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## Sexual Orientation and Gender Identity/Expression in Adolescent Research: Two Decades in Review

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### ABSTRACT

There is a long history of research among adolescents who are minoritized and marginalized for their sexual orientation and gender identity/expression (SOGIE). However, it remains unclear how we can best conceptualize and assess SOGIE in adolescence, resulting in different subpopulations and findings across studies. Addressing this issue, we present a narrative literature review of the conceptualization and assessment of SOGIE, and provide recommendations for conceptualizing and operationalizing these concepts. Our review indicated that most research with adolescent populations still almost exclusively assesses isolated dimensions of sexuality and gender (e.g., attraction but not identity). We argue that to make research inclusive and equitable, scholars are required to make clear substantiated decisions and be transparent about the SOGIE dimensions and, thus, subpopulations they represent.

Research among adolescents who are minoritized and marginalized for their sexual orientation and gender identity/expression – sexually and gender diverse adolescents – gained traction in the late 1990s. However, there is immense variation in how sexual orientation and gender identity/expression (SOGIE) have been conceptualized and operationalized in adolescent research. The question remains whether nowadays, researchers make more reasoned decisions about their definitions and assessments of sexuality and gender than before. This narrative review aims to 1) synthesize the conceptualization and operationalization of SOGIE during the past two decades (2000–2022), 2) understand whether different operationalizations result in different proportions of sexually and gender diverse adolescents in study samples, and 3) provide recommendations for inclusive assessment of sexuality and gender in adolescent research.

### Importance of SOGIE-Research in Adolescence

Sexuality and gender are relevant parts of adolescents' lives, and related to their health and wellbeing. Without a comprehensive understanding of SOGIE in adolescence, research excludes sexually and gender diverse adolescents from participating and does not equitably represent their experiences. Moreover, without understanding SOGIE in adolescence research might draw erroneous conclusions which impact policy and social services.

Many studies have shown disparities in health and health behaviors for sexually and gender diverse adolescents, as well as experiences that undermine health such as stigma, rejection, and bullying (de Lange, Baams, et al., 2022; Martin-Storey & Baams, 2019; Pellicane & Ciesla, 2022). A meta-analysis of 35 studies found that sexually diverse adolescents had 3.5 times

the odds of lifetime suicide attempts compared to heterosexual adolescents (di Giacomo et al., 2018). Further, a study among adolescents from the United Kingdom found that, compared to heterosexual adolescents, sexually diverse adolescents had 5.4 times the odds of experiencing high depressive symptoms (Amos et al., 2020). In addition, a meta-analytic study showed that 46% of transgender individuals reported non-suicidal self-injury versus 14% of heterosexual/cisgender individuals (Liu et al., 2019), and in a US-based sample 52% of gender diverse adolescents met clinical cutoffs for depressive distress versus 26% in cisgender adolescents (Reisner et al., 2016).

Explanations for these health disparities are found in the experiences with intrapersonal, interpersonal, and structural stigma (Hatzenbuehler, 2016; Martin-Storey & Baams, 2019), which create psychological distress and undermine physical and mental health (Diamond & Alley, 2022; Goldbach & Gibbs, 2017; Meyer, 2003). For gender diverse adolescents, there are additional stressors that threaten their health and wellbeing: Experiencing intrapersonal and interpersonal gender dysphoria and lacking access to affirmative health care, both in a context of cisnormativity and transphobia (Toomey, 2021). Intrapersonal gender dysphoria, or anatomical dysphoria, is defined as distress following from incongruence between one's assigned sex at birth and one's actual gender identity/expression (Galupo et al., 2020; Toomey, 2021). Interpersonal gender dysphoria results "from the refusal of other people or contexts to affirm a trans person's existence" (Toomey, 2021, p. 98).

Existing research underlines the need for understanding sexually and gender diverse adolescents' experiences, health, and wellbeing. However, studies use very different conceptualizations and operationalizations of SOGIE. Different measures communicate to participants what legitimate identities

and experiences are. Moreover, selectively including or excluding individuals results in different study samples and findings that cannot be compared across studies.

### **Decades of Adolescent Research on Conceptualization of SOGIE**

Current conceptualizations of SOGIE in adolescent research need to be understood in light of decades of research. Historically, research on adolescent sexual development focused on potential risks and how to avoid those risks, rather than on positive aspects such as pleasure or satisfaction: “Adolescent sexuality has been equated by the research, clinical, and policy collective with medical pathology and socio-cultural deviance” (O’Sullivan & Thompson, 2014, p. 435). This focus on potential risks that were assumed to come with *any* sexual behavior outside of marriage kept researchers in the dark about the development of early adolescent sexual attraction and interests. This was particularly salient for adolescents whose sexual or love interests did not meet heteronormative standards. Moreover, it was generally assumed that adolescents were too young to “know” their sexual orientation.

At the time, research rarely included measures of sexual orientation in research with adolescents, and when measures were included, they often assumed a binary sexual orientation: straight or gay. From the 1980s onwards, researchers became increasingly aware of the multidimensionality of sexual orientation. Yet, they still rarely assessed sexual orientation with multidimensional measures. Two exceptions were the Klein sexual orientation grid, which assessed sexual orientation with seven dimensions including fantasy, attraction, and self-identification (Beaulieu-Prévost & Fortin, 2015; Galupo et al., 2014), and the Native American Adolescent Health Survey, a modified version of the Minnesota Adolescent Health Survey, which included five items to assess sexual orientation among adolescents in 1987 (Saewyc et al., 1998).

The history of assessing adolescents’ gender identity and expression followed a different route. With the rise of “social learning” models in the 1950s, clinicians had become convinced that gender was not (exclusively) based on biology, but rather that all children had a clear sense of what their gender was (Meadow, 2018), regardless of body parts. Much of these convictions followed from the experiences of children with intersex variations, who according to clinicians had internalized the sex they were assigned at birth and who thought that attempts to change their gender would be harmful (Meadow, 2018). This created two lines of thought: Some clinicians worked to “prevent” a transgender identity in *children*, while others attempted to make gender-affirming care accessible to transgender *adults*, sometimes even in the same clinic (Meadow, 2018).

