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# The Development of the Positive Sexuality in Adolescence Scale (PSAS)

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## ABSTRACT

The aim of the present investigation was to develop a comprehensive tool to measure positive sexuality among adolescents. We first conducted an extensive literature review to develop the Positive Sexuality in Adolescence Scale (PSAS). We also conducted focus group interviews with adolescents ( $N = 14$ ) to explore their understanding of positive sexuality and to discuss the proposed scale items. In two survey studies ( $N_{total} = 890$ ), we examined the psychometric properties of the PSAS. In Study 1 ( $N = 211$ ;  $M_{age} = 15.5$ , 55.5% girls), an exploratory factor analysis yielded five factors (e.g., positive approach to sexual relationships) which comprised 22 items. Convergent validity was also established in Study 1. In Study 2 ( $N = 679$ ;  $M_{age} = 15.32$ , 49% girls), a confirmatory factor analysis confirmed the factor structure. Results of Study 2 also supported the internal consistency and a partial measurement invariance for boys and girls. The PSAS is a useful tool for assessing the multifaceted nature of positive sexuality among adolescents for both boys and girls. We conclude by outlining future research directions on adolescent positivity sexuality using the PSAS.

## Introduction

During adolescence, sexuality development is one of the most significant developmental tasks (Fortenberry, 2013; O'Sullivan & Thompson, 2014). Previous research has frequently explored this developmental process from a risk perspective and has been skewed toward reducing negative sexual outcomes, such as sexually transmitted infections (STIs) (Harden, 2014). Since 2000, sexual health scholars have called for the adoption of a positive perspective on adolescents' sexuality development (e.g., McKee et al., 2010; Russell, 2005). Specifically, these scholars urge for conceptualizations and research in which adolescents' sexuality development is considered developmentally normative (e.g., Tolman & McClelland, 2011) and possibly beneficial for cognitive, mental, emotional, and social functioning (Harden, 2014; Impett et al., 2013).

Accordingly, scholars have conceptualized positive sexuality as a multifaceted construct, representing positive sexual expressions such as a respectful approach to sexuality and sexual relationships (World Health Organization, 2006) and the engagement in consensual sexual interactions (Ward et al., 2006). These conceptualizations have previously been discussed within the context of adolescents' sexuality development (e.g., Harden, 2014; Russell, 2005). Building on existing conceptualizations, sexual health scholars have developed scales to operationalize positive sexuality indicators among adolescents and adults, such as the recent Sexual and Reproductive Empowerment Scale (Upadhyay et al., 2021). However, existing shortcomings within the field introduce the need for a novel, comprehensive scale which assesses the multidimensionality of positive sexuality and accounts for the unique developmental context of both adolescent boys and

girls (Fortenberry, 2016; Harden, 2014). As such, the current study aimed to create a valid and reliable tool to assess positive sexuality among adolescents.

## Adolescents' Positive Sexuality Development

As children mature and reach adolescence (e.g., between 10–11 years old for girls and 11–12 years old for boys), several cognitive, biological, and psychosocial changes stimulate adolescents in developing their sexuality (Fortenberry, 2013; Kar et al., 2015; O'Sullivan & Thompson, 2014). Particularly, elevated hormonal levels trigger the development of sex characteristics and, simultaneously, spark adolescents' sexual interest and their construction of the sexual self (Ponton & Judice, 2004). Behavioral responses to such changes within a private and personal context include the creation of sexual fantasies and the engagement in self-masturbation (Best & Fortenberry, 2013). Moreover, talking about sex with peers (Ragsdale et al., 2014) and emerging romantic relationships are significant building blocks for adolescents' sexual socialization. Romantic relationships often create a context for the discovery of sexual behaviors (e.g., kissing one's crush) and expressions of romantic feelings (Salerno et al., 2015). Adolescents' sexuality development is further defined against the backdrop of their culture (Kar et al., 2015). Specifically, in European countries adolescents' sexual behavior is viewed as a normal part of the developmental process and this particular topic is discussed openly and progressively (Brugman et al., 2010; Schalet, 2010). In non-European countries, such as the United States, a less progressive approach is often present (Brugman et al., 2010; Schalet, 2010) in which adolescents' capabilities to manage the riskiness of sex are underestimated and adolescents' sexual

