Chapter 10
Early Gender Development in Children and Links with Mental and Physical Health

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10.1 Introduction

In early childhood, gender is often center-stage in children's worlds. It is usually the first social category of which children become aware. Children learn that society generally divides the world into male and female, and they learn that society places them into one of these categories. Cognitive theories of gender development posit that this awareness of gender identity spurs children on to pay attention to what gender means and to form gender schemas (Martin, Ruble, & Szkrybalo, 2002). For instance, children quickly learn that "pink is for girls" and "blue is for boys." Further, once children gather and learn well-established gender stereotypes, and form their own gender stereotypes, cognitive theories of gender development posit that they are highly motivated to be "good" members of their gender group. For example, whereas a young girl might have liked all kinds of colors at age 2, by age 4, her whole wardrobe, right down to her socks, might now be pink (Halim et al., 2014).

It is important to note that not all girls eventually wear pink from head-to-toe. Indeed, there is much variability in the gender identification and gender-typing of children. Here, we define *gender identification* as a child's sense of self as a female or male (Zucker & Bradley, 1995). *Gender-typing* is a broader construct that includes gender identification, but also extends to children's concepts or beliefs, preferences, and behaviors that align with expectations of what is appropriate for each gender (Ruble, Martin, & Berenbaum, 2006). There is variability in the levels

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of gender-typing among children—some are very gender-traditional and some are non-gender-traditional. The aim of this chapter is to examine this variability in gender identification and gender-typing from early to middle childhood and to investigate whether this variability has implications for the mental and physical health of children. We will first discuss developmental trends in gender identification and gender-typing from early to middle childhood. Next, we will discuss psychological theories pertaining to how gender identity and gender-typing might relate to health outcomes. We will then summarize what empirical evidence exists that examines this link between gender and health. Finally, we will discuss future directions and practical implications. Throughout, we will focus on both normative and gender-variant child populations, with the caveat that there is much less known about gender-variant children.

10.2 Developmental Trends in Gender Identification and Gender-Typing

Gender identity, as with other social categories, has multiple dimensions (Ashmore, Deaux, & McLaughlin-Volpe, 2004; Halim & Ruble, 2010). From a developmental perspective, gender identity includes basic gender category knowledge and a sense that one belongs to a gender category (*I'm a girl/boy*) (Kohlberg, 1966). This understanding likely starts as early as 18 months of age and is usually achieved by 30 months of age (Campbell, Shirley, & Caygill, 2002; Zosuls et al., 2009). Gender identity also includes the understanding of *gender constancy,* the understanding that one's gender typically remains relatively permanent across time (a boy will become a man, a woman was a girl) and superficial transformations (boys can play with dolls and remain a boy, girls can wear pants and remain a girl) (Kohlberg, 1966; Slaby & Frey, 1975). In addition to these milestones, gender identity includes the dimensions of *centrality* or *importance* (how important and salient gender is to one's overall self-concept), *evaluation* or private *regard* for one's gender along a positive–negative valence (I am happy to be a girl/boy) (also related to the concept of *felt contentedness* with one's gender), and one's evaluations of how others regard one's gender (I think others regard girls/boys positively) (*public regard*) (Halim, Ruble, & Tamis-Lemonda, 2013). Egan and Perry's (2001) model of gender identity in children also includes the dimensions of *intergroup bias* (attitudes towards the other gender), *felt pressure* for gender conformity from others and from one's self, and *felt typicality* (self-perceptions of how similar one is to same-gender children across activities, personality, and in general). New work also suggests that it is important to examine not only children's perceived similarity to same-gender children, but also to examine children's perceived similarity to *other*-gender children (Martin, Andrews, England, Ruble, & Zosuls, 2016).

Gender-typing is a superordinate category to gender identity and also multidimensional in nature (Huston, 1983). It includes the ways in which children enact and think about gender, in line with social stereotypes. Psychologists have, in fact,

outlined a matrix of gender-typing with four constructs (concepts/beliefs, identity/
self-perceptions, preferences, behavioral enactment) crossed by six content areas
(biological/categorical sex, activities/interests, personal–social attributes, social
relationships, styles/symbols, values regarding gender) (see Ruble et al., 2006). For
example, if we only looked at concepts/beliefs crossed with the six content areas, a
girl could exhibit gender-typing by showing awareness of gender categories and
gender stereotypes, such as that people expect girls to play with dolls, be nice, and
wear pink, while learning that society often values males more than females. If we
look at other areas of the matrix, children can show gender-typing by not only
knowing and exhibiting stereotypes, but also through play behavior, mannerisms,
and attitudes towards girls and boys. Overall, gender-typing is a broad construct that
includes multiple ways that gender can be thought about and enacted in the every-
day life of a child.

10.2.1   Normative Population

10.2.1.1   Gender Identity

In early childhood, during the preschool and kindergarten years, children generally
feel very positive about their gender (Halim & Lindner, 2013). Most young children
report that being a girl or boy is "very important" to them and also tend to report
that they are "very happy" with being a girl or a boy (Ruble, Lurye, & Zosuls,
2007). Further, recent research suggests that this general love of their gender group
and gender identity generalizes across multiple ethnic groups. In our study of 246
African American, Chinese-, Mexican-, and Dominican-immigrant 5-year-old chil-
dren, about a third of the children chose the extreme end of the scale to express their
utmost positivity about their gender (Halim, Ruble, Tamis-LeMonda, Shrout, &
Amodio, 2012). Overall, 89 % of the children felt positively about their gender and
considered gender to be an important aspect of the self, and 11 % evaluated their
gender negatively and did not feel it was important. Our work also suggests that
there is change in gender identity during this early childhood period. In a longitudi-
nal study of the same children, boys increased in their private regard from age 4–5.
Girls already had high levels throughout ages 4 and 5 (Halim et al., 2016). A cross-
sectional study on White children from middle-class backgrounds found a
trajectory of gender identification that was consistent with our findings, with the
most positive regard and centrality at ages 4 and 5 compared to ages 3, 6, and 7
(Ruble, Taylor, et al., 2007).

