, these measures were not correlated enough to justify aggregation, so the pubertal timing indicators were treated separately in subsequent analyses. Perceived social support was not significantly correlated with any of the three puberty indicators in young men.

Three of the 16 correlation coefficients between dependent variables and variables used as predictors were significant. Specifically, higher perceived social support in young men was associated with higher perceived attractiveness at both Waves III and IV, and facial hair was significantly negatively correlated with perceived attractiveness at Wave IV.

### **Relations of Predictors to Body Image**

We used SPSS to perform eight hierarchical regressions: four for young women and four for young men. For the regressions using Wave III body image outcomes, participants were only included if they had been labeled as queer using data up to that wave.

Table 4a shows the hierarchical regression results for young women for body image indicators at Waves III and IV in terms of Wave II predictors, which again included perceived social support and three indicators of pubertal timing (i.e., relative physical development, early menarche, and breast size change).

For healthy perceived weight at Wave III, the early menarche and breast size change variables were the only significant predictors. Specifically, higher healthy perceived weight in women was predicted by later pubertal timing, as indicated by later menarche and less breast size change. For healthy perceived weight at Wave IV, the early menarche and breast size change variables continued to be the only significant predictors, suggesting over-time consistency. As before, higher healthy perceived weight in women was predicted by later pubertal timing, as indicated by later menarche and less breast size change.

For perceived attractiveness at Wave III, perceived social support was the only significant predictor, such that higher perceived social support predicted higher perceived attractiveness. For perceived attractiveness at Wave IV, perceived support was a trend, and a lagged effect appeared in which the relative physical development and early menarche variables were significant predictors. This suggested mixed results: higher perceived attractiveness in young women was predicted by both earlier pubertal timing (as indicated by the relative physical development indicator) and later pubertal timing (as indicated by later menarche).

Table 4b presents the hierarchical regression results for young men for body image indicators at Waves III and IV in terms of Wave II predictors, which included perceived social support and three indicators of pubertal timing (i.e., relative physical development, facial hair, and voice change).

For healthy perceived weight at Wave III, perceived social support and relative physical development were the only significant predictors. Specifically, higher healthy perceived weight in young men was predicted by higher perceived social support and later pubertal timing (as indicated by lower relative physical development). For healthy perceived weight at Wave IV, none of the predictors was significant.

For perceived attractiveness at Wave III, perceived social support was the only significant predictor, such that higher perceived attractiveness predicted higher perceived attractiveness. For perceived attractiveness at Wave IV, perceived social support continued to be a significant predictor at the same magnitude. In addition, a lagged effect appeared for the facial hair variable, such that higher perceived attractiveness was predicted by later pubertal timing (as indicated by lower facial hair).

### **Summary**

Healthy perceived weight and perceived attractiveness turned out to have different predictors in young women. Higher healthy perceived weight in young women at both Waves III and IV was predicted by later pubertal timing (as indicated by later menarche and less breast size change). Higher perceived attractiveness at Wave IV was predicted by higher (earlier) relative physical development and later menarche. Of the three indicators of pubertal timing, later menarche was most consistently important for predicting higher body image, displaying significance for three of the four dependent variables. Perceived social support predicted one outcome for young women (perceived attractiveness at Wave III), although it was a trend for the same outcome at Wave IV.

Fewer predictors turned out to be consequential for young men compared to young women. For young men, only higher perceived social support and lower relative physical development predicted healthy perceived weight at Wave III, and these effects disappeared at Wave IV. Perceived attractiveness in young men was predicted by perceived social support at both Waves III and IV, and a lagged effect appeared for facial hair at Wave IV. Among the four dependent variables, only two pubertal timing indicators appeared as significant predictors at any time: relative physical development and facial hair. Both of those predictors yielded results of

similar magnitude and in the same direction (such that later pubertal timing predicted higher body image). Notably, perceived social support stood out as a significant predictor in 3 of the 4 dependent variables; and for perceived attractiveness, the effect's strength remained consistent.

## **Study 2**

### **Method**

#### **Procedure**

After receiving IRB approval from the University of Michigan, participants were recruited via social media in the fall of 2020. We shared the survey link on LGBTQ+ discussion threads on Reddit, a popular social media community with specific pages for various communities and topics; university department and student organization email listservs; and Facebook group pages. Convenience sampling via social media was used to gain an adequate sample of self-identified LGBTQ+ individuals.

Upon completion of the survey, participants were asked if they would like to enter an optional raffle. If they selected "yes," they were given the link to a second, separate survey. Participants clicked the link to this second survey and entered their first name and email address. Entering the raffle was completely optional and voluntary, and participants were assured that there would be no way to link their individual names and email addresses to their survey responses. We purged the names and email addresses from our files after the raffle winners were randomly selected and contacted. Five winners were randomly selected to receive \$50 virtual Amazon gift cards, resulting in a total of \$250 in raffle prizes.

#### **Participants**

The survey received 798 responses. We removed 314 responses for the following reasons: finished less than 50% of the survey ( $n = 119$ ), completed the survey in 120 seconds or



less (n = 99), missing a response for the “gender” variable and unable to impute from the sexual orientation variable (n = 69), outside of the desired age range of 18-30 (n = 22), identified as strictly heterosexual (n = 4), or did not provide consent at the beginning of the survey (n = 1). The total remaining number of responses was 484 (34.1% cisgender women, 12.8% transgender women, 27.3% cisgender men, 5.2% transgender men, 20.7% gender nonconforming individuals). Of the 119 participants who completed less than 50% of the survey, only 50 completed even two of the measures, and only five completed the body image variables. While this may seem like a high removal rate, it is difficult to know what is typical of social media samples, especially LGBTQ+ social media samples sharing about personal topics.

The age range was 18-30 years for every group except transgender men (18-27 years).

Participants indicated their racial/ethnic identities in response to the question: “Which categories describe you? Select all that apply to you.” Because participants were able to select more than one response, the total number of responses in the following response breakdown is greater than the actual N. The response breakdown was as follows: White (n = 357), Hispanic, Latino or Spanish Origin (n = 41), Asian (n = 36), Black or African American (n = 14), Middle Eastern or North African (n = 8), American Indian or Alaska Native (n = 8), Native Hawaiian or Other Pacific Islander (n = 4), Some other race, ethnicity, or origin (n = 15), prefer not to answer (n = 2). The sample only had a small degree of racial/ethnic diversity, but it did have some.

Participants shared their general location in response to the question: “Where do you live?” The response breakdown was as follows: United States Midwest (n = 118), United States West (n = 71), United States South (n = 70), United States Northeast (n = 32), Puerto Rico or other U.S. territory (n = 3), Other, please specify (n = 127). Participants who selected “Other”

indicated their location in an open response, with the most common responses as follows: United Kingdom (n = 28), Canada (n = 14), Australia (n = 10).

Of the 422 participants who indicated whether they were currently students, 57.0% were students. There was a good spread of highest level of education attained. The highest level of education was most commonly some college (42.7%), followed by bachelor's degree (19.1%), high school diploma or equivalent (16.0%), associate's degree or vocational training (5.7%), master's or specialist degree (5.3%), some high school (4.5%), some post undergraduate work (4.3%), doctorate degree (2.4%).

Participants were asked to select their current social class. The 421 responses gathered resulted in a fairly normal distribution, skewed toward the low end: working-class or poor (14.5%), lower middle-class (21.7%), middle class (30.8%), upper middle-class (19.2%), or upper-class (0.8%). Participants also responded about the social class of their family of origin during their upbringing (n = 422): very poor, not enough to get by (1.9%), barely enough to get by (10.5%), had enough to get by but not many "extras" (30.6%), had more than enough to get by (32.0%), well to do (11.4%), extremely well to do (0.8%). These responses demonstrated a slight skew toward a higher social class.

## **Measures**

Multi-item self-report measures assessed the variables of interest.

### ***Gender Identity***

Participants responded with their gender identity via an open-ended question (Beischel et al., in prep). These open-ended responses yielded 70 unique labels for gender identity. If a participant's gender identity was missing, we imputed the gender based on the participant's

response to the sexual orientation questions if possible ( $n = 10$ ) or removed the participant from the sample if this was not possible (as described above,  $n = 69$ ).

Participants also indicated which of the following groups they would like to be included in when we described who participated in the study: 1 = *A trans/transgender category*, 2 = *A cisgender category (Cisgender (or cis) refers to people who are the same gender and/or sex they were assigned at birth)*, 3 = *Neither cisgender nor transgender describe me because: [type in response]*, 4 = *Unsure because: [type in response]* (Beischel et al., in prep). These responses were taken together to collapse into six broad categories: 1 = *man, male, or masculine* ( $n = 132$ ), 2 = *transgender man, male, or masculine* ( $n = 25$ ), 3 = *woman, female, or feminine* ( $n = 165$ ), 4 = *transgender woman, female, or feminine* ( $n = 62$ ), 5 = *gender nonconforming, genderqueer, or gender questioning* ( $n = 100$ ), 6 = *intersex, disorders of sex development, two-spirit, or other related terms* ( $n = 0$ ). Moody et al. (2013) provided most of the wording for these categories, and Hughes et al. (2016) updated some of the wording. No participants fell under the sixth category, so the final sample collapsed into five categories. Participants without a specified gender had already been removed from the sample.

The five groups are subsequently referred to as follows: cisgender women or cis women, transgender women or trans women, cisgender men or cis men, transgender men or trans men, and gender nonconforming individuals. The distinction between cis/trans status was not meant to delegitimize participants' self-labels; rather, it was deemed beneficial to the research questions to investigate potentially meaningful differences in experiences between groups. While the transgender men group was too small for some analyses, the group was retained where possible.

### ***Sexual Orientation***

Sexual orientation was assessed with the question: “Which of the following best represents how you think of yourself?” Participants selected among several options: 1 = *straight/heterosexual* (n = 6), 2 = *gay* (n = 76), 3 = *lesbian* (n = 85), 4 = *bisexual* (n = 144), 5 = *pansexual* (n = 64), 6 = *queer* (n = 47), 7 = *asexual* (n = 47), 8 = *None of the above* (n = 15). Most participants who selected “None of the above” elaborated with an open response: *demisexual* (n = 4), *omnisexual* (n = 3), or another unique combination of labels (n = 7).

Sexual attraction was also gauged with the question: “People are different in their sexual attraction to other people. Which best describes your feelings? Are you...” 1 = *only attracted to women* (13.6%), 2 = *mostly attracted to women* (27.1%), 3 = *equally attracted to women and men* (18.4%), 4 = *mostly attracted to men* (12.8%), 5 = *only attracted to men* (12.4%), 6 = *I am still figuring out who I am attracted to* (7.2%), 7 = *I am not attracted to women or men* (7.0%), 8 = *I prefer not to answer* (1.4%). This measure was used if a participant identified as “straight/heterosexual” in the self-label question. If participants identified as straight/heterosexual but expressed any degree of queer attraction (n = 6), those participants were included in this broadly queer sample.

### ***Body Image Indicators***

We used two measures for body image: body appreciation and drive for muscularity. These two indicators assessed different aspects of body image and were not significantly correlated, except for in the gender nonconforming group.

**Body Appreciation.** Body appreciation encompasses individuals’ acceptance, respect, and positive views of their bodies; this was measured using the 10-item Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015a). The BAS-2 is an appealing measure due to its focus on positive body image (called body appreciation), whereas other measures tend to

focus on body dissatisfaction or negativity. Participants indicated on a five-point Likert scale how much each item applied to themselves (1 = *never*, 2 = *seldom*, 3 = *sometimes*, 4 = *often*, 5 = *always*). Examples included “I appreciate the different and unique characteristics of my body” and “I am attentive to my body’s needs.” The BAS-2 has demonstrated satisfactory construct validity, test-retest reliability, and internal consistency among college and community women and men, with Cronbach’s alphas of .96 for each of those groups (Tylka & Wood-Barcalow, 2015a). In the current dataset, the 10 body appreciation items demonstrated high reliability ( $\alpha = .94$ ). We averaged responses to the 10 items to create the body appreciation measure, so a higher score represented higher body appreciation and therefore better body image.

**Drive for Muscularity.** Drive for muscularity was measured with the Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000). The DMS is a 15-item measure assessing attitudes and behaviors aimed at increasing one’s muscularity. Muscularity is a body image ideal that may differentially impact individuals based on their gender/sex. Example items included “I wish that I were more muscular” and “Other people think I work out with weights too often.” Responses were measured using a six-point Likert scale (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *very often*, 6 = *always*). Following the authors’ suggestion, the current study used a 14-item version of the DMS with the question about anabolic steroid use removed, as this study did not draw on a specific sample such as weightlifters (McCreary et al., 2004; Rawana et al., 2016). The DMS can be divided into attitude and behavioral subscales; however, these subscales have shown appropriate validity only in samples of men (McCreary et al., 2004). Thus, this study used only the overall score, which can be used in both men and women samples (McCreary et al., 2004). The DMS has demonstrated good internal consistency in a sample of male and female adolescents (with an alpha coefficient of .84 for males and .78 for females), as well as generally

good validity and test-retest reliability. The 14 items in the current study demonstrated high reliability with a Cronbach's alpha of .90. We created the overall DMS score by averaging scores on the 14 items; therefore, a higher overall DMS score indicated a higher drive for muscularity, which does not necessarily mean better or worse body image.

### ***Masculinity and Femininity***

The Bem Sex-Role Inventory (BSRI; Bem, 1974) assessed masculinity and femininity. Participants indicated how much they believe each of 60 items describe themselves on a seven-point Likert scale ranging from *never or almost never true* to *always or almost always true*. The 60 items reflected traits that are regarded as traditionally masculine (20 items), traditionally feminine (20 items), or neutral (20 items). Examples of masculine items included "aggressive," "dominant," and "analytical"; feminine items included traits such as "gentle," "loves children," and "tender"; neutral items included traits such as "friendly," "reliable," and "truthful."

Participants received masculinity and femininity scores, which were the means of self-ratings on the masculine and feminine items, respectively. Each score ranged from 1 to 7, with a higher score indicating higher masculinity or femininity. The items on the BSRI are mostly positive, which some argue constitutes a limitation. However, the BSRI is one of the most used measures to assess masculinity and femininity, and it has demonstrated sufficient reliability and validity. In the current study, the masculine items yielded a Cronbach's alpha of .88, and the feminine items yielded a Cronbach's alpha of .80.

### ***Current Outness***

Current outness was assessed using the Outness Inventory (OI; Mohr & Fassinger, 2000). The OI is an 11-item scale that assessed LGB individuals' degree of openness about their sexual orientation to various types of individuals (e.g., siblings, members of one's religious

community). Because the item “outness to old heterosexual friends” is not included in any subscales, the current study used a 10-item version of the OI in which that item was excluded. The OI can also be broken down into three subscales: outness to family, outness to world, and outness to religion. While the original authors of the OI suggested creating the overall outness measure by averaging the subscales, the current study averaged all items for the overall outness measure. The OI and its subscales have demonstrated good reliability and validity, with Cronbach’s alphas ranging from .74 to .97 for the subscales. In the current dataset, the 10 items demonstrated high reliability, with a Cronbach’s alpha of .86. This study used the overall outness measure rather than the subscales. The OI used a seven-point Likert scale to indicate general outness (1 = *person definitely does NOT know about your sexual orientation status*, 2 = *person might know about your sexual orientation status, but it is NEVER talked about*, 3 = *person probably knows about your sexual orientation status, but it is NEVER talked about*, 4 = *person probably knows about your sexual orientation status, but it is RARELY talked about*, 5 = *person definitely knows about your sexual orientation status, but it is RARELY talked about*, 6 = *person definitely knows about your sexual orientation status, and it is SOMETIMES talked about*, 7 = *person definitely knows about your sexual orientation status, and it is OPENLY talked about*). A score of 0 indicated *not applicable to your situation; there is no such person or group of people in your life*, which we recoded as missing. Therefore, higher scores indicated higher outness.

### ***Previous Perceived Social Support***

Previous perceived social support was assessed with a modified version of the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). The MSPSS is a 12-item scale assessing perceived social support; subscales for family, friends, and significant others can be generated by averaging the four items for each subscale. Participants responded to

each question using a seven-point Likert scale ranging from *very strongly disagree* to *very strongly agree*, labeled at each point. Example items included “I get the emotional help and support I need from my family” and “I can count on my friends when things go wrong.” We averaged responses on the 12 items to create an overall score of perceived social support, with a higher overall score indicating more perceived support. In a sample of 136 female and 139 male college students, the overall scale demonstrated an overall reliability of .88, with Cronbach’s alphas for the subscales ranging from .85 to .91 (Zimet et al., 1988). The MSPSS has also demonstrated strong internal consistency in LGBTQ+ samples (Moran et al., 2018; Perrin et al., 2020). This study modified the MSPSS to assess previous perceived social support around the time of LGBTQ individuals’ personal self-discovery. Participants were instructed to answer the questions while thinking about how they specifically applied to their sexual identities, adjusting their responses to reflect how they felt when they first came out to themselves. The retrospective self-reports therefore reflected how participants felt when they first realized they were LGBTQ+. The previous perceived social support aggregate measure demonstrated high reliability ( $\alpha = .88$ ).