More recently, transgender experiences in childhood and adolescence continued to be considered a disorder. While “Ego-syntonic Homosexuality” was removed as a mental disorder from the Diagnostic and Statistical Manual of Mental Disorders (DSM) in 1973, Gender Identity Disorder of Childhood (GIDC) was added in 1980 (Beek, Cohen-Kettenis, Bouman, et al., 2016; Beek, Cohen-Kettenis, Kreukels, et al., 2016) and this rightfully

separated the concepts of sexuality and gender (Lagos, 2022). However, there were concerns that parents who feared their gender diverse child might be gay or lesbian could now visit a clinician to discuss a potential gender identity disorder. Some even argued that GIDC was added to the DSM to still enable clinicians to identify and treat “early signs of homosexuality” in children (Meadow, 2018).

In the following narrative review, we synthesize research on conceptualizations and operationalizations of SOGIE in adolescent research in the period 2000–2022. A narrative review was chosen because this relatively flexible and selective approach facilitates inclusion of studies from different disciplines and with various methodologies. In addition to the narrative review, we provide a more detailed overview of recent (2018–2022) large research projects with their used conceptualizations, and proportions of sexually and gender diverse adolescents.

### **Methodology**

For the narrative review we followed guidelines for non-systematic reviews and narrative reviews of the literature (Cronin et al., 2013; Ferrari, 2015; Noble & Smith, 2018). We searched four electronic databases on April 15th, 2022: APA PsycInfo, ERIC, MEDLINE, and SocINDEX. We used the following search terms: adolescents OR teenagers OR teen OR youth AND “sexual orientation” OR “gender identity” OR transgender OR “sexual minority” OR LGBT OR LGB OR gay OR lesbian OR bisexual OR homosexual OR queer OR “gender expression.” Publication format was limited to peer-reviewed journal articles, and year of publication was limited to 1998–2022.

A total of 1098 titles were reviewed to select relevant studies, from these 487 abstracts were reviewed to identify themes and large, population-based studies with adolescent samples. A selection of studies that included measures of SOGIE among adolescents was compiled and is presented in Table 1. These concerned large research projects (“studies”; referring to entire projects, not individual papers) with data from the past five years: 2018–2022. In doing so, we prioritized studies with 1) large, 2) representative, and 3) population-based data, and aimed to 4) represent different regions across the world. Studies were eligible for inclusion if they provided English or Dutch information on their definitions and measures used (the languages spoken by our author team). We also searched the measurements and proportions of sexually and gender diverse adolescents of each study in reports published by the study developers (i.e., published on the official website) to be as complete as possible. If these were unavailable, we extracted the information from the most recent peer-reviewed paper that used the general sample (i.e., did not select a subgroup).

### **Results: Conceptualizations of SOGIE**

Our narrative review below provides a thematic summary of insights on adolescent research, with a focus on the conceptualization of sexuality and gender.



**Table 1.** Overview of SOGIE operationalizations in population-based studies among adolescents.

Source (year)	Resource	Sample	Grades/age	Measure of sexual orientation	% sexually diverse	Measure of sex, gender identity/expression	% gender diverse
Minnesota Student Survey (2019)	(Minnesota Student Survey Interagency Team, 2019)	Cross-sectional study of N = 80,456 middle and high school students in the United States (Minnesota)	grades 9–11	1 Labeling (self-labeling) How do you describe yourself? Heterosexual (straight), Bisexual, Gay or lesbian, Questioning/Not sure, Pansexual, Queer, I don't describe myself in any of these ways, I am not sure what this question means	11.5% (Bisexual, Gay or lesbian, Questioning/Not sure, Pansexual, Queer)	<b>2-step approach</b> 1 Sex (sex) What is your biological sex? Male, Female, No answer 2 Gender identity (self-labeling) Are you transgender, genderqueer, or genderfluid? Yes, No, I am not sure about my gender identity, I am not sure what this question means 3 Gender expression A person's appearance, style, dress, or the way they walk or talk may affect how people describe them. How do you think other people at school would describe you? Very or mostly feminine, Somewhat feminine, Equally feminine and masculine, Somewhat masculine, Very or mostly masculine	2.5% Transgender, genderqueer, or genderfluid, Not sure
YRBSS (2019)	(Underwood et al., 2020)	Cross-sectional study of N = 13,827 middle and high school students in the United States (national- and state-level)	grades 9–12	1 Identity (self-labeling) Which of the following best describes you? Heterosexual (straight), Gay or lesbian, Bisexual, or Not sure 2 Behavior (lifetime sexual contact) During your life, with whom have you had sexual contact? I have never had sexual contact, Females, Males, or Females and males	15.7% (Gay or lesbian, Bisexual, Not sure) 7% (Same-sex, males and females)	1 Sex (sex) What is your sex? Male, Female	not reported
California Healthy Kids Survey (2017–2019)	(Austin et al., 2020)	Cross-sectional study of N = 45,848 middle and high school students in the United States (California)	grades 7–11	1 Identity (self-labeling) Which of the following best describes you? Straight (not gay), Gay or lesbian, Bisexual, I am not sure yet, Something else, Decline to respond	13.1% (Gay or lesbian, Bisexual, I am not sure yet)	<b>Two-step approach</b> 1 Sex (sex) What is your sex? Male, Female 2 Gender identity (self-labeling) Some people describe themselves as transgender when their sex at birth does not match the way they think or feel about their gender. Are you transgender? No I am not transgender, Yes I am transgender, I am not sure if I am transgender, Decline to respond	2.4% (Transgender, Not sure)
Millennium cohort study (2018–2019)	(Patalay & Fitzsimons, 2020)	Longitudinal study of N = 10,757 adolescents in the UK (national)	17 year-olds	1 Identity (self-labeling) Which of the following options best describes how you currently think of yourself? Completely heterosexual/straight, Mainly heterosexual/straight, Bisexual, Mainly gay or lesbian, Completely gay or lesbian, Other, Don't know, Prefer not to say	10.6% (Mainly, or Completely gay or lesbian, Bisexual, Other)	<b>2-step approach</b> Sex at birth Which of the following were you described as at birth? Male, Female, Intersex, I prefer not to say 2. Gender identity (gender experience) Which of the following describes how you think of yourself? Male, Female, In another way	not reported

(Continued)

Table 1. (Continued).