   The trajectory of gender identification in middle childhood is not as clear, as
most research on this age group has focused more on connections between gender
identity and adjustment, and not on mean levels of gender identification in and of
itself (e.g., Egan & Perry, 2001). In addition, different measures and samples have
been used in studies examining children in early versus middle childhood, so it is
not possible to make strong conclusions about changes in gender identification

across these developmental periods. Acknowledging these limitations, however, we can observe some interesting trends. First, overall means of gender contentedness appear to be somewhat more tempered in their positivity among grade-school samples than in preschool/kindergarten samples (Carver, Yunger, & Perry, 2003; Corby, Hodges, & Perry, 2007). The subsequent trajectory of gender identification from Grades 3 or 4 through Grade 8 is murkier. One study showed higher levels of gender contentedness with age (Carver et al., 2003), but another study showed lower levels of gender contentedness with age (Egan & Perry, 2001). Future studies are needed to understand these different results. Both studies included similar children in terms of age groups, ethnic composition, geographic location, and household socioeconomic status. However, at least from early childhood to middle childhood, children appear to be more "rigid" in their gender identification earlier in development.

In middle childhood, there has also been evidence for gender differences in gender identification. Across three samples of White, Black, and Hispanic children, boys showed higher mean levels of gender contentedness in elementary school compared to girls (Carver et al., 2003; Corby et al., 2007; Egan & Perry, 2001). Mean levels indicated that boys were "sort of" to "very" content with being a boy. In contrast, depending on the age group and sample, girls were either between discontent and content with being a girl (Egan & Perry, 2001) or just "sort of" content with being a girl (Corby et al., 2007). Interestingly, this gender difference found in elementary school with boys being more content with their gender compared to girls has not been seen in preschool/kindergarten samples. We speculate, then, that, as a group, girls show more change in their gender identification compared with boys from early to middle childhood, decreasing more in how happy they are with being a girl. Girls' more lukewarm gender identification in middle childhood is an interesting contrast to their strong bias in intergroup attitudes (very positive attitudes towards girls as a group) over boys as a group (Leroux, 2008; Susskind & Hodges, 2007).

This proposed asymmetry in girls' and boys' trajectories of gender identification from early to middle childhood is reflected in the tomboy phenomenon. As many as one-third to two-thirds of girls self-identify as "sort of" or unequivocal tomboys in middle childhood, peaking between ages 7 and 9 (Ahlqvist, Halim, Greulich, Lurye, & Ruble, 2013; Martin & Dinella, 2012). Who are these tomboys? Tomboys tend to show higher levels of male-typed play and activity preferences, have more favorable attitudes towards boys, and play with more boys than do traditional girls (Ahlqvist et al., 2013; Bailey, Bechtold, & Berenbaum, 2002; Martin & Dinella, 2012). In contrast to the prevalence of tomboyhood for girls in elementary school, no equivalent label to "tomboy" is even available for boys. Any close approximation to tomboy (e.g., "sissy") usually has a derogatory connotation (Martin, 1990). Thus, generally, girls and boys do shift from gender rigidity to flexibility in gender identification (positively evaluating being a boy/girl and considering being a boy/girl to be important) as they approach middle childhood. However, girls' gender identification may approach flexibility even more compared to boys, as they have the option to self-identify as tomboys.

10.2.1.2   Gender-Typing

Children's gender-typing also shows a similar shift from gender "rigidity" to more flexibility from early to middle childhood. In early childhood, children show rigid beliefs about gender (e.g., believing that only girls should play with dolls; Signorella, Bigler, & Liben, 1993). At this time, they are also more censorious of gender norm violations (e.g., not wanting to be friends with a boy who wears nail polish; Ruble, Taylor, et al. 2007). Some scholars have even identified certain children as "gender police" (Martin & Ruble, 2010), individuals who track others' conformity to gender norms and remark when conformity is lacking. In addition to rigid beliefs, children also exhibit rigid gender-typed behavior and preferences at this time. It is common to see children engaging in high levels of gender-typed play (Halim et al., 2013). Longitudinal work has also shown that engagement in cross-gender-typed play (e.g., boys playing with kitchen sets) *decreases* across ages 3–5 (Halim et al., 2013). Children increasingly play with same-gender peers as well across this period (Maccoby & Jacklin, 1987; Martin, Fabes, Evans, & Wyman, 1999). Many also tend to increasingly wear gender-stereotypical dress, tending to increase in stereotypicality from ages 3–4, in particular (Halim et al., 2014). Our previous work has shown that about two-thirds of girls at age four tend to exhibit "appearance rigidity," which is when girls demand to wear highly gender-stereotypical clothing with as much frequency as parents will allow (Halim et al., 2014). For example, girls may want to wear pink from head-to-toe and insist on wearing a skirt or a dress every single day, even for physically active occasions or when the weather is cold. These girls also refuse to wear pants, sometimes coming to tears when parents insist on putting on some pants. Young girls from diverse ethnic backgrounds within the USA and from East Asian countries have exhibited this behavior, suggesting that the "pink frilly dress a phenomenon" is robust (Arredondo et al., 2014; Halim et al., 2014). We have discovered that boys, too, show their own kind of appearance rigidity, which was more prevalent than we had expected. Depending on ethnic background, anywhere from 27 to 56% of boys showed appearance rigidity during early childhood, often refusing to wear anything remotely hinting of femininity and preferring superhero decals and sports-themed clothing. Hence, overall, in both beliefs and behaviors, children tend to exhibit gender rigidity during early childhood.