The current outness subscales and the perceived social support subscales were intercorrelated to varying degrees across groups. We used the overall scores that aggregated the subscales rather than the individual perceived social support and current outness subscales.

### ***Timing of Sexual Identity Development Milestones***

Participants shared the age at which they had reached each of 12 sexual identity development milestones. Individual items were informed by several relevant studies to create a holistic picture of sexual identity development (Dunlap, 2016; Floyd & Stein, 2003; Martos et al., 2015; Parks & Hughes, 2007). The items collapsed into three main categories: internal realizations, disclosures, and romantic and sexual experiences. The following three items



constituted the internal realizations category: “first became aware of your attraction to members of the same sex,” “first concluded that you were not straight,” and “first realized that you were [participant’s self-selected identity].” The following five items created the disclosure category: “first told someone that you were [participant’s self-selected identity],” “first told an LGBTQ+ friend that you were [participant’s self-selected identity],” “first told a heterosexual friend that you were [participant’s self-selected identity],” “first told someone in your family that you were [participant’s self-selected identity],” and “first told a parent that you were [participant’s self-selected identity].” The romantic and sexual experiences category comprised the following four items: “had first sexual encounter with someone of the opposite sex,” “had first sexual encounter with someone of the same sex,” “began your first relationship with someone of the opposite sex,” “began your first relationship with someone of the same sex.” If a particular milestone did not apply to a participant based on their identity, they indicated so with an “X,” which was recoded as missing data for the sake of the study analyses. We averaged participants’ ages across each category to create the three scales. One benefit of this approach was that our measure did not impose a “correct” timeline or trajectory onto the participants; rather, the scores for each scale represented the mean age of those milestones.

Due to the binary gendered nature of some of the language used in the milestones (e.g., “opposite sex,” “same sex”), we did not include these scales in subsequent analyses involving the transgender and gender nonconforming groups; future research should consider the intersection of sexual and gender identity development as it relates to well-being. Among the cisgender women and cisgender men samples, respectively, the scales demonstrated good reliability, with Cronbach’s alphas ranging from .74 to .98. The romantic and sexual experiences scale was the lowest of the three scales in both cis women and cis men. As a milestone, the romantic and

sexual experiences scale differed from the other scales in that it was more a measure of the onset of romantic and sexual behavior, regardless of sexual orientation. The questions ask about participants' behavior with members of the same and opposite sex, which may result in a more general indicator of romantic and sexual experience as opposed to identity-specific milestones. With this perspective in mind, the scale was included in subsequent analyses.

The scales mostly correlated positively with each other, to varying degrees, in the cis women and cis men groups. The internal realizations and disclosure scales were highly positively correlated with each other for both cis women and cis men. The disclosure and romantic and sexual experiences scales were positively correlated with each other, moderately for cis women and moderately high for cis men. The internal realizations and romantic and sexual experiences scales were moderately positively correlated only in cis men.

### ***Pubertal Timing***

Participants were first asked to indicate which of the following sets of questions best applied to their experiences with puberty (specifically their first puberty if they had undergone a physical transition): “questions about menstruation, breast growth, buying your first bra, etc.,” or “questions about wet dreams, beard growth and shaving, voice changes, etc.” This question was used to direct participants to the appropriate set of four questions about their pubertal timing relative to their peers. Participants shared when they had reached certain pubertal milestones relative to their peers on a five-point Likert scale ranging from *much earlier* to *much later*. Participants who indicated that questions about menstruation, breast growth, etc. would be more appropriate to their experiences were asked about the timing of the four following pubertal milestones: having their first period, having noticeable breast development and growth, experiencing their teenage growth spurt, and buying their first bra. Participants who indicated

that questions about wet dreams, beard growth, etc. would be more appropriate to their experiences were asked about the timing of the four following pubertal milestones: having their first wet dream, growing a beard/needing to begin shaving, experiencing their teenage growth spurt, and experiencing changing or cracking of their voice. We created a composite relative pubertal timing score by averaging participants' responses across the appropriate four items. Beltz and Berenbaum (2013) selected these items because they correlate highly with gonadarche, a pubertal phase consisting of a rapid increase in gonadal sex hormones (Dorn et al., 2006). In both the original and subsequent studies, this measure of pubertal timing has demonstrated high inter-item and item-total correlations, as well as adequate reliability (Beltz & Berenbaum, 2013; Grower et al., 2019). In the current study, each set of pubertal timing items demonstrated satisfactory reliability ( $\alpha = .82$  for cisgender women and  $\alpha = .67$  in cisgender men).

Age at menarche and age at first wet dream were also assessed; these measures were moderately positively correlated with the relative pubertal timing composite scores. In cisgender men, age at first wet dream and relative pubertal timing score showed a moderate correlation, and in cisgender women, age at menarche and relative pubertal timing showed a high correlation. This suggested that the participants' perceptions of their pubertal timing in relation to their peers correlated significantly with the actual ages of the given indicators of puberty. Only the relative pubertal timing composite scores were used in subsequent analyses.

### **Data Analysis**

Statistical analyses were completed using IBM SPSS Statistics, Version 27. First, we conducted ANOVAs on body image and drive for muscularity, respectively, to assess differences between the five groups in the planned dependent variables. Second, we calculated Pearson's  $r$  correlations between the variables of interest for each of the five groups.

Next, to examine our main predictions, we used eight hierarchical regressions to assess links between predictors (sexual identity development milestones, previous perceived social support, relative pubertal timing, current outness, masculinity, and femininity) and outcomes (body image and drive for muscularity). We conducted regressions separately for the four groups: cis women, trans women, cis men, and gender nonconforming participants. We excluded trans men from the regression analyses due to the low sample size. We only included the pubertal timing and sexual identity development milestone measures in the regressions for cis groups because so many items assumed binary gender in a manner too simple to cover the more complex experience of the other groups. We were not interested in whether the group of predictors significantly predicted the outcomes, so we ignored the significance level of the model and instead focused on the significance of each predictor, but we report model statistics.

Finally, we used four additional hierarchical regressions to assess relations of some of the predictors to the two body image indicators in the following two groups: women (both cis and trans) and men (both cis and trans). Previous perceived social support, current outness, masculinity, and femininity were the only predictors used in these regressions, as these were the predictors used in the trans and gender nonconforming groups in the previous regressions. Again, we were not interested in whether the group of predictors significantly predicted the outcomes, so we report but ignore the model significance and instead focus on the significance of each predictor. We conducted ANOVAs on these four predictors to assess differences between the five groups prior to completing the second set of regressions.

## **Results of Study 2**

### **Descriptive Statistics and ANOVA Results**

Table 5 displays descriptive statistics for all the variables for each of the five groups. Table 6 presents the results of the ANOVAs on the dependent variables (body appreciation and drive for muscularity). Cis women fared better than every other group in terms of body appreciation, and trans women had significantly worse body appreciation than cis men and gender nonconforming individuals. Cis men, trans men, and gender nonconforming individuals were not significantly different from each other in terms of body appreciation. Trans women had a significantly lower mean drive for muscularity than every other group, and cis women had a lower drive for muscularity than cis and trans men. Trans men had a higher drive for muscularity than the gender nonconforming group.

### **Bivariate Associations**

Table 7a presents the intercorrelations for cis women for the key variables. The two body image indicators were not significantly correlated with each other, but both were positively moderately associated with masculinity; each indicator was also associated with different variables. Later relative pubertal timing and higher previous perceived social support were each related to higher body appreciation. Earlier timing of disclosure milestones and later timing of romantic and sexual experiences milestones were each related to higher drive for muscularity.

Several of the variables used as predictors were significantly correlated with each other. Notably, many of the developmental variables were associated with higher current outness: higher previous perceived social support, earlier timing of both internal realizations and disclosure milestones, and later timing of romantic and sexual experiences milestones. Higher previous perceived social support also related to later timing of internal realizations milestones and higher femininity. Later internal realizations milestones and lower masculinity were also associated with higher femininity.

Table 7b presents the intercorrelations for trans women for the key variables. Body appreciation was positively highly associated with both masculinity and current outness, although none of the predictors related to drive for muscularity, nor was body appreciation. Among the variables used as predictors, only one relation was significant: previous perceived social support and current outness.

Table 7c presents the intercorrelations for cis men for the key variables. The two body image indicators were uncorrelated, though both were positively moderately associated with masculinity. Higher previous perceived social support, earlier timing of romantic and sexual experiences milestones, and higher current outness related to higher body appreciation.

Several of the variables used as predictors significantly correlated with each other. Higher current outness related to several other variables, both developmental and current: higher previous perceived social support, earlier timing of internal realizations and disclosure milestones, and higher masculinity. Higher previous perceived social support related to both higher masculinity and higher femininity, and earlier relative pubertal timing related to higher masculinity.

Table 7d presents the intercorrelations for trans men for the key variables. Body appreciation was positively highly associated with current outness, although drive for muscularity did not relate to any of the variables used as predictors. Like the trans women sample, of the 6 correlation coefficients among the variables used as predictors, the only significant relationship was between previous perceived social support and current outness.

Table 7e presents the intercorrelations for gender nonconforming individuals for the key variables. The two body image indicators were positively moderately associated with

masculinity, as well as with each other. Of the 6 correlation coefficients among the variables used as predictors, only one was significant: current outness and masculinity.

### **Relations of Predictors to Body Image**

We used SPSS to perform a total of 12 hierarchical regressions. In reporting analyses, we note trends ( $p > .05$ ,  $< .10$ ), because no previous research has examined these issues in a large, diverse sample of queer youth. We view the trends only as useful for informing future research.

First, we performed eight hierarchical regressions to examine relations of predictors to body image indicators in the following four groups: cis women, trans women, cis men, and gender nonconforming individuals. No regression analyses were performed with trans men alone due to the low sample size. All potential predictors were used for the cisgender groups, but we dropped the pubertal timing and milestones measures from analyses with the non-cisgender groups due to the strongly binary gendered nature of those variables. The same dependent variables were used for all groups.

Table 8a shows cisgender women's hierarchical regression results, which were generally in line with expectations. Higher masculinity and earlier timing of disclosure milestones in cis women both predicted higher body appreciation and higher drive for muscularity. Each body image indicator also had an additional unique predictor for cis women: higher previous perceived social support predicted higher body appreciation, and later timing of romantic and sexual experiences milestones predicted higher drive for muscularity.

Table 8b shows the hierarchical regression results for transgender women. In contrast to our expectations, higher masculinity in trans women predicted higher body appreciation. Higher current outness was a trend for higher body appreciation. Also in contrast to our expectations, nothing predicted drive for muscularity.

Table 8c presents the hierarchical regression results for cisgender men. As expected, higher masculinity predicted higher body appreciation; higher current outness was a trend for body appreciation. In contrast to our expectations, later timing of internal realizations milestones was a trend for higher body appreciation, and nothing predicted drive for muscularity.

Table 8d shows the hierarchical regression results for gender nonconforming individuals. In line with expectations, higher masculinity predicted higher body image, and higher previous perceived social support was a trend for higher body appreciation. Contrary to our expectations, nothing predicted drive for muscularity.

### **Combining Gender-Based Groups**

Because current gender identity is likely influential for LGBTQ+ individuals' body image, we performed four additional hierarchical regressions to assess relations of predictors to body image indicators in the following combined groups: men (both cis and trans) and women (both cis and trans). Gender nonconforming individuals' regression results were previously presented in Table 8d. We used the same limited set of predictors as used for the trans groups separately. As we have already seen in Table 6, cis women and trans women differed in both body appreciation and drive for muscularity (with cis women higher in both), while cis men and trans men did not differ in either; with this in mind, we continued with the subsequent analyses.

As context for the following analyses, we ran ANOVAs on each of the variables from the limited set of predictors: masculinity, femininity, current outness, and previous perceived social support. Table 9 presents the results of the ANOVAs on these predictor variables. Trans women scored lower on masculinity than cis men and cis women, respectively; group differences were otherwise not significant. Trans women scored higher on femininity than cis men, trans men, and gender nonconforming individuals, respectively; cis women also scored higher than the gender



nonconforming group on femininity. There was no overall significant difference between groups in terms of current outness, so we did not test for differences between individual groups. In terms of previous perceived social support, cis women scored higher than the gender nonconforming group, and all other group differences were not significant.

Table 10a presents the hierarchical regression results for women (both cis and trans) for body appreciation and drive for muscularity. As seen in both cis and trans women individually before, higher masculinity continued to predict higher body appreciation in all women. As seen in cis women but not trans women before, higher previous perceived social support predicted higher body appreciation in all women. Whereas higher current outness was a trend for higher body appreciation in trans women before, current outness was not significant for all women. Higher masculinity predicted higher drive for muscularity in all women, a relation that was seen before in cis but not trans women.

Table 10b presents the hierarchical regression results for men (both cis and trans) for body appreciation and drive for muscularity. As seen in cis men before, higher masculinity predicted higher body appreciation in all men. Higher current outness also significantly predicted higher body appreciation in all men, which was previously a trend in cis men. Femininity was not significant for cis men before, but it was a positive trend for body appreciation in all men. Two additional predictors which were not previously significant for cis men became significant for all men: higher previous perceived social support predicted higher body appreciation, and higher masculinity predicted higher drive for muscularity.

### **Summary**

Of the two body image indicators, body appreciation was more often related to the various predictors across groups. Between the current predictors (i.e., masculinity, femininity,

and current outness) and the developmental predictors (i.e., previous perceived social support, the timing of sexual identity development milestones, and relative pubertal timing), neither group appeared to be more important than the other; rather, individual predictors from each group stood out as particularly important (or not) for body image.

Higher masculinity significantly predicted higher body appreciation in every regression analysis for every group, suggesting that this is an important predictor for LGBTQ+ individuals' body image. In addition, the strength of the betas was moderate to high, ranging from .22 to .46 across groups. This relation was expected in some groups (e.g., cis women) but unexpected in other groups (e.g., trans women). Higher masculinity also predicted higher drive for muscularity in the cis women, all women, and all men samples, which we expected, although this relation was not significant in trans women, cis men, and gender nonconforming individuals. This suggests that masculinity is particularly important for drive for muscularity in cisgender men and in women, regardless of cis/trans status.

Higher femininity predicted higher body appreciation as a trend in the group of all men, but femininity was otherwise not significant for either body image indicator for any group.

Current outness was a trend for some groups, but it was not important overall for either body image indicator, which did not align with our expectations. Higher current outness predicted higher body appreciation in the sample of all men, as we expected, but it was otherwise not significant. This variable was not important for drive for muscularity in any group.

Higher previous perceived social support predicted higher body appreciation in cis women, all women, and all men, suggesting (as expected) that previous perceived social support is moderately important for body appreciation. This variable was not significant for drive for muscularity for any group.

The timing of sexual identity development milestones was important for different groups in different ways. Contrary to our expectations, later timing of internal realizations milestones was a trend for higher body appreciation in cisgender men, suggesting that recognizing one's sexuality later is beneficial for downstream body image in cisgender men; the timing of internal realizations was otherwise not significant in other groups. In line with our expectations, earlier timing of disclosure milestones predicted higher body appreciation and higher drive for muscularity in cisgender women. The timing of disclosure milestones was otherwise not significant. The only time that the timing of romantic and sexual experiences milestones was important was in the case of cis women's drive for muscularity, where later timing of the milestones predicted higher drive for muscularity.

Relative pubertal timing unexpectedly did not significantly predict either body image indicator for the cisgender groups, suggesting that it is not a significant factor for cisgender queer individuals' downstream body image.

### **General Discussion**

The aim of the present research was to examine current and developmental predictors of body image in the understudied LGBTQ+ young adult population. Notably, results suggested that later pubertal timing was beneficial for body image for both young cis women and men, but only in Study 1; pubertal timing did not significantly predict body image for either cisgender group in Study 2. Masculinity in Study 2 and perceived social support in both studies stood out as significant positive predictors of body image. Other variables, such as current outness and the timing of disclosure milestones, were important for body image only in some groups.

### **Current Influences on Body Image**

The three current influences included in this study were masculinity, femininity, and current outness, all of which were only assessed in Study 2. Masculinity significantly predicted higher body appreciation in every regression analysis performed, across all gender and cis/trans status divisions. This finding strengthens the existing literature that regards masculinity as broadly beneficial for body image. Previous research attributes this relation to the link between masculinity and self-esteem (Lamke, 1982), and the fact that the traits associated with masculinity are socially valued (Massey et al., 2020). However, this study provides additional nuance to the literature, as masculinity also predicted the drive for muscularity in three of our regression models (and was a trend for another). This finding supports the masculinity hypothesis, which proposes that masculine norm conformity is a risk factor for body dissatisfaction related to the need to be muscular (Blashill, 2011; Murray & Touyz, 2012), and suggests that the hypothesis likely extends to members of the LGBTQ+ community. Taken together, these results paint a complex picture of the dual effect of masculinity on body image: masculinity supports an overall positive regard for one's body, but it also specifically endorses and perpetuates muscularity-oriented body concerns. This finding may be of interest to psychologists and clinicians seeking to understand how body image functions in LGBTQ+ youth, and it supports the need for further research on this topic.