Source (year)	Resource	Sample	Grades/age	Measure of sexual orientation	% sexually diverse	Measure of sex, gender identity/expression	% gender diverse
Youth'19 (2019)	(Fenaughty, Sutcliffe, Clark, et al., 2021; Fenaughty, Sutcliffe, Fleming, et al., 2021)	Cross-sectional study of N = 7721 secondary school students in New Zealand (national)	12–19 year-olds	2 Attraction (lifetime) <i>I have felt sexually attracted only to [females/males], never to [males/females]. More often to [females/males] and at least once to [males, females], About equally often to [females/males] and to [males/females]. More often to [males/females] and at least once to [females/males]. Only ever to [males, females] never to [females, males], I have never felt sexually attracted to anyone at all</i> 1 Attraction (current) <i>Who are you attracted to? Opposite or different sex, Same sex, Both sexes, Not sure, Neither, I don't understand this question</i>	16% (Same sex, Both sexes, Not sure, Neither)	<b>3-step approach</b> 1 Sex at birth <i>What sex were you at birth, even if it is different from today? Boy, Girl, Indeterminate</i> 2 Gender identity (gender experience) <i>How do you describe yourself? Boy or man, Girl or woman, I identify in another way</i> 3 Gender identity (self-labeling) 3.1 <i>Are you (or might you be) transgender or gender-diverse? By this, we mean that your current gender is different from your gender at birth (e.g., trans, non-binary, Queen, fa'afafine, whakawahine, tangata ira tane, genderfluid or genderqueer)?</i> <i>Yes, No, I am not sure, I don't understand this question</i> 3.2 <i>If Yes/Not sure: which of the following best describes you? Trans boy or man, Trans girl or woman, Non-binary, genderqueer, genderfluid, Agender, Takatāpui, Whakawahine, Tangata ira tane, Fa'afafine, Fa'atātama, I am not sure of my gender, Something else, please state: ...</i>	not reported
HBSC (2021)	(Boer et al., 2022)	Cross-sectional study of N = 5243 middle and secondary school students in the Netherlands (national)	grades 7–12	1 Attraction (current) <i>Are you attracted to ... Girls, Boys, Both, I don't know</i> 2 Attraction (lifetime) <i>Have you ever been in love? Yes, with a girl, Yes, with a boy, Yes, with a boy and a girl, I have never been in love</i>	17.2% (Same- and both gender, I don't know)	1.6% (Yes/Not sure to 3.1) 3% (inconsistent assigned sex at birth and gender, Neither, Other)	

(Continued)

Table 1. (Continued).

Source (year)	Resource	Sample	Grades/age	Measure of sexual orientation	% sexually diverse	Measure of sex, gender identity/expression	% gender diverse
HBSC (2018)	(Költő et al., 2020)	Cross-sectional study of N = 6,239 middle and secondary school students in Ireland (national)	12–17 year-olds	1 Attraction (current) <i>Are you attracted to ... Girls, Boys, Both, I am not attracted to anyone</i>  2 Attraction (lifetime romantic attraction) <i>Have you ever been in love with ... A girl or girls, A boy or boys. Both, I have never been in love</i> (out of full sample): 35.7%	12.2% (Same-and both-gender, Not to anyone)	not reported	not reported
HBSC (2018)	(Ciria-Barreiro et al., 2021)	Cross-sectional study of N = 1,212 middle and secondary school students in Spain (national)	15–18 year-olds	not reported	4.5% (Same- and both-gender) Never been in love (out of full sample): 35.7% not reported	<b>2-step approach</b> 1 Gender/sex (gender/sex) <i>Are you a boy or a girl? Boy, girl</i> 2 Gender identity (gender experience) <i>Identifies of people are varied: some people identify themselves as boys, others as girls, and there are people who don't feel represented in this system. Please, choose the option that you feel more identified with: Boy, Girl, Neither, Other</i>	2.5% (inconsistent assigned sex at birth and gender, Neither, Other)
HBSC (2018)	(Cosma et al., 2022)	Cross-sectional study of N = 13,690 middle and secondary school students in Bulgaria, Switzerland, England, France, Hungary, Iceland, North Macedonia (all national) and French-speaking Belgium (regional).	14–16 year-olds	1 Attraction (lifetime romantic attraction) <i>Have you ever been in love with ... A girl or girls, A boy or boys, Both girls and boys, I have never been in love</i>	3.2% (Same- and both-gender) Never been in love (out of full sample): 12.9%	not reported	not reported
Social Safety Monitor (pooled 2016, 2018)	(Kaufman & Baams, 2022)	Cross-sectional study of N = 29,879 secondary school students in the Netherlands (national)	grades 7–12	1 Attraction (expected romantic attraction) <i>1) I could fall in love with a girl 2) I could fall in love with a boy 1. Completely agree; 5. Completely disagree</i>	14.5% (Both- or same-gender attracted, Completely agree, Agree)	<b>2-step approach</b> 1 Gender/sex (gender/sex) <i>What is your sex? Boy, Girl</i> 2 Gender identity (gender experience) <i>1. Do you identify as a boy? 2. Do you identify as a girl? Yes, completely, Partly, No</i>	2.7% (Gender partly or not aligned with the reported sex)

## Conceptualizing Sexual Orientation

### *Sexual Orientation Can Be Assessed in Adolescence*

In the early 2000s, researchers increasingly acknowledged that youth's sexual orientation could already be assessed in adolescence, perhaps even in early adolescence. For example, already before the start of puberty, many children were shown to experience solitary or interpersonal sexual interests (de Graaf & Rademakers, 2006; Herdt & McClintock, 2000), coinciding with an awareness of attraction toward same- or multiple-genders/sexes (Herdt & McClintock, 2000). However, researchers remained hesitant to ask adolescents about their sexual orientation, and institutional review boards (IRBs) or ethics committees at universities struggled to evaluate the potential costs and benefits of such research.

Over time, however, several pioneers showed that research into adolescent sexual development (Fortenberry, 2013; Reitz et al., 2015) or research among sexually and gender diverse adolescents (Russell & Joyner, 2001; Russell et al., 2001) gave youth the opportunity to participate, be heard and represented, have their needs met, while not presenting any harm (American Psychological Association, 2018; Kuyper et al., 2012, 2013; Macapagal et al., 2017; Mustanski, 2011; Snapp et al., 2016). Thus, despite some early hesitance in including measures of sexual orientation in adolescent research, researchers acknowledged its importance.