In middle childhood, we start to see a shift towards more gender flexibility as compared to early childhood, especially among girls. In terms of gender beliefs, endorsement and belief in gender stereotypes tends to decrease from age 5 or 6 through age 12 (Blakemore, 2003; Trautner et al., 2005). In elementary school, children are more likely to believe that some girls and some boys do and should be allowed to play with both trucks and dolls. Friendliness towards children who violate gender norms also tends to be higher than in early childhood, at least according to children's self-report (Ahlqvist et al., 2013; Ruble, Taylor, et al., 2007). As children, and particularly girls, get older, their behaviors also tend to adhere less to strict gender norms (Ruble et al., 2006). Overall, research suggests that children, and especially girls, tend to show more gender flexibility in their beliefs and behaviors during middle childhood compared to early childhood.

Hence, across both gender identification and gender-typing more broadly, normative trajectories of gender development chart a course of rigidity during early childhood and more flexibility during middle childhood. There are likely several reasons for this shift from rigidity to flexibility. Cognitive theories of gender development posit that these changes occur in alignment with changes in children's awareness of and understanding about gender and changes in children's general social cognition (Halim, Ruble, & Amodio, 2011). For example, in early childhood, children may strongly identify with their gender as this identification is new and exciting (Tajfel & Turner, 2004). They may be rigid in their behaviors and their beliefs because they do not yet understand that, even if they violate gender norms, their gender remains the same (Kohlberg, 1966). They may keep others in line in following gender norms as well as they lack a sophisticated understanding of individual differences, or within-category variability, and subgrouping (e.g., some girls can be nice and sweet, other girls are not). In middle childhood, their understanding of gender has advanced and their social cognitive skills have grown, possibly contributing to more flexibility. There is some empirical support for these theories (see Martin et al., 2002), but researchers are still gathering more direct evidence for these claims.

10.2.2   Gender-Variant Population

Just as the normative population shows variance in gender identification and gender-typing, gender variation exists within the non-normative population (Martin & Dinella, 2012). Some children might show discontent with their gender; others might question their sexual orientation at some point. In more extreme cases, some children identify outside of the pervasive and persistent historical binary gender categories of "male" and "female," which allow little room for fluctuation. These children are often referred to clinicians and are seen as experiencing *gender dysphoria*. For the purposes of this chapter, we thus define "non-normative" to include those children who may be referred to a clinician based on gender issues, children who may question their heterosexuality, and the small minority of children who express gender attitudes, beliefs, and behaviors that are counter to what the majority of children tend to express. Because this population covers many different types of individuals, it is important to note that discussing the diverse experiences of gender-variant children is challenging.

Before we discuss the developmental trajectories of gender identification and gender-typing of gender-variant children, it is also important to understand how many children might feel atypical about their gender. In one study, when asked if their child "behaves like the opposite sex," about 0–6 % of mothers of boys and 0–12 % of mothers of girls agreed that this was sometimes to very true (Zucker, Bradley, & Sanikhani, 1997). However, in the same sample, when asked whether their child "wishes to be of opposite sex," percentages were lower with 0–2 % of mothers of boys and 0–6 % of mothers of girls agreeing with this statement (Zucker

et al., 1997). More recently, one study developed a measure based on Aron, Aron, and Smollan's (1992) Inclusion of Other in the Self Scale. Experimenters showed kindergarten to fourth-grade children from diverse ethnic backgrounds two sets of items, one measuring self-perceived similarity to girls and the other measuring self-perceived similarity to boys across actions, appearance, activities, and general similarity (e.g., "How much are you like girls/boys?") (Martin et al., 2016). Each set depicted different versions of a drawing with a group of girls or boys at one end of a line and a figure representing the child at the other end of the line. The different versions varied in how close (overlapping) or distant the group of girls/boys and the child were from each other, and children pointed to which version best represented the self in relation to the other girls and boys. Using cluster analysis, the following distribution was found: (1) about half of children perceived themselves to be more similar to same-gender compared to other-gender children, (2) 6 % perceived themselves to be more similar to the other-gender compared to same-gender children, (3) 30 % perceived themselves to be about equally and highly similar to both same- and other-gender children (androgynous), and (4) 17 % perceived themselves to be dissimilar to both same- or other-gender children. This study suggests that anywhere from 6 to 23 % of children may feel dissimilar to same-gender peers.