Importantly, femininity was not a significant predictor of body image. This may be because femininity is generally regarded to be more closely related to the drive for thinness (Koff et al., 2010), and the measures of body image used in this study assessed positive overall regard for one's body and the drive for muscularity as opposed to a specific drive for thinness. Alternatively, this finding may be because feminine traits are overall less socially desirable than masculine traits (Broverman et al., 1972; Massey et al., 2020). Future research should further

examine the differential effects of masculinity and femininity on a variety of measures of body image, as well as potential mechanisms underlying these relations.

To assess whether the key ingredient for body appreciation was identification with masculinity and femininity or identification with traits commonly associated with them, we conducted some post hoc regression analyses. We substituted the specific items “masculine” and “feminine” for the overall masculinity/femininity scales that were used in the study, which each included 19 additional traits. If the masculine/feminine items were significant in the new regressions, this would suggest that identification with masculinity itself or femininity itself is important for body appreciation. The results of these new analyses differed by gender/sex group: the masculine trait was only significant for trans women and all women (both cis and trans), such that higher identification with the masculine trait related to higher body appreciation. This is notable, as the overall masculinity scale had been significant in every gender/sex group before. This suggests that for men and gender nonconforming individuals, identification with traits commonly associated with masculinity is more important for body appreciation than identification with masculinity itself, but for women, both aspects are important. As discussed above, the traits commonly associated with masculinity are socially valued characteristics that are linked to self-esteem, so it follows that identification with these traits is broadly beneficial for body appreciation for all gender/sex groups. However, identification with masculinity itself was beneficial only for women; perhaps this identification frees non-heterosexual women from heteronormative attractiveness standards or is otherwise uniquely empowering. The analyses involving the feminine item also yielded notable results: the overall femininity scale had not been significant for any group’s body appreciation, but the feminine trait was significant for trans women and all women (both cis and trans), such that higher identification with the feminine

trait related to higher body appreciation. This suggests that identification with femininity is not relevant to men's body image, but is broadly important for women's body appreciation, which may reflect the reach of societal pressure for gender conformity. These results challenge the generally accepted idea that femininity is detrimental for body image (e.g., the femininity hypothesis; Koff et al., 2010; Lakkis et al., 1999; Meyer et al., 2001; Murray & Touyz, 2012; Snyder & Hasbrouck, 1996), at least for queer young women.

We considered the drive for muscularity as an alternative outcome to body appreciation in these new analyses. Whereas the overall masculinity scale predicted the drive for muscularity in cis women, all women, and all men, higher identification with masculinity predicted a higher drive for muscularity in trans women, all women, and all men. This suggests that masculinity plays a role in the drive for muscularity in all women, although whether this means identification with masculinity or the traits commonly associated with it may differ according to cis/trans status; both aspects play a role in the drive for muscularity in all men. Future research should examine how various subgroups of the LGBTQ+ community understand and define masculinity and femininity to shed light on these relations.

Finally, current outness was significant for body appreciation for all men, such that a higher level of current outness predicted higher body appreciation. Given the connection between outness and well-being in general (Zaikman et al., 2020), it seems reasonable that outness is also tied to body image specifically. The level of comfort with one's identity required to be out may translate to comfort with or appreciation of one's body, although research examining this possibility is lacking. Alternatively, outness may reflect feelings of comfort or safety in one's social world (Orne, 2011), and this may positively influence body image. Finally, given that the process of coming out is an additional burden faced by LGBTQ+ people that their

heterosexual, cisgender counterparts do not have to face (Floyd & Stein, 2002), being out may reduce some emotional load, which could positively influence body image. It is unclear what the mechanism underlying this relation is, as well as why outness is important for men's body appreciation, but not that of women or gender nonconforming individuals. Future research should investigate experiences with outness among subgroups of the LGBTQ+ community and identify the mechanism underlying this relation when it is present.

### **Developmental Influences on Body Image**

This study also contributed to the literature by examining several developmental influences on body image, including perceived social support, the timing of sexual identity development milestones, and relative pubertal timing. First, our finding of the importance of perceived social support in both studies supports the existing literature. Previous research has established that perceived social support is important for well-being in all adolescents and young adults (Chu et al., 2010), and that social support is uniquely important for LGBTQ+ youth specifically (McDonald, 2018), particularly during the coming out process (Muñoz-Plaza et al., 2002). The current research highlights the importance of perceived social support both in general (Study 1) and specifically as it relates to one's LGBTQ+ identity during the coming out process (Study 2). The fact that both measures of perceived social support emerged as important illuminates the important role of the social environment for how LGBTQ+ individuals regard their bodies. Social support buffers against the negative effects of stress and reinforces self-esteem (Chu et al., 2010; Cohen, 2004; Cohen & Wills, 1985). As LGBTQ+ individuals navigate a range of stressors throughout adolescence and young adulthood, perceived social support may help to buffer the negative effects of these stressors and reinforce positive body image.

The second developmental influence included in this study was the timing of sexual identity development milestones (Study 2). For cisgender women, earlier timing of disclosure milestones related to higher body appreciation and drive for muscularity. This suggests that coming out at a younger age has complex effects for queer cisgender women: it positively affects their overall appreciation for their bodies, but it also leads to a higher desire for muscularity. Perhaps coming out early may protect queer young women from some harmful societal beauty ideals and encourage them to accept more diverse body types. However, this may also expose these young women to alternative attractiveness ideals that may emphasize muscularity, leading to a higher drive for muscularity. Adding complexity to the picture, drive for muscularity was also predicted by later timing of romantic and sexual experiences milestones. Because there is a dearth of research on this topic, we conducted a post hoc regression analysis to guide future research. We substituted the overall romantic and sexual experiences milestones with same-gender/sex experiences and opposite-gender/sex experiences, respectively. Findings revealed that later same-gender/sex, but not opposite-gender/sex, experiences predicted higher drive for muscularity, suggesting that drive for muscularity in the cisgender women in our sample was heightened by having later queer experiences. Future research should attempt to replicate this finding and ascertain the mechanism. In addition, the timing of sexual identity development milestones was not significant for the cis men in our sample, and we did not assess this variable in the trans and gender nonconforming groups; additional research should examine how sexual identity development milestones may or may not influence body image in these groups.

Finally, the present research reflects the mixed state of the literature regarding the effects of pubertal timing on psychological well-being. The results of Study 1 suggest that early pubertal timing is detrimental for both young women's and men's body image, although the findings are



not entirely conclusive. For example, young women who had an earlier menarche had lower healthy perceived weight at both time points and lower perceived attractiveness at one point, suggesting that earlier pubertal timing is a risk factor for poor body image. However, a small but significant lagged effect appears in the later wave for young women, in which earlier pubertal timing (as indicated by relative physical development) predicted higher perceived attractiveness. Only two of the pubertal timing indicators were significant for young men, although both suggest a detrimental effect of early pubertal timing. Taken together, these findings suggest that early pubertal timing is generally associated with worse body image for these cis, queer individuals. A considerable body of research supports the association between early pubertal timing and adverse outcomes in girls; while the literature on boys is more mixed, a good number of studies propose the same relation (Mendle & Ferrero, 2012). Theoretical perspectives point to the disparity between physical and psychological maturation or the secretion of adrenal and gonadal hormones during the sensitive period of adolescence to explain why early pubertal timing is detrimental for all adolescents (Ge & Natsuaki, 2009; Nelson et al., 2005). Although LGBTQ+ youth are underrepresented in the pubertal timing literature (Crockett et al., 2019; Deardorff et al., 2019), Study 1 suggests that these findings may extend to non-heterosexual, cisgender individuals.

However, Study 2 examined these relations cross-sectionally (not longitudinally) in a more recent cohort of queer young people and found that relative pubertal timing was not a significant predictor of body image for either cis women or cis men. These findings may suggest that currently — compared with the past — relative pubertal timing is simply less of a concern for cisgender sexual minorities as it relates to positive body image, perhaps because the Study 2 participants were more focused on consolidating a positive sexual/gender identity. Future research, particularly longitudinal studies with direct measures of identity among queer youth,

should attempt to replicate these results and shed further light on the complexities of sexual minorities' experiences of puberty.

Three potential reasons may explain the difference in findings between Study 1 and Study 2 regarding the importance of pubertal timing. First, the lower societal acceptance of LGBTQ+ identity may have influenced these relations in Study 1 participants differently than in Study 2. Study 1 analyzed data that was collected starting in 1996; due to the relatively lower societal acceptance of LGBTQ+ identity during this time in which Study 1 participants came of age, this cohort may have suffered more than their counterparts in Study 2 from heteronormative comparisons to their peers, and they also lacked a positive identity to buffer the impact of negative social pressures. However, during the period in which Study 2 participants came of age, a more positive sexual/gender identity was available to them due to increased societal acceptance of LGBTQ+ identities, and this may have buffered the impact of some negative social pressures.

Second, Study 1 was longitudinal, with pubertal timing at an early stage predicting later body image outcomes. In contrast, Study 2 was cross-sectional, with all data collected (reporting retrospectively about puberty) considerably later than puberty. Perhaps recall of puberty experiences at this later time was less accurate or colored by current body image, and therefore eliminated evidence of over-time effects.

Third, while both studies used a measure of perceived pubertal timing relative to peers, Study 1 also included additional measures, including age at menarche, breast size change, facial hair change, and voice change. These measures of pubertal timing may be differentially important for body image; for example, young women who had an earlier menarche and more breast size change showed lower healthy perceived weight, but how these young women perceived their overall physical development compared to their peers was not important to their

healthy perceived weight. This suggests that cisgender, non-heterosexual young women's body image may indeed be influenced by the timing of their physical onset of puberty, even when their conscious perceptions of their pubertal timing are less influential. While some researchers argue that perceptions of puberty are more relevant for psychological outcomes (Carter et al., 2019; Mendle, 2014), some influential theories, such as the hormonal influence hypothesis, appeal to factors other than adolescent perceptions of puberty, such as hormones (Ge & Natsuaki, 2009); therefore, some theoretical grounding supports this idea. This may also align with the explanation that non-heterosexual young people are more preoccupied with other factors that influence their body image, such as their perceived social support. However, it would be premature to come to this conclusion, given that the two studies did not use the same measures of pubertal timing, and the field in general lacks research on LGBTQ+ experiences of puberty. Future research should help clarify perceived and objective pubertal timing in this population to understand potential differential effects.

### **Cohort Differences**

Study 1 used an earlier sample of queer, cisgender individuals to examine body image from a longitudinal perspective. Study 2 used a contemporary sample of both sexual and gender identity minorities. Queer identity may have been experienced differently by the participants in each study because of sociopolitical context, which potentially could meaningfully influence body image. Stewart and Healy's (1989) model of individual development and social changes details the ways in which sociohistorical events may uniquely influence individuals throughout the lifespan. According to this model, childhood is a time in which individuals form fundamental expectations about the world according to their experiences, and adolescence and young adulthood become critical for the development of personal identity.

This theoretical framework is useful to consider the unique experiences of Study 1 participants, who came of age during a time in which the LGBTQ+ community was more heavily stigmatized, as illustrated by responses to the AIDS crisis and “Don’t Ask, Don’t Tell” (Borch, 2010; Herek & Capitano, 1999; Herek & Glunt, 1988); and Study 2 participants, who came of age during a time in which same-sex marriage was hotly debated but ultimately legalized in the 2015 Supreme Court ruling *Obergefell v. Hodges* (Fingerhut et al., 2011; Yoshino, 2015). As Study 1 participants developed through childhood and across adolescence, they formed their fundamental assumptions about the world and personal identities during a time in which being LGBTQ+ was highly stigmatized, and this may have influenced how those participants experienced their bodies and perceived social support. On the other hand, Study 2 participants may have formed their fundamental views about the world during a time of high stigma against the LGBTQ+ community, but they grew into adolescence and young adulthood as societal views rapidly shifted toward acceptance, as reflected by historical events, such as the legalization of same-sex marriage. It is unclear if this intersection of personal development and sociohistorical events differentially affected participants’ experiences with body image. For example, the greater relevance of pubertal timing for body image in Study 1 than in Study 2 may be related to the greater heteronormative pressure felt by that cohort of queer young people.

### **Limitations of the Studies**

These two studies must be interpreted with several limitations in mind. First, whereas participants in Study 2 must have self-identified as LGBTQ+ to take the survey, participants in Study 1 were selected if they met one of several criteria, including self-identification, same gender/sex attractions, same gender/sex sexual behavior, and so on. We used a broad definition of sexual minority in Study 1 to be inclusive of the identity, attraction, and behavior elements of

sexual orientation. This approach was informed by the knowledge that these participants came of age during a time of generally lower societal acceptance of LGBTQ+ identity and as a result may have been less open about their identities but may nevertheless have had meaningfully different experiences than their strictly heterosexual peers. However, the broader definition of queerness in Study 1 may have resulted in a wide sample of sexual identity minorities, some of whom might not have self-selected into Study 2 themselves.

Second, while both studies measured some similar constructs, no specific measures were the same. For example, body image was operationalized as healthy perceived weight and perceived attractiveness in Study 1 and as body appreciation and drive for muscularity in Study 2. Naturally, these indicators of body image may have different predictors and associations, and some may be more important for LGBTQ+ youth than others. However, each indicator does comprise an important aspect of body image, and taken together, they produce a complex picture. The same applies to the other shared predictors across both studies: perceived social support and relative pubertal timing. These constructs were measured differently in each study; however, Study 2 provides an updated perspective on Study 1 measures, such that both studies combined provide valuable insight on the relations in question.

Third, we did not examine pubertal timing or sexual identity development milestones in non-cisgender individuals due to the highly binary gender/sex-influenced nature of the variables, although there is reason to believe that puberty is an influential event for their body image (Röder et al., 2018). Therefore, future research should carefully examine the intersection of pubertal timing and gender identity development as it pertains to body image.

Finally, Study 1 was longitudinal, with data collected over many years, while Study 2 was cross-sectional and included retrospective reports on puberty and early milestones. This

inevitable reliance on retrospective data in Study 2 may have led to underestimates of the power of early adolescent experiences, especially pubertal timing.

The differences between Study 1 and Study 2 result in a need for caution in direct comparisons, but also particularly powerful implications when results were consistent. For example, the importance of perceived social support for body image across both studies — even when both constructs were measured in different ways — suggests that this is a strong relation, regardless of cohort, design, or measurement differences. Alternatively, findings that differed between studies (i.e., the importance of relative pubertal timing) suggest potentially fruitful future directions to understand these complex relations.

### **Contributions and Future Directions**

The current research illuminates potential protective and risk factors for LGBTQ+ youth's body image and has a wide range of implications and practical applications. For example, therapeutic approaches to eating disorders benefit from the knowledge that perceived social support is uniquely important for LGBTQ+ youth's body image. The gold standard for treating adolescent anorexia nervosa and bulimia nervosa is family-based therapy that prioritizes parental involvement as crucial to the adolescent's success (McClain & Peebles, 2016). This recognition that strong support systems are critical for eating disorder recovery implies that social support helps adolescents cope with body issues. The present research revealed that LGBTQ+ young adults' body image is influenced by perceived social support both in general and specifically relating to their minority identity. Therefore, LGBTQ+ youth may benefit from therapeutic approaches to eating and body concerns that specifically reference social support.

The present research also contributes to the literature by its use of positive measures of body image. While body image research emerged from a clinical perspective, mostly focusing on

body image pathology, the field is shifting toward an interest in positive body image (Cash & Smolak, 2011; Kling et al., 2019). It is unclear exactly how positive and negative body image overlap in terms of their predictors and experience (Tylka & Wood-Barcalow, 2015b). In general, positive body image is less studied than negative body image (Kling et al., 2019), and this is certainly true as it relates to the LGBTQ+ community. It is clear that LGBTQ+ youth face unique challenges and heightened risk for psychopathology (Almeida et al., 2009; Coker et al., 2010; McDonald, 2018). However, what is less understood, although equally important, is what contributes to flourishing, resilience, and psychological well-being in LGBTQ+ youth (Bariola et al., 2017). The present study contributed to this literature by examining influences on healthy perceived weight, perceived attractiveness, and body appreciation, all of which are indicators of healthy body image. The findings of this study shed light on factors that contribute to healthy body image, such as social support, and therefore point to directions for further research.

In addition, pubertal timing is a complex construct that appears to have implications at least for heterosexual, cisgender youth (Graber, 2013); the mixed findings of the current research may imply meaningfully different experiences of adolescence based on sexual and gender identity. These results highlight the need for further research to understand how and when pubertal development influences body image in sexual and gender minority youth, as well as how historical and sociopolitical context shapes these relations.