### *Sexual Orientation Is Multidimensional and Fluid*

An important insight from our literature review was that for many adolescents, their reported sexual orientation would depend on the dimension of sexual orientation that was assessed or the measure that was used. For example, in a Dutch study among adolescents and young adults, sexually diverse participants reported their sexual identity, attraction to men and women, and gender/sex<sup>1</sup> of their lifetime sexual partners. These sexual orientation dimensions were considered to “overlap” when, for example, a youth reported attraction to same-gender/sex peers, had sexual experience with same-gender/sex peers, and self-identified as gay, lesbian, or bisexual. For only 29% of sexually diverse youth did these three assessments “overlap” (de Graaf et al., 2018). Similarly, in a study among Swedish high school students (Priebe & Svedin, 2013), four dimensions of sexual orientation were assessed: identity, emotional or sexual attraction, romantic attraction, and the gender/sex of their sexual partners. There was little overlap across measures. For example, 17.6% reported same- or both-sex attraction on at least one of the four measures, while only 1.5% of youth reported this on all four measures (Priebe & Svedin, 2013). These studies indicated that when researchers only assess one dimension of sexual orientation, they may misidentify some adolescents as sexually diverse or heterosexual.

Further, despite large groups of adolescents reporting a bisexual, queer, or pansexual identity, or attraction to multiple genders (Jones, 2021; Mata et al., 2021), there were important misconceptions about plurisexual orientations in

research. For example, bisexual individuals were often lumped together with gay and lesbian individuals (i.e., LGB). Others based sexual identity on an individual's and their partner's gender/sex (i.e., as lesbian/gay or heterosexual). Further, in measures of attraction “bisexual” was often placed in the middle of a continuum from “exclusively attracted to men” to “exclusively attracted to women,” while many bisexual individuals do not experience attraction to men and women equally, experience attraction to non-binary or genderqueer individuals, or experience attraction regardless of gender (Kaestle & Ivory, 2012; Monro et al., 2017). These limitations perpetuated invisibility and erasure of bisexual orientations in research and society more broadly and limited our understanding of the unique experiences of bisexual adolescents (Miller et al., 2022; Ross et al., 2018; Salway et al., 2019). Moreover, an important oversight in research on adolescent sexuality was that similar to the erasure of bisexuality in research, extant research often misrepresented and thereby erased pansexual and queer identities. Unfortunately, this has resulted in the lumping together of pansexual and queer adolescents together with bisexual adolescents.

Moreover, for many gender diverse adolescents, common questions about sexuality, sexual behavior, and sexual orientation were simply impossible to answer (Galupo et al., 2016), challenging dominant notions of “same-sex attraction” or being in a “same-gender relationship.” This was also problematic because research on sexuality and gender was, for many adolescents, the first or only encounter they had with adults who affirmed or acknowledged their experiences and identities – researchers were often seen as authority figures (Carrotte et al., 2016).

Fluidity of sexual orientation was another important focus in adolescent research in the past decades. For example, a longitudinal study in a school-based sample from the US assessed self-identification and romantic attraction to boys and girls at three measurement waves, and lifetime sexual experience with boys and girls at the last measurement wave. The findings showed multiple developmental patterns, but overall, many adolescents were “fluid” in the sexual identity label and romantic attraction they reported across the two years of the study. For example, 26% of assigned girls and 11% of assigned boys (sex assigned at birth) shifted in identity labels (Stewart et al., 2019). Further, a study among adolescents from England showed that many had engaged in intimate behaviors with same-gender/sex peers, ranging from holding hands to laying down with someone (Li & Davis, 2020).

In line with research findings on fluidity of sexual orientation in adolescence, in a qualitative study (Guittar, 2014) among sexually diverse young adults it was reported that “coming out” with an affinity (i.e., liking girls, boys, or people) before affirming a minority identity gave individuals more flexibility in their choice of sexual and romantic partners, and made their sexual orientation more “palatable” to others. This may reflect fluidity in sexual identity or attraction, but it may also reflect having an unsafe environment that would rather accept an affinity than an identity (Guittar, 2014).

From a developmental perspective, our review of the literature showed that during adolescence sexual interests,

<sup>1</sup>a term that refers to both sociocultural and innate/evolved aspects of women, men, and gender/sex-diverse people” (van Anders, 2015, p. 1179).



behaviors, and identities are in development and may not be fixed or discrete. Generally, sexuality was thought to be more fluid during adolescence than during adulthood (Katz-Wise & Todd, 2022). This may be because sexually and gender diverse adolescents usually have limited partnered sexual experience, fewer opportunities to date, and might not (yet) affiliate with an LGBTQ+ community.

Finally, considering sexual orientation as fixed and unidimensional was based on the assumption that all adolescents experience sexual and/or romantic attraction, and that sexuality has the same meaning to all adolescents. In contrast, for some adolescents sexual orientation might relate most to their experienced sexual attraction toward others by gender or gender expression (i.e., finding women, a feminine presentation, or specific body parts attractive). Others might find characteristics important that are unrelated to gender, or they might not experience attraction at all (Hammack et al., 2009; van Anders, 2015). Although most researchers now acknowledge that sexual orientation is multidimensional, one could also wonder whether there is even one underlying “sexual orientation.”

### ***Sexual Identity Formation: Developmental Milestones***

Notwithstanding fluidity of sexual orientation dimensions, in research among adolescents it was also recognized that they have great autonomy in whether, when, and how they wish to share or disclose their sexual orientation (Hammack et al., 2009; Rosario et al., 2001, 2006, 2011). Importantly, even with unprecedented high levels of social acceptance of sexual and gender diversity (e.g., positive attitudes, protective laws, and policies), it was acknowledged that when growing up in a hetero/cisnormative society, “coming out” was still a crucial milestone<sup>2</sup> for many (Bishop et al., 2020, 2022; Fish & Russell, 2022; Mallory et al., 2021).