activities are, at least in some communities, considered morally wrong (Harden, 2014). This risk perspective has fueled a great body of research exploring the negative (health-related) consequences of adolescents' sexual behaviors, such as STI contractions (e.g., Finer & Henshaw, 2006). Although the focus of this research is justified and highly relevant, it ignores the premise that adolescents' sexuality has a broader impact and can even hold positive implications for adolescents' health (Vasilenko et al., 2012).

As such, for the past two decades, sexual health scholars have advocated for the additional adoption of a positive perspective when exploring adolescents' sexuality development (McGuire, 2003). Scholars acknowledge the importance of exploring sexuality as an integral part of adolescents' identity formation (Impett et al., 2013; Williams et al., 2015), alongside the examination of sexual behaviors as potential risk for one's health (e.g., early pregnancy). From this perspective, adolescents' sexuality development is conceptualized as expected and normative (Tolman & McClelland, 2011), with an additional focus on beneficial well-being outcomes (e.g., happiness) of positive sexuality development (Impett et al., 2013). Attention is paid to the emotional, cognitive, and relational elements of adolescents' experiences as critical precursors of a healthy sexuality development (Harden, 2014).

Within the current literature, several conceptualizations of positive sexuality have been developed. The most comprehensive conceptualization is from the World Health Organization, which defined sexual health as "a state of physical, emotional, mental, and social well-being related to sexuality; it is not merely the absence of disease, dysfunction, or information. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination, and violence. For sexual health to be maintained, the sexual rights of all persons must be respected, protected, and fulfilled." (World Health Organization, 2006, p. 5).

Several elements of the WHO definition (i.e., well-being, respectful approach, and pleasurable and safe sexual experiences) re-occur in (earlier) sexual health scholars' approaches toward positive sexuality (e.g., McKee et al., 2010). For instance, having *pleasurable* sexual experiences is understood within the field as sexual satisfaction, which can be defined as "the degree to which an individual is satisfied or happy with the sexual aspect of his or her relationship" (Sprecher et al., 2004, p. 236). Mental *well-being related to sexuality* can be interpreted as sexual self-esteem (Doyle Zeanah & Schwarz, 1996) and sexual self-consciousness (Salisbury, 2004). These two concepts, respectively, refer to one's subjective appraisal of (Doyle Zeanah & Schwarz, 1996) and one's tendency to think and reflect about one's sexual thoughts, feelings, and behaviors (Salisbury, 2004). Further, WHO's *respectful approach to sexuality and sexual relationships* is reflected in Williams et al.'s (2015) emphasis on recognizing that each person's sexuality is unique and multifaceted. In this view, Williams et al. (2015) elevate the conceptualization of positive sexuality by recognizing that one's own sexuality can be unique and multifaceted, but also that others' sexualities can be unique and multifaceted and can, perhaps, differ from one's own sexual expressions. In this view, they highlight how a respectful and progressive

approach to others' sexualities is key in the conceptualization of positive sexuality. Moreover, sexual health scholars argue in line with the WHO definition that "*safe* sexual experiences" can only occur when an open, inclusive and honest communication is present (Diamond & Savin-Williams, 2009; Harden, 2014; LaFrance et al., 2012; McKee et al., 2010; Tolman & McClelland, 2011; Williams et al., 2015) and consensual, mutually pleasurable and non-exploitative sexual interactions take place (Fortenberry, 2016; Lamb, 2010; McKee et al., 2010; Ward et al., 2006).