Finally, given the widespread impact of the COVID-19 pandemic on daily life and psychological well-being in general samples (Simon et al., 2021; Valiente et al., 2021) and LGBTQ+ samples (Baumel et al., 2021; Gato et al., 2021; Krause, 2021), future research should consider how the pandemic influences these relations. Research suggests that experiences in the pandemic have negatively influenced many individuals' body image (Swami et al., 2021) and

disordered eating (Brown et al., 2021; Robertson et al., 2021; Trott et al., 2021). Some studies have examined these relations in the LGBTQ+ community; for example, a qualitative study highlighted ways in which the COVID-19 pandemic has led to challenges for trans individuals' body image (Sahuc, 2020). Given our findings about the importance of perceived social support for LGBTQ+ body image, and the widespread loneliness and lack of social support due to the pandemic (Saltzman et al., 2020), it is particularly urgent to examine these relations in LGBTQ+ youth. Studies have shown the issues that some LGBTQ+ youth face because of isolating in unsupportive or unsafe environments (Fish et al., 2020; Salerno et al., 2020). Future research should investigate how quarantine and isolation, social distancing, online learning, and a variety of other changes to daily life may uniquely influence LGBTQ+ young adults' body image.

### **Conclusion**

LGBTQ+ youth face unique challenges related to their minority identities in addition to typical developmental stressors associated with adolescence and young adulthood. The present research investigated current and developmental influences on positive body image in LGBTQ+ young adults. Our findings highlighted factors that were confirmed as important (e.g., masculinity, perceived social support), factors that appeared unimportant (e.g., femininity when assessed as a set of traits), and factors that yielded mixed results (e.g., pubertal timing, current outness, the timing of sexual identity development milestones, femininity as a single item). These findings are relevant to psychologists, clinicians, public health professionals, policymakers, and the LGBTQ+ community itself. Future research should build on these findings to further examine the complexities of body image development for sexual and gender minority young adults.



### References

- Ålgars, M., Alanko, K., Santtila, P., & Sandnabba, N. K. (2012). Disordered eating and gender identity disorder: A qualitative study. *Eating Disorders*, *20*(4), 300–311.  
<https://doi.org/10.1080/10640266.2012.668482>
- Almeida, J., Johnson, R. M., Corliss, H. L., Molnar, B. E., & Azrael, D. (2009). Emotional distress among LGBT youth: The influence of perceived discrimination based on sexual orientation. *Journal of Youth and Adolescence*, *38*(7), 1001–1014.  
<https://doi.org/10.1007/s10964-009-9397-9>
- Alsubaie, M. M., Stain, H. J., Webster, L. A. D., & Wadman, R. (2019). The role of sources of social support on depression and quality of life for university students. *International Journal of Adolescence and Youth*, *24*(4), 484–496.  
<https://doi.org/10.1080/02673843.2019.1568887>
- Alvy, L. M. (2013). Do lesbian women have a better body image? Comparisons with heterosexual women and model of lesbian-specific factors. *Body Image*, *10*(4), 524–534.  
<https://doi.org/10.1016/j.bodyim.2013.06.002>
- Archibald, A. B., Graber, J. A., & Brooks-Gunn, J. (1999). Associations among parent-adolescent relationships, pubertal growth, dieting, and body image in young adolescent girls: A short-term longitudinal study. *Journal of Research on Adolescence*, *9*(4), 395–415. [https://doi.org/10.1207/s15327795jra0904\\_2](https://doi.org/10.1207/s15327795jra0904_2)
- Ata, R. N., Ludden, A. B., & Lally, M. M. (2007). The effects of gender and family, friend, and media influences on eating behaviors and body image during adolescence. *Journal of Youth and Adolescence*, *36*(8), 1024–1037. <https://doi.org/10.1007/s10964-006-9159-x>

- Austin, S. B., Ziyadeh, N., Kahn, J. A., Camargo, C. A., Colditz, G. A., & Field, A. E. (2004). Sexual orientation, weight concerns, and eating-disordered behaviors in adolescent girls and boys. *Journal of the American Academy of Child and Adolescent Psychiatry*, 43(9), 1115–1123. <https://doi.org/10.1097/01.chi.0000131139.93862.10>
- Badenes-Ribera, L., Fabris, M. A., & Longobardi, C. (2018). The relationship between internalized homonegativity and body image concerns in sexual minority men: A meta-analysis. *Psychology & Sexuality*, 9(3), 251–268. <https://doi.org/10.1080/19419899.2018.1476905>
- Bariola, E., Lyons, A., & Lucke, J. (2017). Flourishing among sexual minority individuals: Application of the dual continuum model of mental health in a sample of lesbians and gay men. *Psychology of Sexual Orientation and Gender Diversity*, 4(1), 43–53. <https://doi.org/10.1037/sgd0000210>
- Baumel, K., Hamlett, M., Wheeler, B., Hall, D., Randall, A. K., & Mickelson, K. (2021). Living through COVID-19: social distancing, computer-mediated communication, and well-being in sexual minority and heterosexual adults. *Journal of Homosexuality*, 68(4), 673–691. <https://doi.org/10.1080/00918369.2020.1868190>
- Bearman, S. K., Presnell, K., Martinez, E., & Stice, E. (2006). The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence*, 35(2), 217–229. <https://doi.org/10.1007/s10964-005-9010-9>
- Beischel, W. J., Schudson, Z. C., Hoskin, R. A., & van Anders, S. M. (in prep). *Gender/sex in samples looks different depending on method and coders: Towards the gender/sex 3x3 for inclusive measures beyond binaries.*

- Beltz, A. M., & Berenbaum, S. A. (2013). Cognitive effects of variations in pubertal timing: Is puberty a period of brain organization for human sex-typed cognition? *Hormones and Behavior*, 63(5), 823–828. <https://doi.org/10.1016/j.yhbeh.2013.04.002>
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42(2), 155–162.
- Benson, P. L., Scales, P. C., Hamilton, S. F., & Sesma, A. (2007). Positive youth development: Theory, research, and applications. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology*. John Wiley & Sons, Inc.
- Beren, S. E., Hayden, H. A., Wilfley, D. E., & Grilo, C. M. (1996). The influence of sexual orientation on body dissatisfaction in adult men and women. *International Journal of Eating Disorders*, 20(2), 135–141. [https://doi.org/10.1002/\(SICI\)1098-108X\(199609\)20:2<135::AID-EAT3>3.0.CO;2-H](https://doi.org/10.1002/(SICI)1098-108X(199609)20:2<135::AID-EAT3>3.0.CO;2-H)
- Berger, U., Weitkamp, K., & Strauss, B. (2009). Weight limits, estimations of future BMI, subjective pubertal timing and physical appearance comparisons among adolescent girls as precursors of disturbed eating behaviour in a community sample. *European Eating Disorders Review: The Journal of the Eating Disorders Association*, 17(2), 128–136. <https://doi.org/10.1002/erv.898>
- Bergeron, S. M., & Senn, C. Y. (1998). Body image and sociocultural norms: A comparison of heterosexual and lesbian women. *Psychology of Women Quarterly*, 22(3), 385–401. <https://doi.org/10.1111/j.1471-6402.1998.tb00164.x>
- Blashill, A. J. (2011). Gender roles, eating pathology, and body dissatisfaction in men: A meta-analysis. *Body Image*, 8(1), 1–11. <https://doi.org/10.1016/j.bodyim.2010.09.002>

- Borch, F. L. (2010). The history of Don't Ask, Don't Tell in the Army: How we got to it and why it is what it is. *Military Law Review*, 203, 189–206.
- Bordo, S. (1993). *Unbearable weight: Feminism, Western culture, and the body*. University of California Press.
- Bovier, P. A., Chamot, E., & Perneger, T. V. (2004). Perceived stress, internal resources, and social support as determinants of mental health among young adults. *Quality of Life Research*, 13(1), 161–170. <https://doi.org/10.1023/B:QURE.0000015288.43768.e4>
- Brausch, A. M., & Decker, K. M. (2014). Self-esteem and social support as moderators of depression, body image, and disordered eating for suicidal ideation in adolescents. *Journal of Abnormal Child Psychology*, 42(5), 779–789. <https://doi.org/10.1007/s10802-013-9822-0>
- Brooks, V. R. (1981). *Minority stress and lesbian women*. Free Press.
- Brooks-Gunn, J., Graber, J. A., & Paikoff, R. L. (1994). Studying links between hormones and negative affect: Models and measures. *Journal of Research on Adolescence*, 4(4), 469–486. [https://doi.org/10.1207/s15327795jra0404\\_2](https://doi.org/10.1207/s15327795jra0404_2)
- Broverman, I. K., Vogel, S. R., Broverman, D. M., Clarkson, F. E., & Rosenkrantz, P. S. (1972). Sex-role stereotypes: A current appraisal. *Journal of Social Issues*, 28(2), 59–78. <https://doi.org/10.1111/j.1540-4560.1972.tb00018.x>
- Brown, S., Opitz, M.-C., Peebles, A. I., Sharpe, H., Duffy, F., & Newman, E. (2021). A qualitative exploration of the impact of COVID-19 on individuals with eating disorders in the UK. *Appetite*, 156, 104977. <https://doi.org/10.1016/j.appet.2020.104977>

- Brumbaugh-Johnson, S. M., & Hull, K. E. (2019). Coming out as transgender: Navigating the social implications of a transgender identity. *Journal of Homosexuality*, 66(8), 1148–1177. <https://doi.org/10.1080/00918369.2018.1493253>
- Bucchianeri, M. M., Arikian, A. J., Hannan, P. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2013). Body dissatisfaction from adolescence to young adulthood: Findings from a 10-year longitudinal study. *Body Image*, 10(1), 1–7. <https://doi.org/10.1016/j.bodyim.2012.09.001>
- Buck Louis, G. M., Gray, L. E., Marcus, M., Ojeda, S. R., Pescovitz, O. H., Witchel, S. F., Sippell, W., Abbott, D. H., Soto, A., Tyl, R. W., Bourguignon, J.-P., Skakkebaek, N. E., Swan, S. H., Golub, M. S., Wabitsch, M., Toppari, J., & Euling, S. Y. (2008). Environmental factors and puberty timing: Expert panel research needs. *Pediatrics*, 121, S192–S207. <https://doi.org/10.1542/peds.1813E>
- Burnette, C. B., Kwitowski, M. A., Trujillo, M. A., & Perrin, P. B. (2019). Body appreciation in lesbian, bisexual, and queer women: Examining a model of social support, resilience, and self-esteem. *Health Equity*, 3(1), 238–245. <https://doi.org/10.1089/heq.2019.0003>
- Cafri, G., & Thompson, J. K. (2004). Measuring male body image: A review of the current methodology. *Psychology of Men & Masculinity*, 5(1), 18–29. <https://doi.org/10.1037/1524-9220.5.1.18>
- Carter, R., Blazek, J., & Kwesele, C. (2019). Perceptions of pubertal timing relative to peers: Comparison targets and social contexts of comparison. *Cultural Diversity and Ethnic Minority Psychology*, 26. <https://doi.org/10.1037/cdp0000287>
- Cash, T. F., & Smolak, L. (Eds.). (2011). *Body image: A handbook of science, practice, and prevention* (2nd ed.). Guilford Press.

- Cass, V. (1996). *Sexual orientation identity formation: A Western phenomenon*. In R. P. Cabaj & T. S. Stein (Eds.), *Textbook of homosexuality and mental health* (pp. 227–251). American Psychiatric Association.
- Cass, V. C. (1979). Homosexual identity formation: A theoretical model. *Journal of Homosexuality*, 4(3), 219–235. [https://doi.org/10.1300/J082v04n03\\_01](https://doi.org/10.1300/J082v04n03_01)
- Cella, S., Iannaccone, M., & Cotrufo, P. (2013). Influence of gender role orientation (masculinity versus femininity) on body satisfaction and eating attitudes in homosexuals, heterosexuals and transsexuals. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 18(2), 115–124. <https://doi.org/10.1007/s40519-013-0017-z>
- Chesir-Teran, D., & Hughes, D. (2009). Heterosexism in high school and victimization among lesbian, gay, bisexual, and questioning students. *Journal of Youth and Adolescence*, 38(7), 963–975. <https://doi.org/10.1007/s10964-008-9364-x>
- Chu, P. S., Saucier, D. A., & Hafner, E. (2010). Meta-analysis of the relationships between social support and well-being in children and adolescents. *Journal of Social and Clinical Psychology*, 29(6), 624–645. <https://doi.org/10.1521/jscp.2010.29.6.624>
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310–357. <https://doi.org/10.1037/0033-2909.98.2.310>
- Cohen, S. (2004). Social relationships and health. *American Psychologist*, 59(8), 676–684. <https://doi.org/10.1037/0003-066X.59.8.676>
- Coker, T. R., Austin, S. B., & Schuster, M. A. (2010). The health and health care of lesbian, gay, and bisexual adolescents. *Annual Review of Public Health*, 31, 457–477. <https://doi.org/10.1146/annurev.publhealth.012809.103636>

Copeland, W., Shanahan, L., Miller, S., Costello, E. J., Angold, A., & Maughan, B. (2010).

Outcomes of early pubertal timing in young women: A prospective population-based study. *American Journal of Psychiatry*, *167*(10), 1218–1225.

<https://doi.org/10.1176/appi.ajp.2010.09081190>

Copeland, W. E., Worthman, C., Shanahan, L., Costello, E. J., & Angold, A. (2019). Early

pubertal timing and testosterone associated with higher levels of adolescent depression in girls. *Journal of the American Academy of Child & Adolescent Psychiatry*,

S0890856719301121. <https://doi.org/10.1016/j.jaac.2019.02.007>

Corrigan, P., & Matthews, A. (2003). Stigma and disclosure: Implications for coming out of the closet. *Journal of Mental Health*, *12*(3), 235–248.

<https://doi.org/10.1080/0963823031000118221>

Crockett, L. J., Dearthorff, J., Johnson, M., Irwin, C., & Petersen, A. C. (2019). Puberty education in a global context: Knowledge gaps, opportunities, and implications for policy. *Journal of Research on Adolescence*,

*29*(1), 177–195. <https://doi.org/10.1111/jora.12452>

Dearthorff, J., Hoyt, L. T., Carter, R., & Shirtcliff, E. A. (2019). Next steps in puberty research:

Broadening the lens toward understudied populations. *Journal of Research on*

*Adolescence*, *29*(1), 133–154. <https://doi.org/10.1111/jora.12402>

de Guzman, N. S., & Nishina, A. (2014). A longitudinal study of body dissatisfaction and

pubertal timing in an ethnically diverse adolescent sample. *Body Image*, *11*(1), 68–71.

<https://doi.org/10.1016/j.bodyim.2013.11.001>

Dentato, M. P., Craig, S. L., Messinger, L., Lloyd, M., & McInroy, L. B. (2014). Outness among

LGBTQ social work students in North America: The contribution of environmental

supports and perceptions of comfort. *Social Work Education*, 33(4), 485–501.

<https://doi.org/10.1080/02615479.2013.855193>

Dorn, L. D., Dahl, R. E., Woodward, H. R., & Biro, F. (2006). Defining the boundaries of early adolescence: A user's guide to assessing pubertal status and pubertal timing in research with adolescents. *Applied Developmental Science*, 10(1), 30–56.

[https://doi.org/10.1207/s1532480xads1001\\_3](https://doi.org/10.1207/s1532480xads1001_3)

Dubas, J. S., Graber, J. A., & Petersen, A. C. (1991). The effects of pubertal development on achievement during adolescence. *American Journal of Education*, 99(4), 444–460.

<https://doi.org/10.1086/443993>

Duncan, P. D., Ritter, P. L., Dornbusch, S. M., Gross, R. T., & Merrill Carlsmith, J. (1985). The effects of pubertal timing on body image, school behavior, and deviance. *Journal of Youth and Adolescence*, 14(3), 227–235. <https://doi.org/10.1007/BF02090320>

Dunlap, A. (2016). Changes in coming out milestones across five age cohorts. *Journal of Gay & Lesbian Social Services*, 28(1), 20–38. <https://doi.org/10.1080/10538720.2016.1124351>

Eliason, M. J., & Schope, R. (2007). Shifting sands or solid foundation? Lesbian, gay, bisexual, and transgender identity formation. In I. H. Meyer & M. E. Northridge (Eds.), *The health of sexual minorities: Public health perspectives on lesbian, gay, bisexual and transgender populations* (pp. 3–26). Springer US. [https://doi.org/10.1007/978-0-387-31334-4\\_1](https://doi.org/10.1007/978-0-387-31334-4_1)

Emetu, R. E., & Rivera, G. (2018). After sexual identity disclosure: An ecological perspective of LGB young adults. *American Journal of Health Behavior*, 42(4), 45–60.