Contemporary cohorts of sexually diverse adolescents approached these milestones differently than before. For example, older generations often delayed sharing their minority sexual identity with others until they had moved out of their family home, or even after their first same-gender/sex relationship (Bishop et al., 2020; Dunlap, 2016), while contemporary cohorts were much younger when they first disclosed their sexual orientation to others and often did so in their early or mid-teens (Russell & Fish, 2016). In sum, research showed that there were generational shifts in how adolescents approached milestones, and that these milestones should be considered as relevant for adolescent’s development (Bishop et al., 2022; Katz-Wise et al., 2017; Mallory et al., 2021), while acknowledging that a general order or “end-point” should not be presumed.

### ***Who Counts as Part of the Sexually Diverse Population?***

The sexually diverse population seems to have grown in size. For example, there was an increase in sexual experience with same-gender/sex partners among adults across birth cohorts in the United States (Mishel et al., 2020). Further, a study among

adults in England showed that between 2009 and 2017 there was a decrease in the proportion of individuals identifying as heterosexual, and an increase in the proportion of individuals identifying as gay/lesbian or bisexual (MacCarthy et al., 2020). Interestingly, these studies used different measures to identify “sexual minority” groups: One focused on sexual behavior and the other on identity. This raises the question: who counts? (Browne, 2016; Ruberg & Ruelos, 2020). Findings suggest that when given the choice, many sexually diverse individuals endorsed multiple identities and identities not listed. Furthermore, identity labels and the meaning of these identity labels might be fluid (Ruberg & Ruelos, 2020). This makes it impossible to identify one sexually diverse population. Furthermore, the size of disparities was shown to partly depend on whether measures of identity, sexual attraction, or behavior were used as the indicator of sexual orientation (Bostwick et al., 2010; Fish et al., 2018; McCabe et al., 2009). Altogether, research from the past decades suggested that when adolescents and their experiences are misrepresented, this might result in inaccurate conclusions and continued stigma (Galupo et al., 2016, 2017; Snapp et al., 2016).

### ***Conceptualizing Gender Identity/Expression***

#### ***From Gender Dysphoria to Gender Diversity***

Parallel to developments in the classification of gender dysphoria in the DSM (Beek, Cohen-Kettenis, Kreukels, et al., 2016), the diagnostic category “gender identity disorder of children” was replaced with “gender incongruence of childhood” in the 11<sup>th</sup> edition of the International Classification of Diseases and Related Health Problems (ICD). Moreover, the ICD moved this diagnosis out of the Mental and Behavioral Disorders chapter into the Conditions Related to Sexual Health chapter. Although the World Health Organization and experts in the field have argued that keeping the diagnosis in the ICD-11, as opposed to removing it altogether, would ensure access to gender-affirmative care (Beek et al., 2017) various criticisms were voiced. Critics argued that during childhood, gender diverse children do not (yet) require a diagnosis, and would be better helped by support for social transition (Winter et al., 2019). Further, being diagnosed with gender incongruence still signals that the child has a problem, which perpetuates stigma (Cabral et al., 2016; Winter et al., 2019).

Despite “gender incongruence” still having a place in the DSM and ICD, many child and adolescent researchers have expanded their perspective on gender and have come to consider gender diversity on a continuum (deMayo et al., 2022). In the early 2000s, researchers shifted from focusing solely on binary gender identity labels (i.e., boy vs. girl) to include self-perceived typicality of one’s gender, experiencing pressure from others to conform to gender stereotypes, or the idea that one’s own gender is superior to another gender (Egan & Perry, 2001). During the same period, research started to focus on “gender nonconformity,” that is a gender expression that does not align with societal expectations based on the assigned sex at birth (deMayo et al., 2022; Martin-Storey & Baams, 2019). Gender nonconformity was found to be associated with stigma, victimization, and poor mental health among

<sup>2</sup>Although the milestone of first disclosing one’s sexual orientation to important others is most commonly researched, other milestones include: first awareness of sexual orientation, first crush, first same-gender/sex relationship, or first sexual experience (Bishop et al., 2020; De Graaf & Picavet, 2018; Dunlap, 2016).

sexually diverse adolescents (Baams et al., 2013; Li et al., 2016; Martin-Storey & Baams, 2019; Russell et al., 2011), as well as among heterosexual adolescents (Bos & Sandfort, 2014; Roberts et al., 2013; van Beusekom et al., 2016). Although this work examined diversity in gender expression without assuming an underlying disorder, a central criticism is that it still pathologized gender nonconformity as if it was a part of an individual's *being* that deviated from their assigned sex at birth. More recently, it was emphasized that research should focus on the systems that exclude and oppress certain genders and gender expressions, while it privileges others, instead of focusing on the individual (Bloom et al., 2021; Rimes et al., 2017).

### **Non-Binary and Genderqueer Adolescents**

The last decade has seen an increase in studies that acknowledge non-binary and genderqueer identities (Schudson & Morgenroth, 2022). Although large-scale, population-based studies rarely included options for reporting a non-binary gender identity, experiences of non-binary and genderqueer adolescents were found to be distinct from cisgender and binary transgender adolescents (Bradford et al., 2019; Tatum et al., 2020). The 2019 Minnesota Student Survey showed that non-binary adolescents reported more depressive symptoms than cisgender and trans feminine adolescents (Gower et al., 2022). Moreover, while binary transgender and cisgender children and adolescents showed consistency of gender identity and expression over time (Hässler et al., 2022; Olson et al., 2022), non-binary and genderqueer adolescents may express more fluidity of their gender (Doyle, 2022; Tatum et al., 2020). Unfortunately, many of the studies among sexually and gender diverse adolescents only included binary options for gender and sex, which excluded genderqueer and non-binary adolescents, and misrepresented the continuums and multidimensionality of gender and sex (Hyde et al., 2019). Taken together, research highlighted non-binary and genderqueer adolescents' unique experiences and the importance of making our research inclusive to this population, while underlining the lack of attention for gender diversity.