Other elements that are also touched upon in WHO's definition of sexual health include sexual subjectivity and sexual assertiveness. Sexual subjectivity conveys the "capacity to be aware of one's sexual feelings, to enjoy sexual desire and pleasure, to conceive of oneself as the subject (rather than the object) of one's sexual activities, and to experience a certain amount of control in relationships" (Schalet, 2010, p. 305). This capacity aligns strongly with the concept of sexual assertiveness. Sexual assertiveness especially focuses on one's perceived agency to initiate and communicate about sex, but also to refuse unwanted sex (Loshek & Terrell, 2015). In line with sexual health scholars' reasoning on agency in sexual experiences, McKee et al. (2010) further added the development of agency and the related coping strategies among adolescents and children. Such coping strategies are significant for the formation of resilience against challenging sexuality-related experiences. As such, bad relational or sexual experiences, such as a breakup, can be seen as opportunities for learning and emotional growth, rather than being destructive for one's sexuality and overall well-being.

After canvassing the literature, positive sexuality emerges as a multidimensional construct. At the same time, most studies have rarely addressed positive sexuality from such a multidimensional perspective. The majority of studies have focused on one or a maximum of three components (e.g., Ménard & Offman, 2009). Moreover, conceptual precision is sometimes lacking as some components seem highly similar (e.g., sexual subjectivity and sexual assertiveness), yet it remains to be determined whether they are part of the same dimension of positive sexuality or need to be differentiated from each other. Such knowledge would help to reduce fragmentation in the literature as scholars are now sometimes left wondering how to interpret findings hinting at the same phenomena yet using different labels. For example, Rostosky et al. (2008) noted that sexual self-concept, which generally includes one's evaluation in terms of their sexuality (Snell, 1998; Snell et al., 1993) can be assessed by measuring one's sexual subjectivity. This highlights the particular confusion in the field as Snell's sexual self-concept refers to several elements including sexual self-esteem and sexual self-consciousness, while sexual subjectivity mostly focuses on sexual assertiveness. This fragmentation can further be understood when reviewing the existing measurement tools in the field.

### **Existing Positive Sexuality Measurement Tools**

Within the literature, existing measurement tools have been created and developed to measure (several) indicators of positive sexuality. An overview of the most significant tools,

together with the measured general construct and the sample among which this tool was validated can be found in [Table 1](#). One of the most comprehensive measurement tools in the field is the multidimensional sexual self-concept questionnaire (MSSCQ) (Snell, 1998; Snell et al., 1993). This scale operationalizes several positive and negative components of late adolescents' and young adults' sexual self-concept. The MSSCQ includes one's sexual self-esteem (i.e., positive evaluation of one's sexuality), sexual self-consciousness (e.g., tendency to reflect about one's sexuality), sexual assertiveness (i.e., the

tendency to be assertive about sexuality), and sexual satisfaction (i.e., the tendency to be satisfied with one's sexual behaviors). The MSSCQ has additionally been validated among early adolescent girls by O'Sullivan and Thompson (2014). It should be noted that, although the MSSCQ is considered the most comprehensive, it does not address positive sexuality behaviors, such as the engagement in safe sexual behaviors. Another comprehensive and frequently cited scale, which was independently developed from the MSSCQ but touches upon some concepts of the sexual self-concept, is the Female Sexual