<https://doi.org/10.5993/AJHB.42.4.5>



- Evans, N. J., & Broido, E. M. (1999). Coming out in college residence halls: Negotiation, meaning making, challenges, supports. *Journal of College Student Development, 40*(6), 11.
- Ewan, L. A., Middleman, A. B., & Feldmann, J. (2014). Treatment of anorexia nervosa in the context of transsexuality: A case report. *The International Journal of Eating Disorders, 47*(1), 112–115. <https://doi.org/10.1002/eat.22209>
- Feldman, S. E., & Wright, A. J. (2013). Dual impact: Outness and LGB identity formation on mental health. *Journal of Gay & Lesbian Social Services, 25*(4), 443–464. <https://doi.org/10.1080/10538720.2013.833066>
- Fingerhut, A. W., Riggle, E. D. B., & Rostosky, S. S. (2011). Same-sex marriage: The social and psychological implications of policy and debates. *Journal of Social Issues, 67*(2), 225–241. <https://doi.org/10.1111/j.1540-4560.2011.01695.x>
- Fish, J. N., McInroy, L. B., Pacey, M. S., Williams, N. D., Henderson, S., Levine, D. S., & Edsall, R. N. (2020). “I’m kinda stuck at home with unsupportive parents right now”: LGBTQ youths’ experiences with COVID-19 and the importance of online support. *Journal of Adolescent Health, 67*(3), 450–452. <https://doi.org/10.1016/j.jadohealth.2020.06.002>
- Floyd, F. J., & Bakeman, R. (2006). Coming-out across the life course: Implications of age and historical context. *Archives of Sexual Behavior, 35*(3), 287–296. <https://doi.org/10.1007/s10508-006-9022-x>
- Floyd, F. J., & Stein, T. S. (2002). Sexual orientation identity formation among gay, lesbian, and bisexual youths: Multiple patterns of milestone experiences. *Journal of Research on Adolescence, 12*(2), 167–191. <https://doi.org/10.1111/1532-7795.00030>

- Fonseca, H., & Matos, M. G. (2011). Are adolescent weight-related problems and general well-being essentially an issue of age, gender or rather a pubertal timing issue? *J Pediatr Endocrinol Metab*, *24*(5–6), 251–256. <https://doi.org/10.1515/jpem.2011.027>
- Forbes, E. E., & Dahl, R. E. (2010). Pubertal development and behavior: Hormonal activation of social and motivational tendencies. *Brain and Cognition*, *72*(1), 66–72. <https://doi.org/10.1016/j.bandc.2009.10.007>
- Frederick, D., & Essayli, J. (2016). Male body image: The roles of sexual orientation and body mass index across five national U.S. studies. *Psychology of Men & Masculinity*, *17*(4), 336–351. <https://doi.org/10.1037/men0000031>
- Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification theory. *Psychology of Women Quarterly*, *21*(2), 173–206. <https://doi.org/10.1111/j.1471-6402.1997.tb00108.x>
- French, K. A., Dumani, S., Allen, T. D., & Shockley, K. M. (2018). A meta-analysis of work-family conflict and social support. *Psychological Bulletin*, *144*(3), 284–314. <https://doi.org/10.1037/bul0000120>
- Friedman, M. S., Marshal, M. P., Stall, R., Cheong, J., & Wright, E. R. (2008). Gay-related development, early abuse and adult health outcomes among gay males. *AIDS and Behavior*, *12*(6), 891–902. <https://doi.org/10.1007/s10461-007-9319-3>
- Friedman, R. C. (1999). Homosexuality, psychopathology, and suicidality. *Archives of General Psychiatry*, *56*(10), 887. <https://doi.org/10.1001/archpsyc.56.10.887>
- Frost, D. M., & Meyer, I. H. (2009). Internalized homophobia and relationship quality among lesbians, gay men, and bisexuals. *Journal of Counseling Psychology*, *56*(1), 97–109. <https://doi.org/10.1037/a0012844>

- Gajdos, Z. K. Z., Henderson, K. D., Hirschhorn, J. N., & Palmert, M. R. (2010). Genetic determinants of pubertal timing in the general population. *Molecular and Cellular Endocrinology*, 324(1–2), 21–29. <https://doi.org/10.1016/j.mce.2010.01.038>
- Gato, J., Barrientos, J., Tasker, F., Miscioscia, M., Cerqueira-Santos, E., Malmquist, A., Seabra, D., Leal, D., Houghton, M., Poli, M., Gubello, A., Ramos, M. de M., Guzmán, M., Urzúa, A., Ulloa, F., & Wurm, M. (2021). Psychosocial effects of the COVID-19 pandemic and mental health among LGBTQ+ young adults: A cross-cultural comparison across six nations. *Journal of Homosexuality*, 68(4), 612–630. <https://doi.org/10.1080/00918369.2020.1868186>
- Ge, X., & Natsuaki, M. N. (2009). In search of explanations for early pubertal timing effects on developmental psychopathology. *Current Directions in Psychological Science*, 18(6), 327–331. <https://doi.org/10.1111/j.1467-8721.2009.01661.x>
- Gerner, B., & Wilson, P. H. (2005). The relationship between friendship factors and adolescent girls' body image concern, body dissatisfaction, and restrained eating. *International Journal of Eating Disorders*, 37(4), 313–320. <https://doi.org/10.1002/eat.20094>
- Gestsdottir, S., Arnarsson, A., Magnusson, K., Arngrimsson, S. A., Sveinsson, T., & Johannsson, E. (2015). Gender differences in development of mental well-being from adolescence to young adulthood: An eight-year follow-up study. *Scandinavian Journal of Public Health*, 43(3), 269–275. <https://doi.org/10.1177/1403494815569864>
- Gil, S. (2007). Body image, well-being and sexual satisfaction: A comparison between heterosexual and gay men. *Sexual and Relationship Therapy*, 22(2), 237–244. <https://doi.org/10.1080/14681990600855042>

Gillen, M. M., & Lefkowitz, E. S. (2006). Gender role development and body image among male and female first year college students. *Sex Roles*, 55(1–2), 25–37.

<https://doi.org/10.1007/s11199-006-9057-4>

Gios, L., Mirandola, M., Sherriff, N., Toskin, I., Blondeel, K., Dias, S., Staneková, D., Folch, C.,

Schink, S. B., Nöstlinger, C., Berghe, W. V., Naseva, E., & Alexiev, I. (2021). Being in the closet. Correlates of outness among MSM in 13 European cities. *Journal of*

*Homosexuality*, 68(3), 415–433. <https://doi.org/10.1080/00918369.2019.1656033>

Gnan, G. H., Rahman, Q., Ussher, G., Baker, D., West, E., & Rimes, K. A. (2019). General and LGBTQ-specific factors associated with mental health and suicide risk among LGBTQ students. *Journal of Youth Studies*, 22(10), 1393–1408.

<https://doi.org/10.1080/13676261.2019.1581361>

Graber, J. A. (2008). Pubertal and neuroendocrine development and risk for depression. In L. B. Sheeber & N. B. Allen (Eds.), *Adolescent Emotional Development and the Emergence of Depressive Disorders* (pp. 74–91). Cambridge University Press.

<https://doi.org/10.1017/CBO9780511551963.005>

Graber, J. A. (2013). Pubertal timing and the development of psychopathology in adolescence and beyond. *Hormones and Behavior*, 64(2), 262–269.

<https://doi.org/10.1016/j.yhbeh.2013.04.003>

Graber, J. A., Lewinsohn, P. M., Seeley, J. R., & Brooks-Gunn, J. (1997). Is psychopathology associated with the timing of pubertal development? *Journal of the American Academy of Child & Adolescent Psychiatry*, 36(12), 1768–1776. [https://doi.org/10.1097/00004583-](https://doi.org/10.1097/00004583-199712000-00026)

[199712000-00026](https://doi.org/10.1097/00004583-199712000-00026)

- Graber, J. A., Seeley, J. R., Brooks-Gunn, J., & Lewinsohn, P. M. (2004). Is pubertal timing associated with psychopathology in young adulthood? *Journal of the American Academy of Child & Adolescent Psychiatry*, *43*(6), 718–726.  
<https://doi.org/10.1097/01.chi.0000120022.14101.11>
- Griffiths, S., Murray, S. B., & Touyz, S. (2014). Extending the masculinity hypothesis: An investigation of gender role conformity, body dissatisfaction, and disordered eating in young heterosexual men. *Psychology of Men & Masculinity*, *16*(1), 108–114.  
<https://doi.org/10.1037/a0035958>
- Grogan, S. (2016). *Body image: Understanding body dissatisfaction in men, women and children*. Guyana: Taylor & Francis.
- Grogan, S. (2006). Body image and health: Contemporary perspectives. *Journal of Health Psychology*, *11*(4), 523–530. <https://doi.org/10.1177/1359105306065013>
- Grossman, A. H., Foss, A. H., & D’Augelli, A. R. (2014). Puberty: Maturation, timing and adjustment, and sexual identity developmental milestones among lesbian, gay, and bisexual youth. *Journal of LGBT Youth*, *11*(2), 107–124.  
<https://doi.org/10.1080/19361653.2014.846068>
- Grov, C., Bimbi, D. S., Nanín, J. E., & Parsons, J. T. (2006). Race, ethnicity, gender, and generational factors associated with the coming-out process among gay, lesbian, and bisexual individuals. *The Journal of Sex Research*, *43*(2), 115–121.  
<https://doi.org/10.1080/00224490609552306>
- Grower, P., Ward, L. M., & Beltz, A. M. (2019). Downstream consequences of pubertal timing for young women’s body beliefs. *Journal of Adolescence*, *72*, 162–166.  
<https://doi.org/10.1016/j.adolescence.2019.02.012>

Günther, A. L. B., Karaolis-Danckert, N., Kroke, A., Remer, T., & Buyken, A. E. (2010).

Dietary protein intake throughout childhood is associated with the timing of puberty. *The Journal of Nutrition*, 140(3), 565–571. <https://doi.org/10.3945/jn.109.114934>

Haines, M. E., Erchull, M. J., Liss, M., Turner, D. L., Nelson, J. A., Ramsey, L. R., & Hurt, M.

M. (2008). Predictors and effects of self-objectification in lesbians. *Psychology of Women Quarterly*, 32(2), 181–187. <https://doi.org/10.1111/j.1471-6402.2008.00422.x>

Haltom, T. M., & Ratcliff, S. (2020). Effects of sex, race, and education on the timing of coming out among lesbian, gay, and bisexual adults in the U.S. *Arch Sex Behav*.

<https://doi.org/10.1007/s10508-020-01776-x>

Hamlat, E. J., Snyder, H. R., Young, J. F., & Hankin, B. L. (2019). Pubertal timing as a

transdiagnostic risk for psychopathology in youth. *Clinical Psychological Science*, 7(3), 411–429. <https://doi.org/10.1177/2167702618810518>

Harris, K. (2013). *The Add Health study: Design and accomplishments*.

<https://doi.org/10.17615/C6TW87>

Harter, S., & Whitesell, N. R. (2001). On the importance of importance ratings in understanding adolescents' self-esteem: Beyond statistical parsimony. In R. J. Riding & S. G. (Eds.), *Self perception* (pp. 3–24). Ablex Publishing.

Harter, S. (2003). The development of self-representations during childhood and adolescence. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 610–642). The Guilford Press.

Hatchel, T., Ingram, K. M., Mintz, S., Hartley, C., Valido, A., Espelage, D. L., & Wyman, P. (2019). Predictors of suicidal ideation and attempts among LGBTQ adolescents: The roles of help-seeking beliefs, peer victimization, depressive symptoms, and drug use.

*Journal of Child and Family Studies*, 28(9), 2443–2455. <https://doi.org/10.1007/s10826-019-01339-2>

Hatchel, T., Merrin, G. J., & Espelage, and D. (2019). Peer victimization and suicidality among LGBTQ youth: The roles of school belonging, self-compassion, and parental support. *Journal of LGBT Youth*, 16(2), 134–156. <https://doi.org/10.1080/19361653.2018.1543036>

Hatchel, T., Valido, A., De Pedro, K. T., Huang, Y., & Espelage, D. L. (2019). Minority stress among transgender adolescents: The role of peer victimization, school belonging, and ethnicity. *Journal of Child and Family Studies*, 28(9), 2467–2476. <https://doi.org/10.1007/s10826-018-1168-3>

Hawkins, R. C., Turell, S., & Jackson, L. J. (1983). Desirable and undesirable masculine and feminine traits in relation to students' dieting tendencies and body image dissatisfaction. *Sex Roles*, 9(6), 705–718. <https://doi.org/10.1007/BF00289799>

He, J., Sun, S., Lin, Z., & Fan, X. (2020). Body dissatisfaction and sexual orientations: A quantitative synthesis of 30 years research findings. *Clinical Psychology Review*, 81, 101896. <https://doi.org/10.1016/j.cpr.2020.101896>

Heerde, J. A., & Hemphill, S. A. (2018). Examination of associations between informal help-seeking behavior, social support, and adolescent psychosocial outcomes: A meta-analysis. *Developmental Review*, 47, 44–62. <https://doi.org/10.1016/j.dr.2017.10.001>

Heiden-Rootes, K., Salas, J., Moore, R., Hasan, S., & Wilson, L. (2020). Peer victimization and mental health outcomes for lesbian, gay, bisexual, and heterosexual youth: A latent class analysis. *Journal of School Health*, 90(10), 771–778. <https://doi.org/10.1111/josh.12940>

- Henrichs-Beck, C., & Szymanski, D. (2016). Gender expression, body–gender identity incongruence, thin ideal internalization, and lesbian body dissatisfaction. *Psychology of Sexual Orientation and Gender Diversity*, 4. <https://doi.org/10.1037/sgd0000214>
- Henrickson, M. (2007). “You have to be strong to be gay”: Bullying and educational attainment in LGB New Zealanders. *Journal of Gay & Lesbian Social Services*, 19(3–4), 67–85. <https://doi.org/10.1080/10538720802161565>
- Herd, G. H., & Boxer, A. (1996). *Children of horizons: How gay and lesbian teens are leading a new way out of the closet*. Beacon Press.
- Herd, G., & McClintock, M. (2000). The magical age of 10. *Archives of Sexual Behavior*, 29(6), 587–606. <https://doi.org/10.1023/a:1002006521067>
- Herek, G. M., & Capitano, J. P. (1999). AIDS stigma and sexual prejudice. *American Behavioral Scientist*, 42(7), 1130–1147. <https://doi.org/10.1177/0002764299042007006>
- Herek, G. M., & Glunt, E. K. (1988). An epidemic of stigma: Public reactions to AIDS. *American Psychologist*, 43(11), 886–891. <https://doi.org/10.1037/0003-066X.43.11.886>
- Hershberger, S. L., & D’Augelli, A. R. (1995). The impact of victimization on the mental health and suicidality of lesbian, gay, and bisexual youths. *Developmental Psychology*, 31(1), 65–74. <https://doi.org/10.1037/0012-1649.31.1.65>
- Hill, J. P., & Lynch, M. E. (1983). The intensification of gender-related role expectations during early adolescence. In J. Brooks-Gunn & A. C. Petersen (Eds.), *Girls at Puberty* (pp. 201–228). Springer US. [https://doi.org/10.1007/978-1-4899-0354-9\\_10](https://doi.org/10.1007/978-1-4899-0354-9_10)
- Hong, J. S., & Garbarino, J. (2012). Risk and protective factors for homophobic bullying in schools: An application of the social–ecological framework. *Educational Psychology Review*, 24(2), 271–285. <https://doi.org/10.1007/s10648-012-9194-y>



Hospers, H. J., & Jansen, A. (2005). Why homosexuality is a risk factor for eating disorders in males. *Journal of Social and Clinical Psychology, 24*(8), 1188–1201.

<https://doi.org/10.1521/jscp.2005.24.8.1188>

Hosseini, S. A., & Padhy, R. K. (2019). Body image distortion. In *StatPearls*. Treasure Island: StatPearls Publishing. <http://www.ncbi.nlm.nih.gov/books/NBK546582/>

Hughes, J. L., Camden, A. A., & Yangchen, T. (2016). Rethinking and updating demographic questions: Guidance to improve descriptions of research samples. *Psi Chi Journal of Psychological Research, 21*(3), 138–151. <https://doi.org/10.24839/2164-8204.JN21.3.138>

Ibrahim, N., Che Din, N., Ahmad, M., Amit, N., Ghazali, S. E., Wahab, S., Abdul Kadir, N. B., Halim, F. W., & A. Halim, M. R. T. (2019). The role of social support and spiritual wellbeing in predicting suicidal ideation among marginalized adolescents in Malaysia. *BMC Public Health, 19*(4), 553. <https://doi.org/10.1186/s12889-019-6861-7>

Ikiz, F. E., & Cakar, F. S. (2010). Perceived social support and self-esteem in adolescence. *Procedia - Social and Behavioral Sciences, 5*, 2338–2342.