### **Need for Gender-Affirming Care**

Gender-affirming care was shown to effectively reduce mental health symptoms among gender diverse adolescents (Achille et al., 2020; Costa et al., 2015; de Vries et al., 2014; van der Miesen et al., 2020). Unfortunately, however, access to such care still remained largely dependent on intersecting identities (e.g., race/ethnicity), geographical location (e.g., access differs by state and country), and the willingness of parents to support their child's identity and access to care (Gill-Peterson, 2018; Priest, 2019; Toomey, 2021). For many adolescents, access to gender-affirming care still required a diagnosis of gender dysphoria, which medicalized and pathologized their gender identity and expression (Suess Schwend, 2020). In addition, adolescents experienced barriers to finding clinicians who were able and willing to affirm their identity and support social transition or medical interventions (de Lange, van Bergen, et al., 2022; Toomey, 2021; Weiselberg et al., 2019).

During the past years, many scholars have monitored increasing rates of referrals to gender-affirming care (Kaltiala

et al., 2019; VanderLaan et al., 2014; Wood et al., 2013). A study among different cohorts from the US indeed confirmed a steady increase of transgender adults in the US population. There seemed to be a "tipping point" around 1984: Individuals born after this year were more likely to identify as transgender or gender nonconforming than individuals from earlier birth cohorts (Lagos, 2022). Some argued that this was due to improved social acceptance of gender diversity, greater public visibility of transgender individuals, better accessibility of gender-affirming care, and changes in the laws and insurance policies (Goodman et al., 2019; Wiepjes et al., 2018). Others argued that the composition of the "transgender population" changed: Transgender individuals sought gender-affirming care at younger ages than before (Goodman et al., 2019; Wiepjes et al., 2018), and an increased proportion of non-binary individuals sought gender-affirming care (Cocchetti et al., 2020). Still, many children and adolescents do not make their way to gender-affirming care. Such care may not be available or accessible to them, and their environment may disaffirm their gender.

### **Considering Intersections between Sexual and Gender Diversity**

Although sexuality and gender are two separate concepts with their own history and operationalizations, research showed various associations between them. For example, sexually diverse adolescents were more likely to have a gender expression that differed from societal expectations based on their sex assigned at birth (Rieger et al., 2020; Xu et al., 2021). Sexuality and gender also played unique and additive roles in, for example, peer relationships. For example, in a study among Dutch adolescents (Bos & Sandfort, 2014) gender nonconformity magnified the association between same-sex attraction and poor peer relationships. Furthermore, intersections between sexuality and gender were informative in research on mental health (Park et al., 2021). A study among Colorado high school students found that sexually and gender diverse adolescents were most likely to engage in non-suicidal self-injury, while heterosexual gender diverse and cisgender sexually diverse adolescents had a much lower likelihood (Speer et al., 2022). Although it remains important to conceptualize and operationalize sexual orientation and gender identity/expression separately, our findings also highlighted the relevance of considering intersections between them.

### **Lack of Diversity in SOGIE-Related Studies**

Despite the developments in research on sexually and gender diverse adolescent populations, research still includes mostly homogeneous samples. For example, many studies in adolescent populations assumed that their samples were heterosexual, and cisgender, even when they assessed sexuality and gender. A study of published research in five scientific sexuality journals found that, between 2015 and 2019, only 6% of the studies included gender diverse samples. Out of the studies that included only women as participants, 9.5% focused on sexually diverse women, and out of the studies that included only men as participants, 37.5% focused on sexually diverse

men (Klein et al., 2021). Another analysis of published research in two relationship journals found that between 2002 and 2021, 85.8% of studies did not acknowledge sexually and gender diverse relationships (Pollitt et al., 2022). In addition, when studies in sexuality journals did include sexually and gender diverse individuals, samples were most often drawn from the US, English-speaking countries, or Europe, and often from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) countries (Klein et al., 2021). Research also suggested that sexually and gender diverse adolescents experienced even more barriers to being represented in scientific research than adults (Snapp et al., 2016). For example, an analysis of 798 LGBTQ research studies conducted in China showed that only a small proportion included adolescent participants (Lin et al., 2022).

Regarding studies with a focus on sexuality and gender in adolescence, most were conducted in majority White samples. Researchers argued that the homogeneity of samples limited our understanding of sexuality and gender, and disregarded the role of intersecting identities and systems of oppression (e.g., racism) that played a role in adolescents' experiences with, and development of sexuality and gender (Bishop et al., 2020; Mallory & Russell, 2021; Pollitt et al., 2018). Notably, however, our review of the literature was also limited by the lack of studies from non-WEIRD countries and samples. Although we attempted to present research from various regions, there was a lack of research on sexuality and gender among adolescents from the Global South, and many of the individual studies were also limited in diversity.

A final consideration on geography is that study findings on SOGIE greatly differed based on urbanicity. For example, a study among middle and high school students in California showed that sexually and gender diverse adolescents living in rural areas had more negative school experiences and worse health outcomes than adolescents living in urban areas (Choi et al., 2017). Further, for sexually and gender diverse adolescents living in rural areas access to community centers (Martos et al., 2018; Rand & Pacey, 2021) and affirmative health care was limited (Gandy et al., 2021; Renner et al., 2021). When sexually and gender diverse adolescents living in rural areas feel unsafe to disclose their sexuality or gender, this may also impact how they answer questions about SOGIE in research, and thus the rurality or urbanicity of a sample should be considered.

### **Current Operationalizations of SOGIE and Prevalence Estimates**

Given the numerous insights from the past decades about the complexity and multidimensionality of sexuality and gender, the question remains what the current "standard" is for conceptualizing and operationalizing SOGIE. Have researchers reached consensus about the dimensions of sexuality and gender that should be assessed? And how do these dimensions relate to proportions of sexually and gender diverse adolescents in a given study? Addressing these questions, we present large, representative research projects conducted in the past five years (2018–2022), and describe how SOGIE was assessed in each study as well as the proportion of sexually and gender

diverse youth in a given sample (see Table 1). The studies represent data from the United States ( $k = 3$ , including  $k = 2$  regional), United Kingdom ( $k = 1$  national), New Zealand ( $k = 1$  national), and the European Health Behaviour in School-Aged Children study with data from eleven European countries ( $k = 1$ , including  $k = 7$  regional).

The studies showed large variation in conceptualization and operationalization of SOGIE among adolescents. Although studies were conducted with vastly different research questions, target populations, and in diverse cultural settings, the choice of measures was mostly unidimensional, focusing on one dimension of gender and/or sexuality.