**Table 1.** Overview of existing positive sexuality measurement tools.

Existing measurement tools	Authors	Sample	Specifications	Shortcomings in terms of adolescents' positive sexuality measurement
1. <b>The Multidimensional Sexual Self-Concept Questionnaire</b>	Snell (1993) Snell (1998)	Young adults Late adolescents and young adults	Assesses positive and negative aspects of the sexual self-concept	<ul style="list-style-type: none"> <li>Only validated among late adolescents and young adults</li> </ul>
2. Sexual Self-Concept Inventory for early adolescent girls	O' Sullivan et al. (2006)	Early adolescent girls	Assesses positive and negative aspects of the sexual self-concept	<ul style="list-style-type: none"> <li>Only validated among early adolescent girls</li> </ul>
3. <b>The Female Sexual Subjectivity Inventory</b>	Horne and Zimmer-Gembeck (2006)	Late adolescents and young adults	Assess aspects of female sexual subjectivity	<ul style="list-style-type: none"> <li>A priori assessment of different subscales, conducted a separate exploratory factor analysis for each subscale</li> <li>Only validated among female sample</li> </ul>
4. <b>Men's Sexual Subjectivity Inventory</b>	Zimmer-Gembeck and French (2016)	Young Adults	Assess aspects of male sexual subjectivity	<ul style="list-style-type: none"> <li>Although additional final items were not gender-specific, additional items only validated among men</li> <li>Only validated among young adults</li> </ul>
5. Attitudes about Homosexuality Scale	Adolfson et al. (2010)	Adults	Assess attitudes toward non-heterosexuals	<ul style="list-style-type: none"> <li>Only validated among adults</li> </ul>
6. Lesbian, Gay, and Bisexual Knowledge and Attitudes Scale for Heterosexuals	Dillon & Worthington (2010)	Adults	Assess attitudes toward non-heterosexuals	<ul style="list-style-type: none"> <li>Only validated among adults</li> </ul>
7. Attitudes toward Lesbians and Gay Men- Revised	Herek (1994)	Adults	Assess attitudes toward non-heterosexuals	<ul style="list-style-type: none"> <li>Only validated among adults</li> </ul>
8. Modern Homonegativity Scale	Morrison & Morrison (2002)	Adults	Assess negative attitudes toward non-heterosexuals	<ul style="list-style-type: none"> <li>Only validated among adults</li> </ul>
9. Sexual Communication Self-Efficacy Scale	Quinn-Nilas et al. (2016)	Adolescents	Assess communication about different sexual topics with partner	/
10. Parent-Adolescent Communication Scale	Sales et al. (2008)	Adolescent girls	Assess communication about different sexual topics with parents	<ul style="list-style-type: none"> <li>Only validated among adolescent girls</li> </ul>
11. Partner-Communication Scale	Milhausen et al. (2011)	Assess communication about different sexual topics with partner	Assess communication about different sexual topics with parents	<ul style="list-style-type: none"> <li>Only validated among adolescent girls</li> </ul>
12. Sexual and Reproductive Empowerment Scale	Upadhyay et al. (2020)	Late adolescents and young adults	Assess one's comfort to talk about sexual topics with one's partner, sexual safety and sexual pleasure	<ul style="list-style-type: none"> <li>Only validated among late adolescents and young adults</li> </ul>
13. Self-efficacy Instrument for Protective Sexual Behaviors	Cecil and Pinkerton (1998)	Young Adults	Assesses one's perceptions of one's ability to refuse sexual intercourse	<ul style="list-style-type: none"> <li>A priori assessment of different subscales, no exploration of dimensionality of all items</li> <li>Only validated among young adults</li> </ul>
14. Sexual Self-Efficacy Scale for Female Functioning	Bailes et al. (2011)	Female adults	Assesses one's perceptions of one's ability to refuse sexual intercourse, to achieve interpersonal orgasm, and to communicate about intimate topics	<ul style="list-style-type: none"> <li>Only validated among female adults</li> </ul>
15. <b>Revised Sexual Consent Scale</b>	Humphreys & Brousseau (2010)	Young Adults	Assesses one's internal and external sexual control	<ul style="list-style-type: none"> <li>Only validated among young adults</li> </ul>
16. Contraceptive Self-Efficacy Scale	Levinson et al. (1998)	Female adolescents and adults	Assesses one's self-efficacy to use contraceptives	<ul style="list-style-type: none"> <li>Only validated among female sample</li> </ul>
17. <b>Sexual Satisfaction Scale</b>	Štulhofer et al. (2010)	Adults	Assesses ego-centered and partner-centered sexual satisfaction	<ul style="list-style-type: none"> <li>Only validated among adults</li> </ul>
18. Sexual Assertiveness Scale for women	Morokoff et al. (1997)	Female young adults	Assesses one's perception regarding one's own and one's partner entitlement to sexual pleasure	<ul style="list-style-type: none"> <li>Only validated among female sample</li> </ul>

Subjectivity Inventory (Horne & Zimmer-Gembeck, 2006). This scale assesses one's agency and entitlement regarding sexual pleasure, but also sexual self-reflection (i.e., the extent to which one reflects on one's sexuality, behavior, and experiences). In addition to this scale, the Men's Sexual Subjectivity Inventory (MSSI) was created (Zimmer-Gembeck & French, 2016) by adding 15 novel items to the Female Subjectivity Scale. The latter scales approach sexual subjectivity from a gendered lens.