In studies examining gender private regard and centrality, 92 3- to 7-year-olds from mostly White, middle-class backgrounds were shown two groups of paper dolls. These children were asked questions like, "Some girls/boys feel proud to be a girl/boy, but other girls/boys do not feel proud to be a girl/boy. Which girls/boys are more like you?" (see Ruble, Taylor, et al., 2007). After selecting a group, children were asked, "Is that really true for you, or just sort of true for you?" in a Harter-type format. About 34 % of the sample felt negatively about being a girl or boy (equal percentages of girls and boys). However, only 3 % felt *very* negatively about being a girl or boy. In a separate sample, 246 ethnic minority 5-year-olds (Mexican-, Chinese-, Dominican-, and African-American) from low-income households were shown a scale of faces (very sad face to very happy face) and asked, "How do you feel about being a girl/boy?" (Halim, 2012). About 14 % felt negatively about being a girl or boy. However, only 7 % felt *very* negatively about being a girl or boy. Those who felt very negatively were more likely to be boys and less likely to be Dominican-American. Together, these data suggest that, in early childhood at least, anywhere from 14 to 34 % of children feel negatively about being a girl or boy, and anywhere from 3 to 7 % feel *especially* negatively about being a girl or boy. Much more research needs to be conducted to understand the prevalence of gender discontent. However, these studies do highlight that the issues we discuss may affect a substantial number of children.

10.2.2.1   Gender Identity

Because of the challenges involved with studying gender-variant populations (e.g., lower prevalence, willingness of communities and families to participate), few research studies have been able to examine the developmental trajectories of gender

identification in gender-variant populations with the same fine-grained approach of tracking children from year to year from early to middle childhood. Instead, researchers have generally been interested in the stability of gender identification from childhood to adulthood. That is, do gender-variant adults show different gender identification during childhood compared to gender-normative adults, and, if so, at what age do they diverge?

According to both prospective and retrospective studies, the answer is mixed. In terms of gender dysphoria, children as young as age two may feel incompatible with their assigned gender; however, this does not guarantee a lifetime of gender dysphoria (Steensma, Biemond, de Boer, & Cohen-Kettenis, 2011; Steensma, McGuire, Kreukels, Beekman, & Cohen-Kettenis, 2013). Recent studies following up gender dysphoric children in adulthood found that natal boys showed persistence rates of 12.2 % (Singh, 2012) and 20.3 % (Wallien & Cohen-Kettenis, 2008) and follow-up studies of natal girls showed persistence rates of 12.0 % (Drummond, Bradley, Badali-Peterson, & Zucker, 2008) and 50 % (Wallien & Cohen-Kettenis, 2008). All of these studies showed higher persistence rates than an earlier study of natal boys, where the persistence rate was only 2.2 % Green (1987). Overall, these data suggest that the majority of gender dysphoric children later identify with their assigned biological sex.

If individuals do remain gender dysphoric and wish to pursue life as the other gender, they are referred to as transgender or, in the clinical literature, as transsexual. A large-scale retrospective study conducted on gender-nonconforming transgender students found that the average age of perceiving oneself as "different" in terms of gender was at about age 5 (Rankin & Beemyn, 2012). About a fifth of the individuals surveyed "always" felt different in terms of gender, and 97 % indicated feeling a lack of fit with their gender-normative peers. Similarly, in a sample of 31 male-to-female (MTF) and 24 female-to-male (FTM) transgender youth, 26 (84 %) of the MTF and 16 (67 %) of the FTM youth always wished to be born the other sex (Grossman, D'Augelli, Howell, & Hubbard, 2005). These studies suggest that for gender dysphoric children who later become transgender, the majority identifies with the other sex relatively early in childhood, and identification with the other sex is stable.

Limited research has examined the gender identification of children who question their heterosexuality, and this research is also mixed. Similar to gender dysphoria, some children who question their heterosexuality later identify as homosexual in their lifetime, but not all do (Golombok & Tasker, 1996). Beyond examining stability, in terms of other dimensions of gender identification, one study found that elementary school-aged children (Grades 4–8) who were questioning their heterosexuality tended to be less satisfied with their assigned gender and perceived themselves as more different from same-gender peers (Carver, Egan, & Perry, 2004). However, other studies have found no relationship between self-perceived gender nonconformity and one's sexual orientation questioning (Savin-Williams, 1998).

Overall, these mixed results may reflect the complexity involved in gender identification development for gender-variant children. For example, gender-variant

children's trajectories of gender identification may not be known until later in life (Leibowitz & Telingator, 2012). Typologies of gender dysphoria have been influenced by age of onset. Although considerable literature has suggested that gender dysphoria can be traced to early childhood and prepubescent times, there are subgroups of gender dysphoric individuals who are described as late-onset (for review, see Lawrence, 2010). Further, some key developmental periods, such as puberty, may alter childhood experiences. Not all gender nonconforming children will follow trajectories similar to their nonconforming peers. More research is needed to better understand the developmental trajectories of gender identification for gender-variant children using prospective, longitudinal designs, while accounting for the diversity found among this population.

10.2.2.2   Gender-Typing

Just as with examining the trajectories of gender identification, most research on gender-variant populations has not observed changes in gender-typing from year to year. Instead, researchers have investigated whether gender-variant adults tended to show less gender-typing as children compared to gender-normative adults. There is some evidence that this is the case for appearance and play preferences. In one study of transgender youth, the majority of the youth (both female-to-male and male-to-female individuals) reported always wishing to wear clothes associated with the other gender (Grossman et al., 2005). Some retrospective studies of homosexual men and women also support a similar pattern (Bailey & Zucker, 1995). Homosexual men recalled being more feminine in their play and appearance preferences compared to childhood male peers, while homosexual women recalled being more masculine compared to childhood female peers. To minimize recall bias, Reiger, Linsenmeier, Gygax, and Bailey (2008) used childhood home videos to investigate the difference in childhood gender nonconformity and self-reports. Using both homosexual and heterosexual populations, this study found that self-reported gender nonconformity as children was confirmed by observer ratings of the childhood home videos. Additionally, gender nonconformity was significantly correlated with sexual orientation, suggesting that those who identified as homosexual as an adult were more gender nonconforming as children compared to those who identified as heterosexual adults. Thus, there is some evidence that gender-variant adults show less gender-typing as children compared to non-gender-variant adults, and sometimes even engage in other-gender-typed activities and dress.