Regarding the composition of sexually diverse populations, two results stood out. First, these populations consisted for the largest part of adolescents who were unsure of their identity. These adolescents were, in the past, sometimes grouped together with questioning adolescents and assumed to still be "on track" to a sexual identity. However, reporting being unsure of their identity might also reflect limited response options when adolescents have multiple identities and they can only pick one.

Second, the group of sexually diverse adolescents was smaller when using measures of experiences of being in love or sexual behaviors. For example, studies that asked with whom adolescents had been in love or had sexual contacts with, had smaller proportions of sexually diverse adolescents. Relatively inexperienced adolescents (for having been in love: one-third of all adolescents) were, therefore, not represented.

Further, although the recognized importance of gender diversity for adolescents has been evident since the early 2000s (deMayo et al., 2022), not all studies included measures of non-binary identities and experiences, or did not report percentages of sexually and gender diverse adolescents based on these measures. Several studies that asked about gender/sex did not specify to participants whether the question was about sex assigned at birth or current gender, making it impossible to draw inferences about participants' gender identity and expression. Overall, our review of the literature showed some serious gaps and limitations. We provide several recommendations to better reflect sexually and gender diverse adolescents' identities and experiences in research.

### **Recommendations for Future Research**

In our literature review, it became clear that the past decades of adolescent research have shown substantial advances in our approach to assessing SOGIE. It is more commonly acknowledged that asking inclusive questions about sexual orientation and gender enables sexually and gender diverse individuals to participate in research, and thus, in debates on healthcare, access, and equity (Klein et al., 2021; Roberts & Fantz, 2014; Sell, 2017; Thomson & Katikireddi, 2019). Yet, it remains unclear *which* dimensions of sexuality and gender should be assessed and how to identify diverse groups and to provide adolescents with the opportunity to report about their identities and experiences. Is this the right time to move towards one uniform conceptualization and operationalization of SOGIE, and, thus, to identify one sexually and gender diverse population?

We argue that this would be misguided because there is no theoretical or empirical reason to believe that the population of sexually or gender diverse individuals is homogeneous, fixed, and discrete. Instead, sexually and gender diverse populations are heterogeneous across dimensions of attraction, behavior/expression, and identity, and across time and contexts. This may motivate researchers to add multiple items measuring sexuality and gender in their research. At the same time, researchers are also often encouraged to employ data minimization and limit the amount of data collection. Put differently: “Curiosity is not a valid reason to ask about a person’s gender identity, body, or sexual activity.” (Jolly et al., 2021, p. 893). Moreover, in the current EU General Data Protection Regulation (GDPR) a person’s sex life or sexual orientation is considered a “special category of personal data.” Hence, posing questions about sexuality and gender to anyone, let alone minors, requires additional protective measures. Thus, it is now more important than ever to consider what questions to ask and why. Below, we provide recommendations for how researchers can balance conceptual multidimensionality with practical and ethical limitations. We provide suggestions for deciding about the most relevant dimensions to assess across research purposes and age groups, and how these can be practically combined.

### **SOGIE Dimensions Across Contexts**

The most comprehensive strategy to identify sexually and gender diverse adolescents is to assess sexual identity, romantic and sexual attraction, romantic and sexual partners (i.e., dimensions of sexual orientation), gender identity, sex assigned at birth, gender expression, and organ inventories (i.e., dimensions of gender identity/expression). This would also help to account for the considerable overlap between dimensions of sexuality and gender and, thus, for shared variance between them (Fish & Krueger, 2020). However, a more complex consideration is how these measures can be practically combined. We cannot simply collapse different dimensions to identify one sexually diverse or gender diverse population, because 1) these dimensions do not necessarily align in the same person, 2) such an approach does not allow for fluidity over time or context, and 3) each dimension plays a unique role in adolescents’ development and the emergence of, for example, health disparities. Therefore, one approach can be to create a dummy variable representing *different* intersections (e.g., attraction + identity). Another approach is to add multiple dimensions of sexuality and gender into one model and compare the strength of associations with an outcome. Both strategies require a large sample, sufficient variability across dimensions of sexuality and gender, and hypotheses about mechanisms.

Unfortunately, researchers cannot always assess multiple dimensions of sexuality and gender. A third strategy is therefore to select the dimension of sexuality and gender that is most informative for one’s research question. When focusing on stigma related to sexual orientation, for example, sexual identity seems the most distinguishable dimension (Fish & Krueger, 2020). However, researchers should consider that sexual identity is not a visible characteristic and stigma will therefore generally be directed at the

expression of sexuality and/or gender. Researchers should therefore be aware of the limitations when using a measure of identity as a proxy of a visible characteristic. Further, assessment of fluid and complex individual experiences across time, genders, and relationships, regardless of their alignment with behavior and self-identification, might best be captured with measures of attraction (National Academies of Sciences, Engineering & Medicine, 2022). However, ultimately, researchers should consider how to directly assess what they are interested in. For example, assigned sex at birth is often included in studies as a proxy of gender socialization. Yet in those cases, it would be more informative and precise to include a measure of gender socialization instead of assigned sex at birth. Importantly, however, if we always limit the inclusion of SOGIE measures to what we assume will be “significant predictors,” we risk replicating biases and assumptions and may fail to generate new knowledge about sexuality and gender in adolescence.

Another consideration is the study design. Most SOGIE-related studies use self-report measures asking about an adolescent’s internal sense of identity or individual experiences. However, how adolescents are perceived by *others* can be equally important. For example, adolescents may experience bullying when peers assume they are sexually or gender diverse, regardless of whether this is the case. Further, adolescents may have a non-binary gender identity, without this being visible to others. Especially in studies about peer and parent relationships, measures of perceived (or attributional, or socially assigned) SOGIE may be relevant to ask as experienced by other informants such as peers or teachers. Last, although *experiences with gender* are not considered part of gender identity/expression in our review of the literature, they are crucial for adolescent’s development. We therefore argue that to build a comprehensive understanding of gender diverse adolescents’ experiences, we should consider how adolescents make meaning of their gender in the context of interpersonal and intrapersonal gender dysphoria (Toomey, 2021), gender euphoria, and community (Austin et al., 2022; Beischel et al., 2022; Doyle, 2022; Saewyc et al., 2022).