<https://doi.org/10.1016/j.sbspro.2010.07.460>

Jager, J., & Davis-Kean, P. E. (2011). Same-sex sexuality and adolescent psychological well-being: The influence of sexual orientation, early reports of same-sex attraction, and gender. *Self and Identity, 10*(4), 417–444. <https://doi.org/10.1080/15298861003771155>

Jones, Bethany A., Pierre Bouman, W., Haycraft, E., & Arcelus, J. (2019). Gender congruence and body satisfaction in nonbinary transgender people: A case control study.

*International Journal of Transgenderism, 20*(2–3), 263–274.

<https://doi.org/10.1080/15532739.2018.1538840>

- Jones, Bethany Alice, Haycraft, E., Murjan, S., & Arcelus, J. (2016). Body dissatisfaction and disordered eating in trans people: A systematic review of the literature. *International Review of Psychiatry (Abingdon, England)*, 28(1), 81–94.  
<https://doi.org/10.3109/09540261.2015.1089217>
- Jones, D. C., & Crawford, J. K. (2006). The peer appearance culture during adolescence: Gender and body mass variations. *Journal of Youth and Adolescence*, 35(2), 243.  
<https://doi.org/10.1007/s10964-005-9006-5>
- Jordan, K. M., & Deluty, R. H. (1998). Coming out for lesbian women: Its relation to anxiety, positive affectivity, self-esteem, and social support. *Journal of Homosexuality*, 35(2), 41–63. [https://doi.org/10.1300/J082v35n02\\_03](https://doi.org/10.1300/J082v35n02_03)
- Kling, J., Kwakkenbos, L., Diedrichs, P. C., Rumsey, N., Frisén, A., Brandão, M. P., Silva, A. G., Dooley, B., Rodgers, R. F., & Fitzgerald, A. (2019). Systematic review of body image measures. *Body Image*, 30, 170–211. <https://doi.org/10.1016/j.bodyim.2019.06.006>
- Klump, K. L. (2013). Puberty as a critical risk period for eating disorders: A review of human and animal studies. *Hormones and Behavior*, 64(2), 399–410.  
<https://doi.org/10.1016/j.yhbeh.2013.02.019>
- Koff, E., Lucas, M., Migliorini, R., & Grossmith, S. (2010). Women and body dissatisfaction: Does sexual orientation make a difference? *Body Image*, 7(3), 255–258.  
<https://doi.org/10.1016/j.bodyim.2010.03.001>
- Kosciw, J. G., Greytak, E. A., Diaz, E. M., and Bartkiewicz, M. J. (2010). *The 2009 National School Climate Survey: The experiences of lesbian, gay, bisexual and transgender youth in our nation's schools*. New York: GLSEN.

- Kosciw, J. G., Palmer, N. A., & Kull, R. M. (2015). Reflecting resiliency: Openness about sexual orientation and/or gender identity and its relationship to well-being and educational outcomes for LGBT students. *American Journal of Community Psychology*, 55(1), 167–178. <https://doi.org/10.1007/s10464-014-9642-6>
- Krause, K. D. (2021). Implications of the COVID-19 pandemic on LGBTQ communities. *Journal of Public Health Management and Practice*, 27, S69. <https://doi.org/10.1097/PHH.0000000000001273>
- Kvalem, I. L., Træen, B., Markovic, A., & von Soest, T. (2019). Body image development and sexual satisfaction: A prospective study from adolescence to adulthood. *The Journal of Sex Research*, 56(6), 791–801. <https://doi.org/10.1080/00224499.2018.1518400>
- Lakkis, J., Ricciardelli, L. A., & Williams, R. J. (1999). Role of sexual orientation and gender-related traits in disordered eating. *Sex Roles: A Journal of Research*, 41(1–2), 1–16. <https://doi.org/10.1023/A:1018829506907>
- Lamke, L. K. (1982). The impact of sex-role orientation on self-esteem in early adolescence. *Child Development*, 53(6), 1530–1535. <https://doi.org/10.2307/1130080>
- Laumann, E. O. (2000). *The social organization of sexuality: Sexual practices in the United States*. United Kingdom: University of Chicago Press.
- Lawrie, Z., Sullivan, E. A., Davies, P. S. W., & Hill, R. J. (2006). Media influence on the body image of children and adolescents. *Eating Disorders*, 14(5), 355–364. <https://doi.org/10.1080/10640260600952506>
- Levitt, H. M. (2019). A psychosocial genealogy of LGBTQ+ gender: An empirically based theory of gender and gender identity cultures. *Psychology of Women Quarterly*, 43(3), 275–297. <https://doi.org/10.1177/0361684319834641>

- Logan, C., & Carter, A. (2017). Coming out and gay identity development. In C. B. Roland & L. D. Burlew (Eds.), *Counseling LGBTQ adults throughout the life span* (pp. 3–5). American Counseling Association.
- Ludwig, M. R., & Brownell, K. D. (1999). Lesbians, bisexual women, and body image: An investigation of gender roles and social group affiliation. *International Journal of Eating Disorders*, 25(1), 89–97. [https://doi.org/10.1002/\(SICI\)1098-108X\(199901\)25:1<89::AID-EAT11>3.0.CO;2-T](https://doi.org/10.1002/(SICI)1098-108X(199901)25:1<89::AID-EAT11>3.0.CO;2-T)
- Markey, C. N. (2010). Invited commentary: Why body image is important to adolescent development. *Journal of Youth and Adolescence*, 39(12), 1387–1391. <https://doi.org/10.1007/s10964-010-9510-0>
- Markey, C. N., & Markey, P. M. (2011). Body image. In R. J. R. Levesque (Ed.), *Encyclopedia of adolescence* (pp. 310–320). Springer. [https://doi.org/10.1007/978-1-4419-1695-2\\_25](https://doi.org/10.1007/978-1-4419-1695-2_25)
- Marshall, W. A., & Tanner, J. M. (1969). Variations in pattern of pubertal changes in girls. *Archives of Disease in Childhood*, 44(235), 291–303.
- Marshall, W. A., & Tanner, J. M. (1970). Variations in the pattern of pubertal changes in boys. *Archives of Disease in Childhood*, 45(239), 13–23.
- Martos, A. J., Nezhad, S., & Meyer, I. H. (2015). Variations in sexual identity milestones among lesbians, gay men, and bisexuals. *Sexuality Research and Social Policy*, 12(1), 24–33. <https://doi.org/10.1007/s13178-014-0167-4>
- Massey, C. J., Keener, E., & McGraw, J. S. (2020). The role of masculinity and femininity in body objectification: Comparison of heterosexual and gay communities. *Gender Issues*. <https://doi.org/10.1007/s12147-020-09263-2>

- May, A. L., Kim, J.-Y., McHale, S. M., & Crouter, A. (2006). Parent-adolescent relationships and the development of weight concerns from early to late adolescence. *The International Journal of Eating Disorders*, 39(8), 729–740. <https://doi.org/10.1002/eat.20285>
- McClain, Z., & Peebles, R. (2016). Body image and eating disorders among lesbian, gay, bisexual, and transgender youth. *Pediatric Clinics*, 63(6), 1079–1090. <https://doi.org/10.1016/j.pcl.2016.07.008>
- McCreary, D. R., & Sasse, D. K. (2000). An exploration of the drive for muscularity in adolescent boys and girls. *Journal of American College Health*, 48(6), 297–304. <https://doi.org/10.1080/07448480009596271>
- McCreary, D. R., Sasse, D. K., Saucier, D. M., & Dorsch, K. D. (2004). Measuring the drive for muscularity: Factorial validity of the Drive for Muscularity Scale in men and women. *Psychology of Men & Masculinity*, 5(1), 49–58. <https://doi.org/10.1037/1524-9220.5.1.49>
- McCreary, D. R., Saucier, D. M., & Courtenay, W. H. (2005). The drive for muscularity and masculinity: Testing the associations among gender-role traits, behaviors, attitudes, and conflict. *Psychology of Men & Masculinity*, 6(2), 83–94. <https://doi.org/10.1037/1524-9220.6.2.83>
- McDonald, K. (2018). Social support and mental health in LGBTQ adolescents: A review of the literature. *Issues in Mental Health Nursing*, 39(1), 16–29. <https://doi.org/10.1080/01612840.2017.1398283>
- McGuire, J. K., Doty, J. L., Catalpa, J. M., & Ola, C. (2016). Body image in transgender young people: Findings from a qualitative, community based study. *Body Image*, 18, 96–107. <https://doi.org/10.1016/j.bodyim.2016.06.004>

- Mendelson, B. K., Mendelson, M. J., & White, D. R. (2001). Body-Esteem Scale for Adolescents and Adults. *Journal of Personality Assessment*, 76(1), 90–106.  
[https://doi.org/10.1207/S15327752JPA7601\\_6](https://doi.org/10.1207/S15327752JPA7601_6)
- Mendle, J. (2014). Beyond pubertal timing: New directions for studying individual differences in development. *Current Directions in Psychological Science*, 23(3), 215–219.  
<https://doi.org/10.1177/0963721414530144>
- Mendle, J., Beltz, A. M., Carter, R., & Dorn, L. D. (2019). Understanding puberty and its measurement: Ideas for research in a new generation. *Journal of Research on Adolescence*, 29(1), 82–95. <https://doi.org/10.1111/jora.12371>
- Mendle, J., & Ferrero, J. (2012). Detrimental psychological outcomes associated with pubertal timing in adolescent boys. *Developmental Review*, 32(1), 49–66.  
<https://doi.org/10.1016/j.dr.2011.11.001>
- Meyer, C., Blissett, J., & Oldfield, C. (2001). Sexual orientation and eating psychopathology: The role of masculinity and femininity. *International Journal of Eating Disorders*, 29(3), 314–318. <https://doi.org/10.1002/eat.1024>
- Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior*, 36(1), 38–56. <https://doi.org/10.2307/2137286>
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129(5), 674–697.
- Miller, J. M., & Luk, J. W. (2019). A systematic review of sexual orientation disparities in disordered eating and weight-related behaviors among adolescents and young adults:

- Toward a developmental model. *Adolescent Research Review*, 4(2), 187–208.  
<https://doi.org/10.1007/s40894-018-0079-2>
- Mohr, J., & Fassinger, R. (2000). Measuring dimensions of lesbian and gay male experience. *Measurement and Evaluation in Counseling and Development*, 33(2), 66–90.  
<https://doi.org/10.1080/07481756.2000.12068999>
- Moody, C., Obear, K., Gasser, H., Cheah, S., & Fechter, T. (2013). *ACPA standards for demographic questions*. <https://www.myacpa.org/sites/default/files/Proposal-Demographic-Questions-and-Responses-2.pdf>
- Moran, T. E., Chen, C. Y.-C., & Tryon, G. S. (2018). Bully victimization, depression, and the role of protective factors among college LGBTQ students. *Journal of Community Psychology*, 46(7), 871–884. <https://doi.org/10.1002/jcop.21978>
- Morris, J. F., Waldo, C. R., & Rothblum, E. D. (2001). A model of predictors and outcomes of outness among lesbian and bisexual women. *American Journal of Orthopsychiatry*, 71(1), 61–71. <https://doi.org/10.1037/0002-9432.71.1.61>
- Morrison, M. A., Morrison, T. G., & Sager, C.-L. (2004). Does body satisfaction differ between gay men and lesbian women and heterosexual men and women? A meta-analytic review. *Body Image*, 1(2), 127–138. <https://doi.org/10.1016/j.bodyim.2004.01.002>
- Muñoz-Plaza, C., Quinn, S. C., & Rounds, K. A. (2002). Lesbian, gay, bisexual and transgender students: Perceived social support in the high school environment. *The High School Journal*, 85(4), 52–63.
- Murray, S. B., & Touyz, S. W. (2012). Masculinity, femininity and male body image: A recipe for future research. *International Journal of Men's Health*, 11(3), 227–239.  
<https://doi.org/10.3149/jmh.1103.227>

Muth, J. L., & Cash, T. F. (1997). Body-image attitudes: What difference does gender make?

*Journal of Applied Social Psychology*, 27(16), 1438–1452.

<https://doi.org/10.1111/j.1559-1816.1997.tb01607.x>

Nelson, E. E., Leibenluft, E., McClure, E. B., & Pine, D. S. (2005). The social re-orientation of adolescence: A neuroscience perspective on the process and its relation to psychopathology. *Psychological Medicine*, 35(2), 163–174.

<https://doi.org/10.1017/s0033291704003915>

Norris, S. A., & Richter, L. M. (2005). Usefulness and reliability of Tanner pubertal self-rating to urban Black adolescents in South Africa. *Journal of Research on Adolescence*, 15(4), 609–624. <https://doi.org/10.1111/j.1532-7795.2005.00113.x>

O’Dea, J. A. (2012). Body image and self-esteem. In T. F. Cash (Ed.), *Encyclopedia of body image and human appearance* (pp. 141–147). Academic Press.

<https://doi.org/10.1016/B978-0-12-384925-0.00021-3>

O’Dea, J. A., & Abraham, S. (1999). Onset of disordered eating attitudes and behaviors in early adolescence. *Adolescence*, 34(136), 671–679.

Olivardia, R., Pope, H. G., Borowiecki, J. J., & Cohane, G. H. (2004). Biceps and body image: The relationship between muscularity and self-esteem, depression, and eating disorder symptoms. *Psychology of Men & Masculinity*, 5(2), 112–120.

<https://doi.org/10.1037/1524-9220.5.2.112>

Parks, C. A., & Hughes, T. L. (2007). Age differences in lesbian identity development and drinking. *Substance Use & Misuse*, 42(2–3), 361–380.

<https://doi.org/10.1080/10826080601142097>



- Peplau, L. A., Frederick, D. A., Yee, C., Maisel, N., Lever, J., & Ghavami, N. (2009). Body image satisfaction in heterosexual, gay, and lesbian adults. *Archives of Sexual Behavior*, 38(5), 713–725. <https://doi.org/10.1007/s10508-008-9378-1>
- Perrin, P. B., Sutter, M. E., Trujillo, M. A., Henry, R. S., & Pugh, M. (2020). The minority strengths model: Development and initial path analytic validation in racially/ethnically diverse LGBTQ individuals. *Journal of Clinical Psychology*, 76(1), 118–136. <https://doi.org/10.1002/jclp.22850>
- Petersen, A. C., Crockett, L., Richards, M., & Boxer, A. (1988). A self-report measure of pubertal status: Reliability, validity, and initial norms. *Journal of Youth and Adolescence*, 17(2), 117–133. <https://doi.org/10.1007/BF01537962>
- Pitman, G. E. (1999). Body image, compulsory heterosexuality, and internalized homophobia. *Journal of Lesbian Studies*, 3(4), 129–139. [https://doi.org/10.1300/J155v03n04\\_17](https://doi.org/10.1300/J155v03n04_17)
- Pope, H. G., Olivardia, R., Gruber, A., & Borowiecki, J. (1999). Evolving ideals of male body image as seen through action toys. *International Journal of Eating Disorders*, 26(1), 65–72. [https://doi.org/10.1002/\(SICI\)1098-108X\(199907\)26:1<65::AID-EAT8>3.0.CO;2-D](https://doi.org/10.1002/(SICI)1098-108X(199907)26:1<65::AID-EAT8>3.0.CO;2-D)
- Rasmussen, M. L. (2004). The problem of coming out. *Theory into Practice*, 43(2), 144–150.
- Rawana, J. S., McPhie, M. L., & Hassibi, B. (2016). Eating- and weight-related factors associated with depressive symptoms in emerging adulthood. *Eating Behaviors*, 22, 101–108. <https://doi.org/10.1016/j.eatbeh.2016.04.002>
- Rendina, H. J., Carter, J. A., Wahl, L., Millar, B. M., & Parsons, J. T. (2019). Trajectories of sexual identity development and psychological well-being for highly sexually active gay and bisexual men: A latent growth curve analysis. *Psychology of Sexual Orientation and Gender Diversity*, 6(1), 64–74. <https://doi.org/10.1037/sgd0000308>

- Ricciardelli, L. A., & McCabe, M. P. (2001). Children's body image concerns and eating disturbance: A review of the literature. *Clinical Psychology Review, 21*(3), 325–344. [https://doi.org/10.1016/S0272-7358\(99\)00051-3](https://doi.org/10.1016/S0272-7358(99)00051-3)
- Ricciardelli, L. A., McCabe, M. P., & Banfield, S. (2000). Body image and body change methods in adolescent boys: Role of parents, friends and the media. *Journal of Psychosomatic Research, 49*(3), 189–197. [https://doi.org/10.1016/S0022-3999\(00\)00159-8](https://doi.org/10.1016/S0022-3999(00)00159-8)
- Rich, A. (1980). Compulsory heterosexuality and lesbian experience. *Signs, 5*(4), 631–660. <https://doi.org/10.1086/493756>.
- Rigby, K. (2000). Effects of peer victimization in schools and perceived social support on adolescent well-being. *Journal of Adolescence, 23*(1), 57–68. <https://doi.org/10.1006/jado.1999.0289>
- Robertson, M., Duffy, F., Newman, E., Prieto Bravo, C., Ates, H. H., & Sharpe, H. (2021). Exploring changes in body image, eating and exercise during the COVID-19 lockdown: A UK survey. *Appetite, 159*, 105062. <https://doi.org/10.1016/j.appet.2020.105062>
- Röder, M., Barkmann, C., Richter-Appelt, H., Schulte-Markwort, M., Ravens-Sieberer, U., & Becker, I. (2018). Health-related quality of life in transgender adolescents: Associations with body image and emotional and behavioral problems. *International Journal of Transgenderism, 19*(1), 78–91. <https://doi.org/10.1080/15532739.2018.1425649>
- Rodgers, R. F., Paxton, S. J., & McLean, S. A. (2014). A biopsychosocial model of body image concerns and disordered eating in early adolescent girls. *Journal of Youth and Adolescence, 43*(5), 814–823. <https://doi.org/10.1007/s10964-013-0013-7>