Overall, this research suggests that for some gender-variant children, their developmental trajectories of gender identification and gender-typing diverge from the normative population. These children might identify more with the other gender from an early age, they might feel atypical of their assigned gender group, and they might show less gender-typing in activities and dress. However, more research is needed to understand whether there is change or stability in gender identification and gender-typing from early to middle childhood among gender-variant children.

10.3 Gender Identity and Gender-Typing in Relation to Health Outcomes: Theory

Thus far, we have discussed the typical developmental trajectories, from early to middle childhood, of gender identification and gender-typing. Yet, some gender-normative children do not follow these typical patterns of development. Are these children at risk for poorer health? Gender-variant populations may face many challenges across development. As a social identity, gender powerfully colors our experience of the world and is relatively permanent across situations. For example, children who feel different from their gender group may experience teasing or disapproval, not only in one instance, but across time, and possibly across situations and groups (Zucker & Bradley, 1995). Even without external teasing or disapproval, internally, children may ruminate about their gender identity or about feeling different. There is also the possibility that children may accept themselves the way they are, families may accept them as well, but children may continuously encounter others in their environments who impose their own gender stereotypes and expectations onto them. Thus, gender identity and gender-typing have the potential to have a high impact on children's health and well-being. How might gender identity and gender-typing relate to mental health and well-being? We propose that two aspects of gender identity and gender-typing are key—feeling different from others and feeling devalued by others (Fig. 10.1).

10.3.1 Mental Health and Well-Being

10.3.1.1 Feeling Different

Historically, literature on gender identity/typing and adjustment has focused on *being* different from others based on gender norms and whether *being* different from others leads to poor psychological adjustment. Controversy surrounded this question. Kagan (1964) proposed that being a typical girl or boy would lead to positive psychological adjustment, as it would minimize feelings of difference from others and would instill a healthy sense of self as a male or female. In contrast, Bem (1974) proposed that being a typical girl or boy was limiting and might lead to negative psychological adjustment. Bem was a proponent of minimizing gender distinctions and maximizing equality between the sexes (see also Woodhill & Samuels, 2003). Bem (1974, 1981) believed that androgyny—possessing both masculine and feminine traits—was ideal for girls and boys, men and women. With androgyny, individuals could acquire diverse skills, traits, and experiences that would aid them in a broader array of contexts. Although Bem's theories have been critiqued (Lippa, 2005), there has been some support for Bem's theories. For example, Woodhill and Samuels extended Bem's work and proposed that *positive* androgyny, a balance of positive masculine and positive feminine qualities, resulted in higher psychological health and well-being.

More recently, psychologists have focused on children's sense of *feeling* different from others based on gender. Similar to Kagan's (1964) arguments, researchers proposed that both feeling typical of one's gender (*felt typicality*) and feeling content with one's gender (*felt contentedness*) are beneficial for psychological adjustment (Carver et al., 2003; Egan & Perry, 2001). These two components—felt typicality and felt contentedness—have often been conceptualized as a broader concept of *gender compatibility* (Egan & Perry, 2001). Researchers hypothesized that children who feel incompatible with their gender will tend to exhibit poorer well-being. In particular, it is the combination of feeling atypical *and* feeling pressure from one's self and/or others to conform to gender norms that can likely be harmful to children's adjustment (Egan & Perry, 2001). How might feelings of atypicality and feeling pressure to conform to gender norms lead to poor adjustment? One potential mechanism that researchers have investigated is acceptance from others (Smith & Leaper, 2006). Children who feel that they are different from other children might be more likely to be teased or excluded by peers. This teasing or exclusion could, in turn, lead to anxiety, depression, and other maladaptive outcomes.

10.3.1.2   Feeling Devalued

Another pathway by which gender identity and gender-typing can affect the mental health of children is through perceiving devaluation. For example, girls may start to become aware that males have higher status than females in society and may internalize this devaluation. Children who are different from other same-gender children may also perceive devaluation, as they tend to be less popular and have lower social status among their peers compared to their gender-typical peers (Jewell & Brown, 2014). Nontraditional Children may be sensitive to this hierarchy between gender-traditional and nontraditional children, leading to distress. Children who are questioning heterosexuality may also pick up on cues that society often discriminates against lesbian, gay, bisexual, transgender, and intersex populations. Finally, children with gender dysphoria may also be sensitive to the stigma associated with gender dysphoria (Zucker & Bradley, 1995). Thus, it is possible that children might implicitly understand who is valued and who is not, whether based on gender, gender typicality, sexual orientation, or general gender variance. They might receive these messages from multiple sources, such as the media (Halim et al., 2013), language (e.g., using "gay" as a derogatory term) (Hall & LaFrance, 2012), from observing social dynamics around them, or from direct experience.