Last, given developmental differences among adolescents, participants’ age is also relevant in deciding about SOGIE dimensions. In children and early adolescents who have not experienced sexual or romantic attraction, for example, it may be less informative to ask about identity labels, being in love, or sexual behaviors. For example, our review showed that a large percentage of adolescents had never been in love (35.7% in 12–17 year-olds). Reports from adolescents who are relatively inexperienced may therefore need to be analyzed separately from those who have experienced intimate relationships. Further, a growing group of adolescents identifies as asexual or aromantic (Bogaert, 2006; DeLuzio Chasin, 2011; Yule et al., 2015) and including their experiences in questions about identity, attraction, and behavior is key to accurately reflect all adolescents’ experiences.

### **Questions to Ask**

In addition to considerations about the dimensions that will be captured in a given study, decisions need to be made about which questions are asked and how they are formulated.

Recently, the National Academies of Sciences published guiding principles and recommendations for data collection on sex, gender, and sexual orientation (National Academies of Sciences, Engineering & Medicine, 2022): 1) inclusiveness – seeing your identities and experiences represented in research or data collection. 2) precision – using terminology that reflects the complex and multidimensional nature of sex, gender, and sexual orientation. 3) autonomy – allowing people to self-identify. 4) parsimony – collecting only data that are necessary; and 5) privacy – making research useful to participants, while respecting privacy and confidentiality (National Academies of Sciences, Engineering & Medicine, 2022). In keeping with these guiding principles, the National Academies of Sciences have also published several recommendations on how to assess sex, gender, and sexual orientation. We encourage researchers to consider these recommendations and the context of their proposed research, especially when this is not based in the US or not conducted in the English language. Moreover, we point to the importance of using destigmatizing language, such as “sexually and gender diverse” instead of “sexual and gender minority.”

### **Considerations Regarding Parental Versus Adolescent Consent**

An important consideration for research among sexually and gender diverse adolescents is whether parental consent should be asked. Asking for parental consent might directly or indirectly harm minors by “outing” them to their parents (American Psychological Association, 2018; Fisher & Mustanski, 2014; Macapagal et al., 2017). Moreover, requiring parental consent can result in a biased sample of participants who are willing to share their sexual orientation or gender identity/expression with their parents (Macapagal et al., 2017; Mustanski, 2011; Nelson, Carey, et al., 2019). IRBs or ethics committees often have the authority to provide a waiver of parental consent for minor participation in research if it potentially puts the minor at risk. However, such guidelines vary by university and jurisdiction and should therefore be considered early on in the design of the study.

In lieu of parental consent, informed consent from adolescent participants themselves is vital. In a US-based study, researchers applied a procedure whereby adolescent participants were required to correctly answer several questions about the study design before they were allowed to participate (Nelson, Perry, et al., 2019). A similar procedure was applied in a study among Dutch sexually and gender diverse participants aged 14 to 18 years old; only 6% of adolescents were unable to correctly answer the questions and deemed ineligible to participate (Kiekens et al., 2023). We encourage researchers to consider the ethical implications of including or excluding measures of SOGIE in their studies with adolescents, and to ensure privacy and confidentiality of all participants.

### **Sexuality and Gender in Clinical Practice**

In addition to the role of sexuality and gender in research, health professionals or clinicians may also want to know about their patient’s or client’s sexuality and gender. For example, in clinical practice asking about sexual orientation and gender identity could be the start of a conversation about social relationships,

home environment, school experiences, or health behavior. Moreover, it enables clinicians to interact with youth in a respectful and affirming way (Chen et al., 2016). All these aspects of the clinician-patient relationship improve healthcare (Goldhammer et al., 2022; Keuroghlian, 2021). However, a clinician must also consider the safety of their patients and ensure that information about adolescents’ sexual orientation (e.g., identity, attraction, behavior) or gender identity/expression (e.g., affirmed name, pronouns) is not accessible to parents or other caregivers (Goldhammer et al., 2022; Jolly et al., 2021). Further, although the use of affirmed pronouns and names is important in communication with a patient (Dunne et al., 2017; Sinclair-Palm & Chokly, 2022), a clinician may opt to use an adolescent’s deadname in the presence of their parents, and should prepare an adolescent for such “code switching” strategies. Further, when information about body parts is relevant, clinicians can ask what names the patient uses for their body parts (Hostetter et al., 2022). This approach can also be incorporated into research designs, by first asking participants what names they use for their body parts and then using the same terminology in the rest of the survey.

### **Reflection on Limitations**

A review article is always biased by the limitations in the published literature. For example, because our understanding of sexually and gender diverse adolescent lives is limited by a focus on mental health and health behaviors in research, our understanding of positive experiences and resilience is limited. Furthermore, given the fast-paced developments in how adolescents define and give meaning to their identities and experiences, research struggles to keep up. This makes it even more important to ask adolescents to explain, describe, and define their own experiences and identities as much as possible – while acknowledging that this is often difficult in population-based research.

Although this review explicitly focused on experiences of sexually and gender diverse adolescents, studies should also consider the experiences and identities of heterosexual, cisgender adolescents. Our assumption is often that the “minority experience” must be different from how the “majority” develops, yet without empirical research on potential differences *and* similarities we cannot draw such conclusions. This is not to say that we need a “comparison group” to compare sexually and gender diverse adolescents to; rather, as researchers we should be aware of our own assumptions about differences in adolescent development across sexual orientation and gender identity/expression-groups.

### **Conclusion**

Overall, there is ample research on sexuality and gender among adolescents. However, our understanding of these concepts and the health and wellbeing of sexually and gender diverse adolescents is limited by the questions we ask, how flexible we allow our surveys and interviews to be, and whether we enable adolescents to report on how they experience sexuality and gender. It is time to take a stand for sexually and gender diverse adolescents’ participation and their accurate

representation in research. This requires mindful, reasoned and transparent choices of SOGIE measures, but also an awareness of how researchers conceptualize sexuality and gender and with what purpose they include SOGIE measures. Ultimately, if our goal is to make our research equitable and to better understand and support sexually and gender diverse adolescents, we must consider how we set up our studies in this light.

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