- Romito, M., Salk, R. H., Roberts, S. R., Thoma, B. C., Levine, M. D., & Choukas-Bradley, S. (2021). Exploring transgender adolescents' body image concerns and disordered eating: Semi-structured interviews with nine gender minority youth. *Body Image, 37*, 50–62. <https://doi.org/10.1016/j.bodyim.2021.01.008>
- Rosario, M., & Schrimshaw, E. W. (2013). The sexual identity development and health of lesbian, gay, and bisexual adolescents: An ecological perspective. In *Handbook of psychology and sexual orientation* (pp. 87–101). Oxford University Press.
- Rotheram-Borus, M. J., & Langabeer, K. A. (2001). Developmental trajectories of gay, lesbian, and bisexual youths. In A. R. D'Augelli & C. J. Patterson (Eds.), *Lesbian, gay, and bisexual identities and youth: Psychological perspectives* (pp. 97–128). Oxford University Press.
- Russell, S. T., Toomey, R. B., Ryan, C., & Diaz, R. M. (2014). Being out at school: The implications for school victimization and young adult adjustment. *American Journal of Orthopsychiatry, 84*(6), 635–643. <https://doi.org/10.1037/ort0000037>
- Sahuc, D. B. M. (2020). *The impact of COVID-19 on transgender body image and mental health: A qualitative perspective*. [Master's thesis, University of New Orleans]. University of New Orleans Theses and Dissertations. <https://scholarworks.uno.edu/td/2803>
- Salerno, J. P., Devadas, J., Pease, M., Nketia, B., & Fish, J. N. (2020). Sexual and gender minority stress amid the COVID-19 pandemic: Implications for LGBTQ young persons' mental health and well-being. *Public Health Reports, 135*(6), 721–727. <https://doi.org/10.1177/0033354920954511>

- Saltzman, L. Y., Hansel, T. C., & Bordnick, P. S. (2020). Loneliness, isolation, and social support factors in post-COVID-19 mental health. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(S1), S55. <https://doi.org/10.1037/tra0000703>
- Savin-Williams, R. C. (1998). “—*And then I became gay*”: *Young men’s stories*. Psychology Press.
- Schroeder, K. M., & Liben, L. S. (2021). Felt pressure to conform to cultural gender roles: correlates and consequences. *Sex Roles*, *84*, 125–138. <https://doi.org/10.1007/s11199-020-01155-9>
- Shapiro, S., Newcomb, M., & Burns Loeb, T. (1997). Fear of fat, disregulated-restrained eating, and body-esteem: Prevalence and gender differences among eight- to ten-year-old children. *Journal of Clinical Child Psychology*, *26*(4), 358–365. [https://doi.org/10.1207/s15374424jccp2604\\_4](https://doi.org/10.1207/s15374424jccp2604_4)
- Siegel, J. M., Yancey, A. K., Aneshensel, C. S., & Schuler, R. (1999). Body image, perceived pubertal timing, and adolescent mental health. *Journal of Adolescent Health*, *25*(2), 155–165. [https://doi.org/10.1016/S1054-139X\(98\)00160-8](https://doi.org/10.1016/S1054-139X(98)00160-8)
- Simon, J., Helter, T. M., White, R. G., van der Boor, C., & Łaszewska, A. (2021). Impacts of the Covid-19 lockdown and relevant vulnerabilities on capability well-being, mental health and social support: An Austrian survey study. *BMC Public Health*, *21*(1), 314. <https://doi.org/10.1186/s12889-021-10351-5>
- Smith, M. L., Telford, E., & Tree, J. J. (2019). Body image and sexual orientation: The experiences of lesbian and bisexual women. *Journal of Health Psychology*, *24*(9), 1178–1190. <https://doi.org/10.1177/1359105317694486>

- Smolak, L. (2004). Body image in children and adolescents: Where do we go from here? *Body Image, 1*(1), 15–28. [https://doi.org/10.1016/S1740-1445\(03\)00008-1](https://doi.org/10.1016/S1740-1445(03)00008-1)
- Smolak, L. (2006). Body image. In *Handbook of girls' and women's psychological health: Gender and well-being across the lifespan* (pp. 69–76). Oxford University Press.
- Snapp, S. D., Watson, R. J., Russell, S. T., Diaz, R. M., & Ryan, C. (2015). Social support networks for LGBT young adults: Low cost strategies for positive adjustment. *Family Relations, 64*(3), 420–430. <https://doi.org/10.1111/fare.12124>
- Snyder, R., & Hasbrouck, L. (1996). Feminist identity, gender traits, and symptoms of disturbed eating among college women. *Psychology of Women Quarterly, 20*(4), 593–598. <https://doi.org/10.1111/j.1471-6402.1996.tb00324.x>
- Sontag, L. M., Graber, J. A., & Clemans, K. H. (2011). The role of peer stress and pubertal timing on symptoms of psychopathology during early adolescence. *Journal of Youth and Adolescence, 40*(10), 1371–1382. <https://doi.org/10.1007/s10964-010-9620-8>
- Steele, S. M., Belvy, L., Veldhuis, C. B., Martin, K., Nisi, R., & Hughes, T. L. (2019). Femininity, masculinity, and body image in a community-based sample of lesbian and bisexual women. *Women & Health, 59*(8), 829–844. <https://doi.org/10.1080/03630242.2019.1567645>
- Steinfeldt, J. A., Gilchrist, G. A., Halterman, A. W., Gomory, A., & Steinfeldt, M. C. (2011). Drive for muscularity and conformity to masculine norms among college football players. *Psychology of Men & Masculinity, 12*(4), 324–338. <https://doi.org/10.1037/a0024839>
- Stewart, A. J., & Healy, J. M. (1989). Linking individual development and social changes. *American Psychologist, 44*(1), 30–42.

- Stice, E., & Bearman, S. K. (2001). Body-image and eating disturbances prospectively predict increases in depressive symptoms in adolescent girls: a growth-curve analysis. *Developmental Psychology, 37*(5), 597–607.
- Stice, E., Presnell, K., & Bearman, S. K. (2001). Relation of early menarche to depression, eating disorders, substance abuse, and comorbid psychopathology among adolescent girls. *Developmental Psychology, 37*(5), 608–619. <https://doi.org/10.1037//0012-1649.37.5.608>
- Stice, E., & Whitenton, K. (2002). Risk factors for body dissatisfaction in adolescent girls: A longitudinal investigation. *Developmental Psychology, 38*(5), 669–678. <https://doi.org/10.1037/0012-1649.38.5.669>
- Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin, 128*(5), 825–848. <https://doi.org/10.1037/0033-2909.128.5.825>
- Stice, E. (2003). Puberty and body image. In C. Hayward (Author), *Gender differences at puberty* (pp. 61-76). Cambridge, UK: Cambridge University Press.
- Strain, J. D., & Shuff, I. M. (2010). Psychological well-being and level of outness in a population of male-to-female transsexual women attending a national transgender conference. *International Journal of Transgenderism, 12*(4), 230–240. <https://doi.org/10.1080/15532739.2010.544231>
- Striegel-Moore, R. H., & Franko, D. L. (2008). Should binge eating disorder be included in the DSM-V? A critical review of the state of the evidence. *Annual Review of Clinical Psychology, 4*(1), 305–324. <https://doi.org/10.1146/annurev.clinpsy.4.022007.141149>
- Striegel-Moore, R. H., Tucker, N., & Hsu, J. (1990). Body image dissatisfaction and disordered eating in lesbian college students. *International Journal of Eating Disorders, 9*(5), 493–

500. [https://doi.org/10.1002/1098-108X\(199009\)9:5<493::AID-EAT2260090504>3.0.CO;2-C](https://doi.org/10.1002/1098-108X(199009)9:5<493::AID-EAT2260090504>3.0.CO;2-C)

Suleiman, A. B., & Harden, K. P. (2016). The importance of sexual and romantic development in understanding the developmental neuroscience of adolescence. *Developmental Cognitive Neuroscience, 17*, 145–147. <https://doi.org/10.1016/j.dcn.2015.12.007>

Swami, V., Horne, G., & Furnham, A. (2021). COVID-19-related stress and anxiety are associated with negative body image in adults from the United Kingdom. *Personality and Individual Differences, 170*, 110426. <https://doi.org/10.1016/j.paid.2020.110426>

Swami, V., & Tovée, M. J. (2006). The influence of body mass index on the physical attractiveness preferences of feminist and nonfeminist heterosexual women and lesbians. *Psychology of Women Quarterly, 30*(3), 252–257. <https://doi.org/10.1111/j.1471-6402.2006.00293.x>

Tabaac, A., Perrin, P. B., & Benotsch, E. G. (2018). Discrimination, mental health, and body image among transgender and gender-non-binary individuals: Constructing a multiple mediational path model. *Journal of Gay & Lesbian Social Services, 30*(1), 1–16. <https://doi.org/10.1080/10538720.2017.1408514>

Teti, M., Bauerband, L. A., Rolbiecki, A., & Young, C. (2020). Physical activity and body image: Intertwined health priorities identified by transmasculine young people in a non-metropolitan area. *International Journal of Transgender Health, 21*(2), 209–219. <https://doi.org/10.1080/26895269.2020.1719950>

Tiggemann, M. (2004). Body image across the adult life span: Stability and change. *Body Image, 1*(1), 29–41. [https://doi.org/10.1016/S1740-1445\(03\)00002-0](https://doi.org/10.1016/S1740-1445(03)00002-0)

- Totenhagen, C. J., Randall, A. K., & Lloyd, K. (2018). Stress and relationship functioning in same-sex couples: The vulnerabilities of internalized homophobia and outness. *Family Relations*, 67(3), 399–413. <https://doi.org/10.1111/fare.12311>
- Troiden, R. R. (1979). Becoming homosexual: A model of gay identity acquisition. *Psychiatry*, 42(4), 362–373. <https://doi.org/10.1080/00332747.1979.11024039>
- Troiden, R. R. (1989). The formation of homosexual identities. *Journal of Homosexuality*, 17(1–2), 43–74. [https://doi.org/10.1300/J082v17n01\\_02](https://doi.org/10.1300/J082v17n01_02)
- Trott, M., Johnstone, J., Pardhan, S., Barnett, Y., & Smith, L. (2021). Changes in body dysmorphic disorder, eating disorder, and exercise addiction symptomology during the COVID-19 pandemic: A longitudinal study of 319 health club users. *Psychiatry Research*, 298, 113831. <https://doi.org/10.1016/j.psychres.2021.113831>
- Tylka, T. L., & Wood-Barcalow, N. L. (2015a). The Body Appreciation Scale-2: Item refinement and psychometric evaluation. *Body Image*, 12, 53–67. <https://doi.org/10.1016/j.bodyim.2014.09.006>
- Tylka, T. L., & Wood-Barcalow, N. L. (2015b). What is and what is not positive body image? Conceptual foundations and construct definition. *Body Image*, 14, 118–129. <https://doi.org/10.1016/j.bodyim.2015.04.001>
- Ullsperger, J. M., & Nikolas, M. A. (2017). A meta-analytic review of the association between pubertal timing and psychopathology in adolescence: Are there sex differences in risk? *Psychological Bulletin*, 143(9), 903–938. <https://doi.org/10.1037/bul0000106>
- Valiente, C., Contreras, A., Peinado, V., Trucharte, A., Martínez, A. P., & Vázquez, C. (2021). Psychological adjustment in Spain during the COVID-19 pandemic: Positive and



- negative mental health outcomes in the general population. *The Spanish Journal of Psychology*, 24. <https://doi.org/10.1017/SJP.2021.7>
- Vance, S. R., Ehrensaft, D., & Rosenthal, S. M. (2014). Psychological and medical care of gender nonconforming youth. *Pediatrics*, 134(6), 1184–1192. <https://doi.org/10.1542/peds.2014-0772>
- Vocks, S., Stahn, C., Loenser, K., & Legenbauer, T. (2009). Eating and body image disturbances in male-to-female and female-to-male transsexuals. *Archives of Sexual Behavior*, 38(3), 364–377. <https://doi.org/10.1007/s10508-008-9424-z>
- Wardle, J., Haase, A. M., & Steptoe, A. (2006). Body image and weight control in young adults: International comparisons in university students from 22 countries. *International Journal of Obesity*, 30(4), 644–651. <https://doi.org/10.1038/sj.ijo.0803050>
- Watson, L. B. (2019). Gender identity and expression in LGBTQ+ communities: Implications for the practice of psychology. *Psychology of Women Quarterly*, 43(3), 298–302. <https://doi.org/10.1177/0361684319846498>
- Watson, R. J., Grossman, A. H., & Russell, S. T. (2019). Sources of social support and mental health among LGB youth. *Youth & Society*, 51(1), 30–48. <https://doi.org/10.1177/0044118X16660110>
- Wertheim, E., & Paxton, S. (2011). Body image development in adolescent girls. In *Body image: A handbook of science, practice, and prevention* (2nd ed., pp. 76–84). Guilford Press.
- Wichstrøm, L. (1999). The emergence of gender difference in depressed mood during adolescence: the role of intensified gender socialization. *Developmental Psychology*, 35(1), 232–245.

- Wilkerson, J. M., Schick, V. R., Romijnders, K. A., Bauldry, J., Butame, S. A., & Montrose Center. (2017). Social support, depression, self-esteem, and coping among LGBTQ adolescents participating in Hatch Youth. *Health Promotion Practice, 18*(3), 358–365. <https://doi.org/10.1177/1524839916654461>
- Williamson, I. (1999). Why are gay men a high risk group for eating disturbance? *European Eating Disorders Review, 7*(1), 1–4. [https://doi.org/10.1002/\(SICI\)1099-0968\(199903\)7:1<1::AID-ERV275>3.0.CO;2-U](https://doi.org/10.1002/(SICI)1099-0968(199903)7:1<1::AID-ERV275>3.0.CO;2-U)
- Yayan, E. H., & Çelebioğlu, A. (2018). Effect of an obesogenic environment and health behaviour-related social support on body mass index and body image of adolescents. *Global Health Promotion, 25*(3), 33–42. <https://doi.org/10.1177/1757975916675125>
- Yoshino, K. (2015). A new birth of freedom?: Obergefell v. Hodges. *Harvard Law Review, 129*(1), 147–179.
- Orne, J. (2011). ‘You will always have to “out” yourself’: Reconsidering coming out through strategic outness. *Sexualities, 14*(6), 681–703. <https://doi.org/10.1177/1363460711420462>
- Zaikman, Y., Stimatze, T., & Zeiber, J. A. (2020). Women’s and men’s evaluations of lesbians and gay men and their levels of outness. *Sex Roles, 83*(3–4), 211–225. <https://doi.org/10.1007/s11199-019-01107-y>
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*(1), 30–41. [https://doi.org/10.1207/s15327752jpa5201\\_2](https://doi.org/10.1207/s15327752jpa5201_2)

Tables

**Table 1**

*Participant Characteristics by Gender/Sex and Wave*

	Wave	Young women		Young men	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age (years)	II	16.34	1.57	16.72	1.57
	III	21.57	1.63	21.99	1.64
	IV	28.34	1.58	28.71	1.56
Body image indicators					
Healthy perceived weight	III	2.31	.67	2.50	.58
	IV	2.11	.72	2.37	.65
Perceived attractiveness	III	3.06	.74	3.10	.78
	IV	2.83	.74	2.89	.76
Perceived social support	II	.05	.68	-.10	.77
Pubertal timing indicators					
Relative physical development	II	3.33	1.15	3.17	1.19
Age at menarche	II	12.21	1.23	—	—
Breast size change	II	3.42	1.12	—	—
Facial hair	II	—	—	1.80	.85
Voice change	II	—	—	3.33	1.37

*Note.* N = 892 (65.36% young women) at each wave

**Table 2**

*Results of t-tests Comparing Young Women and Young Men on Key Variables*

Logistic parameter	Young women		Young men		t	df	p
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Healthy perceived weight (Wave III)	2.33	.69	2.52	.56	3.73	586	.001***
Healthy perceived weight (Wave IV)	2.11	.72	2.37	.65	5.36	890	.001***
Perceived attractiveness (Wave III)	3.08	.72	3.10	.78	.26	584	NS
Perceived attractiveness (Wave IV)	2.83	.74	2.89	.76	1.17	889	NS
Perceived social support (Wave II) <sup>a</sup>	.02	.69	-.11	.78	-2.11	601	.04*
Perceived social support (Wave II) <sup>b</sup>	.05	.68	-.10	.77	-2.79	566	.006**