Few studies have directly examined children's perceptions of gender hierarchies. The most relevant studies conducted have mainly examined children's perceptions of men's group status compared to women's. These studies have found that awareness of male prestige and of discrimination against women is greater in older children (ages 10–15) compared to younger children (ages 5–6) (Brown & Bigler, 2004; Neff, Cooper, & Woodruff, 2007). However, even as young as age 4 there is variability in this awareness, with some children being more aware than others due to greater exposure to messages a conveying a gender hierarchy (Halim et al., 2013).
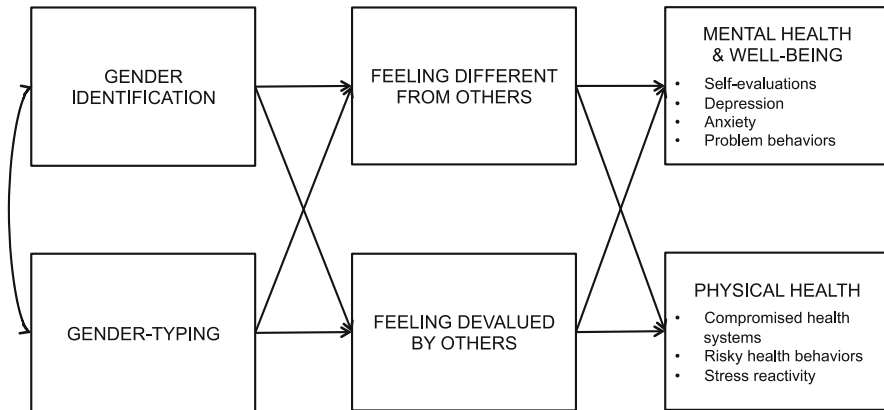
Fig. 10.1 Conceptual model of gender development and links with health

To date, to our knowledge, no studies have been conducted examining children's awareness of hierarchies based on gender typicality, sexual orientation, or gender variance.

Although there is little research on perceived devaluation based on gender and links with mental health, we can look to the racial/ethnic literature as a possible parallel. A growing body of research has shown that youth and adults who perceive devaluation based on their race or ethnicity tend to exhibit psychological distress (Ho & Sidanius, 2009; Sellers, Copeland-Linder, Martin, & Lewis, 2006). If processes involving perceived devaluation's effects on mental health generalize across both race/ethnicity and gender, then there is potential for perceived devaluation based on gender to show similar links to poorer mental health (Fig. 10.1).

10.3.2 Physical Health

How might feeling different or devalued based on gender relate to physical health? In the past few decades, health psychologists have made gains to show that our psychology can affect our bodies and our physical health. The large majority of this research has investigated links between psychology and health in adults. Thus, caution is needed in generalizing models of psychology and health from adults to children, as developmental health psychology is an emerging field. However, these models based on adults may be useful in generating ideas for future research on the effects of one's gender identity and gender-typing on physical health in children.

Feeling different and feeling devalued can potentially cause a child stress. Further, if children chronically feel different or devalued from others due to gender, they may experience a chronically stressful environment. Theories of health psychology have modeled how this chronic stress might lead to poorer physical

health outcomes. One useful model that we can apply here specifically theorizes on how perceived discrimination affects physical health (Pascoe & Richman, 2009). Although perceived discrimination and feelings of difference due to gender are distinct, the same processes may apply as both share commonalities and both may induce stress. One pathway describes a direct link between feeling different or devalued and physical health. The second describes a pathway whereby feeling different can lead to a heightened physiological stress response, which can cause sustained demand on the stress response system resulting in allostatic load (McEwen & Wingfield, 2003). This load, in turn, can lead to illness and worse physical health generally. Some mechanisms whereby stress can lead to worse health include elevated ambulatory and systolic blood pressure (Brady & Matthews, 2006; Matthews, Saloman, Kenyon, & Zhou, 2005), elevated cytokines related to unhealthy inflammation profiles (Ratner, Halim, & Amodio, 2013), and possibly sleep difficulties (El-Sheikh, Buckhalt, Mize, & Acebo, 2006; Gross & Borkovec, 1982). The third describes how feeling different can lead to more risky health behaviors, which in turn leads to worse physical health. For children, unhealthy behaviors could possibly be captured in sedentary behavior, eating disturbances (eating too much or too little), or eating high caloric and fatty foods (Bennett & Cooper, 1999; Gluck, 2006). In turn, one might hypothesize, then, that these unhealthy behaviors could promote obesity and childhood diabetes. Overall, the model of perceived discrimination affecting physical health through direct and indirect means can possibly serve well in making predictions for children's health in the face of feeling different based on gender (Fig. 10.1).

Beyond current physical health, early exposure to psychosocial stress in development can have negative implications later on in development. There have been several proposed mechanisms for how early stress can affect later development, through both biological and social mechanisms, which likely interact to affect outcomes. The strongest empirical evidence for the link between early stress and poor developmental outcomes comes from literature on poverty and physical maltreatment (Miller, Chen, & Parker, 2011). It remains to be seen if stress due to feeling different based on gender is as powerful as stress from poverty or physical maltreatment. Nevertheless, the processes involved may be similar. For example, stress may cause sleeping difficulties (Sadeh, 1996), which interrupts healthy growth and development. Also, children who are rejected by others may also feel more anger and hostility, risk factors for physical attributes that, in adulthood, may put them at risk for coronary heart disease (Woodall & Matthews, 1989). Additionally, early stress during the prenatal or neonatal period can influence the brain to experience more exposure to glucocorticoids, stress-related hormones, and catecholamines. The brain's exposure to these hormones and momoamines, in turn, can interfere with executive functioning and self-regulation, which can possibly lead to developmental delays (Blair, 2010; Evans & Kim, 2013). Very recent work is beginning to suggest that early life stress (poverty, physical maltreatment) can even alter gene expression having to do with stress reactivity and inflammation, making children biologically vulnerable to behavioral and health problems (Miller et al., 2011; Romens, McDonald, Svaren, & Pollak, 2014). Hence, stressors caused by feeling different or devalued based on gender cannot only

affect the concurrent physical health of children, but also potentially affect their health and development in years to come.

The literature on early childhood adversity also suggests that the early years are critical as these early negative experiences might rewire the biological system (Fagundes & Way, 2014). For example, children who had early childhood adversity, but were later educated, upward socially mobile professionals still experienced worse physical health compared to their peers who had not experienced this adversity (Kittleson et al., 2006). Again, caution is needed in comparing models of stress due to poverty and physical maltreatment to models of stress due to gender. However, we speculate that in certain cases, if a child early on feels extreme levels of stress due to feeling different or devalued based on gender, this child could potentially experience worse physical health as an adult, even if they no longer felt different from others or devalued as an adult.

10.4   Gender Identity and Gender-Typing in Relation to Health Outcomes: Empirical Evidence

We first outlined theory on how variation in gender identity and gender-typing could be related to health outcomes. We now discuss what empirical evidence exists that addresses this issue. Below we separate mental and physical health outcomes below for ease of organization. However, it is important to note that mental health and physical health are interrelated (Cohen & Herbert, 1996). For example, somatic symptoms (headaches, stomachaches, fatigue) in children are common complaints for those experiencing anxiety (Ginsburg, Riddle, & Davies, 2006).

10.4.1   Mental Health and Well-Being

10.4.1.1   Normative Population

A robust body of research has addressed the question of whether children who feel incompatible with their gender (low feelings of typicality and dissatisfaction with one's gender) might be at risk for poor adjustment. It is worth noting that perceptions of feeling and actually being different from same-gender children have been found to be positively correlated in children (Lurye, 2011). Yet, *feeling* different from same-gender children has emerged as a stronger and more consistent predictor of psychological adjustment (Lurye, 2011). The majority of this research has focused on elementary school-aged to preadolescent children and suggests that, across diverse ethnic groups, children who feel more incompatible with their gender do tend to exhibit more negative psychological adjustment (e.g., lower feelings of global self-worth and self-esteem) (Carver et al., 2003; Egan & Perry, 2001; Martin, Fabes, & Hanish, 2014). Furthermore, there has been support for the idea that the combination of felt atypicality with feelings of pressure to conform to gender norms

is particularly harmful for children (Egan & Perry, 2001). Interestingly, research has found that across ethnic groups, boys, in particular, receive more pressure to conform to gender norms compared to girls, as well as receive harsher consequences for failing to do so (Carver et al., 2003; Jewell & Brown, 2014; Smith & Leaper, 2006). Thus, boys may be at particular risk for maladjustment in the face of feeling different from other boys.

Another group who might possess a particular risk for poor adjustment are girls who self-identify as tomboys. Several studies have shown that girls who either self-identify as tomboys or show tomboy-like patterns (male-typed traits, behaviors, and interests) are more likely to report feeling different from other girls and feeling discontent with being a girl compared to traditional girls (Ahlqvist et al., 2013; Martin & Dinella, 2012). Further, researchers have found that tomboys tend to have lower social self-esteem (Lobel et al., 1997) and global self-esteem when not buffered by high athleticism (Halim et al., 2011). Future research still needs to directly examine whether the lower self-esteem of tomboys is due to some feeling of gender incompatibility. Nevertheless, as a substantial number of girls today self-identify as tomboys, the risk for lower self-esteem is relevant to many.

As for the hypothesized mechanism of how gender typicality might predict adjustment, there has been some support for acceptance from peers as a key variable. A study of fourth to eighth grade children found that children who felt less gender-typical tended to have more negative peer relations (Egan & Perry, 2001). Also, one study of adolescents found that the relation between self-perceived gender typicality and self-worth was partially explained by peer acceptance (Smith & Leaper, 2006). Hence, overall, there is support for the prediction that feeling different from others, based on gender, can lead to poorer adjustment. In contrast to this robust body of work, there are few studies investigating whether feelings of devaluation based on gender also lead to poorer mental health and well-being. Future studies should address this research gap.

10.4.1.2   Gender-Variant Population

A body of research suggests that gender variance in childhood is a risk factor for poorer mental health and well-being across several indicators. First, gender-variant children are at risk for poor self-evaluations. Rijn, Steensma, Kreukels, and Cohen-Kettenis (2013) found that gender-variant girls tended to have lower global self-worth, lower self-evaluations of physical appearance, and poorer behavioral conduct compared to gender-normative girls. Gender-variant boys also reported lower global self-worth, as well as lower scholastic competence, athletic competence, and self-evaluations of physical appearance compared to gender-normative boys. Overall, gender variant compared to gender-normative children possessed more negative self-perceptions globally and across multiple domains.

Second, gender non-normative children have shown more problem behaviors compared to their normative peers (Egan & Perry, 2001; Martin et al., 2014; Zucker, Wood, & VanderLaan, 2014). Children who perceived themselves to be more similar to other- versus same-gender children, in particular, have reported more social anxiety

than children who perceive themselves to be similar to same-gender children (Martin et al., 2014). Children with gender dysphoria have also been found to have more attention problems, delinquent behaviors, and aggressive behaviors compared to their gender-normative peers (Wallien, van Goozen, & Cohen-Kettenis, 2007).