*Note.* \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p \leq .001$

<sup>a</sup> This *t*-test was run on the Wave III sample

<sup>b</sup> This separate *t*-test is reported because it was re-run on the Wave IV sample

**Table 3a**

*Intercorrelations for Young Women*

Variables	1	2	3	4	5	6	7	8
1. Healthy perceived weight (Wave III)	—							
2. Healthy perceived weight (Wave IV)	.54**	—						
3. Perceived attractiveness (Wave III)	.20**	.14**	—					
4. Perceived attractiveness (Wave IV)	.17**	.22**	.48**	—				
5. Perceived social support <sup>a</sup>	.07	.00	.08	.06	—			
6. Relative physical development <sup>a</sup>	-.08	-.03	.05	.07	.06	—		
7. Early menarche <sup>a</sup>	-.22**	-.18**	-.05	-.11*	.04	.28**	—	
8. Breast size change <sup>a</sup>	-.15**	-.15**	.07	.03	.03	.39**	.10*	—

*Note.* N range from 511 to 583 due to differential missing data; \*  $p < .05$ ; \*\*  $p < .01$

<sup>a</sup> = all of these measures are from Wave II only

**Table 3b**

*Intercorrelations for Young Men*

Variables	1	2	3	4	5	6	7	8
1. Healthy perceived weight (Wave III)	—							
2. Healthy perceived weight (Wave IV)	.28**	—						
3. Perceived attractiveness (Wave III)	.09	.00	—					
4. Perceived attractiveness (Wave IV)	.08	.11*	.35**	—				
5. Perceived social support <sup>a</sup>	.11	-.05	.14*	.16**	—			
6. Relative physical development <sup>a</sup>	-.10	-.04	.01	.03	.07	—		
7. Facial hair <sup>a</sup>	.01	-.05	.02	-.13*	-.03	.36**	—	
8. Voice change <sup>a</sup>	-.05	.03	-.04	-.03	.07	.40**	.20**	—

*Note.* N range from 293 to 309 due to differential missing data; \*  $p \leq .05$ ; \*\*  $p \leq .01$

<sup>a</sup> = all of these measures are from Wave II only

**Table 4a**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Young Women*

Predictors	Healthy perceived weight (Wave III) <sup>a</sup>				Healthy perceived weight (Wave IV) <sup>b</sup>				Perceived attractiveness (Wave III) <sup>c</sup>				Perceived attractiveness (Wave IV) <sup>d</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Perceived social support	.03	.06	.03	NS	.00	.05	.00	NS	.12	.06	.11	.05	.09	.05	.08	.08 <sup>t</sup>
Relative physical development	-.01	.05	-.02	NS	.04	.04	.06	NS	.04	.05	.06	NS	.09	.04	.12	.02
Early menarche	-.16	.04	-.23	.00	-.13	.03	-.18	.00	-.04	.04	-.06	NS	-.11	.03	-.14	.00
Breast size change	-.12	.04	-.16	.01	-.14	.03	-.18	.00	-.05	.05	-.06	NS	-.01	.04	-.01	NS

*Notes.* N = 583; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the unstandardized

regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value; <sup>t</sup> = .05 < *p* < .10

<sup>a</sup> R = .20, df = 239, *p* < .05

<sup>b</sup> R = .10, df = 301, *p* ≤ .01

<sup>c</sup> R = .20, df = 230, *p* < .05

<sup>d</sup> R = .21, df = 301, *p* < .05

**Table 4b**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Young Men*

Predictors	Healthy perceived weight (Wave III) <sup>a</sup>				Healthy perceived weight (Wave IV) <sup>b</sup>				Perceived attractiveness (Wave III) <sup>c</sup>				Perceived attractiveness (Wave IV) <sup>d</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Perceived social support	.10	.05	.13	.04	-.05	.05	-.06	NS	.15	.07	.15	.02	.15	.06	.15	.01
Relative physical development	-.10	.04	-.17	.02	-.04	.04	-.06	NS	-.02	.06	-.02	NS	.06	.05	.08	NS
Facial hair	.04	.04	.07	NS	-.03	.04	-.04	NS	.07	.06	.09	NS	-.11	.05	-.14	.02
Voice change	.02	.04	.03	NS	.05	.04	.07	NS	-.06	.06	-.08	NS	-.03	.05	-.04	NS

*Notes.* N = 309; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the unstandardized

regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value

<sup>a</sup>R = .31, df = 307, p = .1

<sup>b</sup>R = .25, df = 517, p = .1

<sup>c</sup>R = .14, df = 301, p < .05

<sup>d</sup>R = .17, df = 517, p < .05



**Table 5**

*Participant Characteristics by Group*

	Cisgender women		Transgender women		Cisgender men		Transgender men		Gender nonconforming individuals	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age (years)	22.42	3.32	21.52	2.89	21.88	3.33	21.29	2.81	21.77	3.33
Body image indicators										
Body appreciation	3.32	.85	2.54	.78	3.00	.93	2.63	.94	2.95	.85
Drive for muscularity	2.06	.74	1.45	.53	2.41	.97	2.83	.81	2.33	.78
Masculinity	4.34	.86	3.83	.73	4.29	.82	4.14	.62	4.16	.91
Femininity	4.69	.67	4.88	.70	4.55	.60	4.33	.63	4.45	.69
Current outness	3.32	1.48	3.57	1.40	3.20	1.57	3.24	1.66	3.66	1.46
Previous perceived social support	4.31	1.40	3.88	1.31	3.96	1.53	4.41	1.07	3.74	1.18
Internal realizations milestones (years)	15.29	3.64	—	—	14.77	2.98	—	—	—	—
Disclosure milestones (years)	18.13	3.16	—	—	17.51	2.53	—	—	—	—
Romantic and sexual experiences milestones (years)	16.94	2.51	—	—	16.98	3.03	—	—	—	—
Relative pubertal timing	2.77	.92	—	—	3.07	.78	—	—	—	—
Age at menarche (years)	12.02	1.58	—	—	—	—	—	—	—	—
Age at first wet dream (years)	—	—	—	—	13.23	2.17	—	—	—	—

*Note.* N range due to differential missing data: 128-156 for cis women, 50-59 for trans women, 99-127 for cis men, 21-24 for trans men, 82-97

for gender nonconforming individuals

**Table 6**

*One-Way Analysis of Variance on Dependent Variables*

	Cisgender women		Transgender women		Cisgender men		Transgender men		Gender nonconforming individuals		<i>F</i> (4, 459)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Body appreciation	3.32 <sup>a</sup>	.85	2.54 <sup>b</sup>	.78	3.00 <sup>c</sup>	.93	2.63 <sup>bc</sup>	.94	2.95 <sup>c</sup>	.85	10.52***
Drive for muscularity	2.06 <sup>a</sup>	.74	1.45 <sup>b</sup>	.53	2.41 <sup>cd</sup>	.97	2.83 <sup>c</sup>	.81	2.33 <sup>ad</sup>	.78	20.67***

*Note.* Means that share the same superscript are not significantly different from each other; \*\*\*  $p < .001$

**Table 7a**

*Intercorrelations for Cisgender Women*

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Body appreciation	—										
2. Drive for muscularity	.12	—									
3. Masculinity	.18*	.20*	—								
4. Femininity	.10	-.01	-.17*	—							
5. Current outness	.12	.12	.10	-.04	—						
6. Previous perceived social support	.32**	-.06	-.03	.20*	.22*	—					
7. Internal realizations milestones	-.01	-.13	-.07	.19*	-.16*	.18*	—				
8. Disclosure milestones	-.15	-.20*	-.01	.13	-.20*	.07	.73**	—			
9. Romantic and sexual experiences milestones	.03	.27**	.07	.05	.18*	-.08	.17	.20*	—		
10. Relative pubertal timing	.17*	.15	.07	-.02	.08	.14	-.03	-.09	-.05	—	
11. Age at menarche	.11	.06	.13	-.06	.07	.04	.06	-.01	.07	.61**	—

*Note.* \*  $p \leq .05$ ; \*\*  $p \leq .01$

**Table 7b**

*Intercorrelations for Transgender Women*

Variables	1	2	3	4	5	6
1. Body appreciation	—					
2. Drive for muscularity	.11	—				
3. Masculinity	.49**	-.08	—			
4. Femininity	.12	-.05	.07	—		
5. Current outness	.39**	.02	.23	.01	—	
6. Previous perceived social support	.26	-.11	.10	-.09	.33*	—

*Note.* \*  $p < .05$ ; \*\*  $p < .01$

**Table 7c**

*Intercorrelations for Cisgender Men*

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Body appreciation	—										
2. Drive for muscularity	-.09	—									
3. Masculinity	.38**	.27**	—								
4. Femininity	.16	.06	.08	—							
5. Current outness	.24**	.00	.27**	.17	—						
6. Previous perceived social support	.33**	.00	.23*	.22*	.32**	—					
7. Internal realizations milestones	.02	-.14	-.11	-.08	-.33**	.05	—				
8. Disclosure milestones	-.11	-.13	-.05	-.07	-.24**	-.07	.63**	—			
9. Romantic and sexual experiences milestones	-.21*	.01	-.12	-.08	-.07	-.17	.26*	.41**	—		
10. Relative pubertal timing	-.07	-.06	-.19*	-.13	-.14	.04	.16	.10	.04	—	
11. Age at first wet dream	-.03	-.05	.09	-.11	-.01	.08	.23	.05	.05	.35**	—

*Note.* \*  $p \leq .05$ ; \*\*  $p \leq .01$

**Table 7d**  
*Intercorrelations for Transgender Men*

Variables	1	2	3	4	5	6
1. Body appreciation	—					
2. Drive for muscularity	-.29	—				
3. Masculinity	.15	.00	—			
4. Femininity	.09	-.06	-.10	—		
5. Current outness	.58**	-.39	.14	.08	—	
6. Previous perceived social support	.41	.07	-.02	.32	.58**	—

*Note.* \*\*  $p \leq .01$

**Table 7e**

*Intercorrelations for Gender Nonconforming Individuals*

Variables	1	2	3	4	5	6
1. Body appreciation	—					
2. Drive for muscularity	.38**	—				
3. Masculinity	.40**	.27**	—			
4. Femininity	.11	.10	-.07	—		
5. Current outness	.14	.16	.26**	.06	—	
6. Previous perceived social support	.25*	.20	.15	.09	.03	—

*Note.* \*  $p < .05$ ; \*\*  $p \leq .01$

**Table 8a**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Cisgender Women*

Predictors	Body appreciation <sup>a</sup>				Drive for muscularity <sup>b</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Masculinity	.22	.10	.21	.03	.18	.08	.19	.04
Femininity	.19	.13	.14	NS	.05	.11	.04	NS
Current outness	.00	.06	.00	NS	-.03	.05	-.05	NS
Previous perceived social support	.16	.06	.25	.01	.03	.05	.05	NS
Internal realizations milestones	.02	.03	.10	NS	.02	.03	.09	NS
Disclosure milestones	-.07	.04	-.27	.05	-.08	.03	-.34	.01
Romantic and sexual experiences milestones	.02	.03	.04	NS	.10	.03	.34	.00
Relative pubertal timing	.06	.08	.07	NS	.11	.07	.13	NS

*Notes.* N = 165; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the unstandardized regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value

<sup>a</sup> R = .39, df = 118, p = .15

<sup>b</sup> R = .44, df = 118, p = .19



**Table 8b**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Transgender Women*

Predictors	Body appreciation <sup>a</sup>				Drive for muscularity <sup>b</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Masculinity	.39	.13	.36	.01	-.06	.11	-.08	NS
Femininity	.16	.13	.15	NS	-.04	.11	-.06	NS
Current outness	.13	.07	.25	.06 <sup>t</sup>	.04	.06	.10	NS
Previous perceived social support	.09	.07	.16	NS	-.06	.06	-.14	NS

*Notes.* N = 62; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the

unstandardized regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value; <sup>t</sup> = .05 < *p* < .10

<sup>a</sup> R = .58, df = 54, *p* = .34

<sup>b</sup> R = .17, df = 54, *p* < .05

**Table 8c**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Cisgender Men*

Predictors	Body appreciation <sup>a</sup>				Drive for muscularity <sup>b</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Masculinity	.46	.15	.37	.00	.19	.15	.16	NS
Femininity	.08	.18	.05	NS	.22	.19	.14	NS
Current outness	.12	.07	.20	.09 <sup>t</sup>	-.09	.07	-.15	NS
Previous perceived social support	.04	.07	.06	NS	.03	.08	.05	NS
Internal realizations milestones	.07	.04	.23	.09 <sup>t</sup>	-.03	.04	-.09	NS
Disclosure milestones	-.03	.05	-.08	NS	-.03	.05	-.08	NS
Romantic and sexual experiences milestones	-.03	.03	-.08	NS	.03	.04	.11	NS
Relative pubertal timing	.12	.13	.10	NS	-.03	.13	-.02	NS

*Notes.* N = 132; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the

unstandardized regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value; <sup>t</sup> = .05 < *p* < .10

<sup>a</sup> R = .54, df = 79, *p* = .29

<sup>b</sup> R = .29, df = 79, *p* = .08

**Table 8d**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Gender Nonconforming Individuals*

Predictors	Body appreciation <sup>a</sup>				Drive for muscularity <sup>b</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Masculinity	.31	.10	.32	.00	.17	.10	.19	.09 <sup>t</sup>
Femininity	.12	.13	.10	NS	.05	.12	.05	NS
Current outness	.03	.06	.05	NS	.07	.06	.13	NS
Previous perceived social support	.11	.06	.20	.06 <sup>t</sup>	.09	.06	.16	NS

*Notes.* N = 100; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the

unstandardized regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value; <sup>t</sup> = .05 < *p* < .10

<sup>a</sup> R = .43, df = 85, *p* = .18

<sup>b</sup> R = .33, df = 85, *p* = .11

**Table 9**

*One-Way Analysis of Variance on Predictor Variables*

	Cisgender women		Transgender women		Cisgender men		Transgender men		Gender nonconforming individuals		<i>F</i> (4, 459)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Masculinity	4.34 <sup>a</sup>	.86	3.83 <sup>b</sup>	.73	4.29 <sup>a</sup>	.82	4.14 <sup>ab</sup>	.62	4.16 <sup>ab</sup>	.91	4.32 <sup>**</sup>
Femininity	4.69 <sup>ab</sup>	.67	4.88 <sup>b</sup>	.70	4.55 <sup>ac</sup>	.60	4.33 <sup>ac</sup>	.63	4.45 <sup>c</sup>	.69	5.93 <sup>***</sup>
Current outness	3.32	1.48	3.57	1.40	3.20	1.57	3.24	1.66	3.66	1.46	1.63 (NS)
Previous perceived social support	4.31 <sup>a</sup>	1.40	3.88 <sup>ab</sup>	1.31	3.96 <sup>ab</sup>	1.53	4.41 <sup>ab</sup>	1.07	3.74 <sup>b</sup>	1.18	2.87 <sup>*</sup>

*Note.* Means that share the same superscript are not significantly different from each other; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; NS = not

significant

**Table 10a**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Women (Cis and Trans)*

Predictors	Body appreciation <sup>a</sup>				Drive for muscularity <sup>b</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Masculinity	.29	.07	.28	.00	.20	.06	.23	.00
Femininity	.10	.08	.07	NS	.00	.08	.00	NS
Current outness	.02	.04	.04	NS	.02	.04	.04	NS
Previous perceived social support	.20	.04	.31	.00	-.02	.04	-.03	NS

*Notes.* N = 227; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the

unstandardized regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value

<sup>a</sup> R = .43, df = 204, p = .19

<sup>b</sup> R = .24, df = 204, p = .06

**Table 10b**

*Summary of Hierarchical Regression Analysis for Variables Predicting Body Image Indicators for Men (Cis and Trans)*

Predictors	Body appreciation <sup>a</sup>				Drive for muscularity <sup>b</sup>			
	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Masculinity	.26	.10	.22	.01	.25	.11	.20	.03
Femininity	.22	.13	.14	.10 <sup>t</sup>	.02	.14	.01	NS
Current outness	.11	.05	.20	.03	-.09	.06	-.15	NS
Previous perceived social support	.11	.05	.18	.04	.02	.06	.03	NS

*Notes.* N = 157; NS = not significant; *B* = unstandardized regression coefficient; *SE* = standard error of the

unstandardized regression coefficient;  $\beta$  = standardized regression coefficient; *p* = significance value; <sup>t</sup> = .05 < *p* ≤ .10

<sup>a</sup> R = .47, df = 129, *p* = .22

<sup>b</sup> R = .23, df = 129, *p* ≤ .05