Third, on top of poor self-evaluations and problem behaviors, when children experience gender dysphoria, they are also likely to experience other psychological disorders, especially anxiety and depression (Coolidge, Thede, & Young, 2002; Wallien et al., 2007; Zucker & Bradley, 1995). Most studies find that gender dysphoria is commonly comorbid with other psychiatric disorders in general, although there have been inconsistent findings (de Vries, Doreleijers, Steensma, & Cohen-Kettenis, 2011). Overall, however, several studies generally indicate that gender-variant children reported stronger negative feelings and emotional disturbances (for a review see Zucker et al., 2014).

Furthermore, the high rates of psychiatric comorbidity associated with gender variance can have serious consequences. For example, compared to non-transsexual adults, transsexual patients had higher perceived stress and reported insecure attachment patterns (Colizzi, Costa, Pace, & Todarello, 2013). Gender-variant individuals also often experience heightened anxiety and depression, which can, in turn, increase suicidal behavior (Plöderl & Fartacek, 2009; Terada et al., 2011; for a review, see Lawrence & Zucker, 2014). Terada et al. (2011) sampled Japanese patients that were diagnosed with gender dysphoria without psychiatric comorbidity and found that 72% of the sample exhibited suicidal ideation at some point in their lifetime. Similarly, McDuffie and Brown (2010) conducted a descriptive study on US veterans with gender identity disturbances. Results indicated that 61% had one or more suicide attempts. Compared to the rate of about 4% in the general population (Substance Abuse and Mental Health Services Administration, 2015), these high rates of suicidal behavior or ideation are disturbing and underscore the graveness of the matter. These negative consequences may stem from the stigma related to being gender variant (Zucker & Bradley, 1995) as well as, from the distress associated with gender dysphoria (Colizzi et al., 2013).

A survey of the literature, then, suggests that gender-variant children are at risk for poorer mental health and well-being compared to their gender-normative peers. It is important to also note, however, that gender-variant children show rates of behavioral and emotional problems that are similar to children referred for other clinical issues. Gender variant compared to gender-normative children tend to show more negative self-perceptions, problem behaviors, and often experience more anxiety and depression and other psychiatric disorders. Greater anxiety and depression, in turn, can lead to suicidal ideation and behavior in one's lifetime.

10.4.2 Physical Health

Does feeling different or devalued based on gender affect the physical health of children as theory suggests? In contrast to the literature on gender and mental health, this area of research is sparse, and there is little empirical evidence for a connection between gender and physical health in children. Even in the adult literature, few

studies have examined whether feeling different or devalued based on gender leads to poorer physical health outcomes. These studies, however, do lend support to the predictions made above, particularly in regard to devaluation and health. For example, hearing, "That's so gay!", with its derogatory connotations, was associated with poorer physical well-being among lesbian, gay, and bisexual college students (Woodford, Howell, Silverschanz, & Yu, 2012). In our own study of 187 ethnic minority women, we found that feeling that others regarded women more negatively than men in terms of importance, worth, and respect (*comparative gender public regard*) was associated with lower overall self-reported physical health and more frequent alcohol consumption (Lindner, Bryant, & Halim, 2014). Thus in both cases, feelings of devaluation based on gender increased the risk of poorer physical health. It remains to be seen if these dynamics seen in adults generalize to children.

10.5   Future Directions and Practical Implications

Research on the developmental trajectories of gender identification and gender-typing of gender-variant children is still scarce. We also know little about whether these children are at risk for poorer mental and physical health during childhood. As we have outlined above, research on gender dysphoric youth and adults shows that they are at risk for a number of mental and physical health problems. Research on lesbian, gay, and bisexual adults (LGB) has also shown that LGB compared to non-LGB populations are indeed at greater risk for poorer mental health, including higher rates of major depression, generalized anxiety, substance use, and suicidal behavior (Hatzenbuehler, 2009; Meyer, 2003). There are also persistent physical health disparities between LGB and non-LGB adult populations as well, spanning multiple outcomes such as overall health, cardiovascular health, and incidence of chronic disease, cancer, asthma, allergies, and headaches (Lick, Durso, & Johnson, 2013). Future research should examine whether these disparities can also be seen in children who begin to question their heterosexuality and, if so, when these disparities emerge in development. Similarly, more attention is needed to investigate the health outcomes of other types of gender-variant children and children who feel different or devalued based on their gender. To test these questions, we recommend that more longitudinal studies are needed to follow the progression and development of gender-variant children in their gender-typing and gender identification. Understanding these trajectories could potentially help inform future interventions to ameliorate health risks for these children.

Practically speaking, it would be helpful for the public to become aware that teasing, exclusion, and discrimination based on gender are not innocuous rites of childhood, but can possibly have major consequences on children's health. Further, taking care of all children's health, including children who feel different or devalued based on gender, affects public health and health expenditures more generally for the nation as a whole. We encourage schools, teachers, administration, and parents to continue to make clear statements of inclusiveness based on gender, such as establishing Gay-Straight Alliance clubs. On a more macro level, it is important to

work towards removing the stigma from gender variance. Societal acceptance of all kinds of children, no matter whether they are masculine or feminine or whether they identify with one gender or the other, might potentially help to ease the impact and progression of health risks for children in childhood, and later as youth and adults.

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