Other scales have been further introduced in the field to address similar indicators, yet in a more comprehensive way (e.g., see Štulhofer et al., 2010 below), or with different indicators than those covered in the more multidimensional scales. For example, just like the sexual satisfaction subscale of the MSSCQ (Snell, 1998; Snell et al., 1993), the sexual satisfaction scale of Štulhofer et al. (2010) measures sexual satisfaction. Yet, this scale distinguishes two lenses when addressing sexual satisfaction: a partner-centered lens (i.e., reflecting partner's behaviors and sexual activity and general) and an ego-centered lens (i.e., personal sexual experiences and sensations). An example of a scale addressing supposedly different components than those covered in the scale of Snell et al. (1993), Snell (1998) or the sexual subjectivity scales (Horne & Zimmer-Gembeck, 2006) is the Attitudes about Homosexuality Scale (Adolfson et al., 2010). This scale shifts the focus from assessing beliefs and attitudes about one's own sexuality, to assessing an individual's respect toward others' sexual expressions and desires. A respectful approach to others' sexualities is a key element of positive sexuality according to the World Health Organization (2006) and Williams et al. (2015). Further, the Sexual Communication Self-Efficacy Scale (Quinn-Nilas et al., 2016) assesses adolescents' abilities to communicate about different sexual topics with their partner. The latter scale relates to the sexual assertiveness subscale of the MSSCQ (Snell, 1998; Snell et al., 1993) (i.e., the tendency to be assertive about sexuality) but seems to emphasize more strongly the mere communication about sex rather than pro-active communication.

These existing scales contribute to sexual health research in observing and assessing positive sexuality-related cognitions and behaviors in individuals (e.g., Rostosky et al., 2008). However, we have identified five collective shortcomings of these measurement tools. First, as exemplified in the overview in Table 1 and as previously mentioned, the majority of positive sexuality measurement tools specifically focus on the operationalization of one particular component. For instance, both the Attitudes about Homosexuality Scale (Adolfson et al., 2010) and the Lesbian, Gay, and Bisexual Knowledge and Attitudes Scale for Heterosexuals (Dillon & Worthington, 2013) assess attitudes toward non-heterosexuals, but it remains unclear whether or not they are part of the same concept of positive sexuality. Although the development of different measurement tools has been most notable to move this research field forward, it ignores the preliminary exploration of the multifaceted nature of positive sexuality (among adolescents) (Harden, 2014). By operationalizing each construct separately, scholars cannot be certain about the unique distinction of relevant positive sexuality constructs among adolescents.

Second, there are still several indicators which were, as of yet, overlooked by existing literature and, therefore, not operationalized. In particular, resilience against challenging sexuality-related experiences and its relatedness to other concepts, such as sexual assertiveness, has to this date been understudied (McKee et al., 2010). Scholars argue that the ability to cope with challenging sexuality-related experiences can provide an important means by which adolescents' sexual health is constructed (McKee et al., 2010).

Third, the validation of previously developed scales raises some questions given renewed statistical guidelines for the validation of scales (Howard, 2016; Sakaluk & Short, 2017). Some of the relevant positive sexuality measurement tools were developed by following an a priori assessment of the component or different subcomponents, such as the Female Sexual Subjectivity Inventory (Horne & Zimmer-Gembeck, 2006), and the Self-Efficacy Instrument for Protective Sexual Behaviors (Cecil & Pinkerton, 1998). The authors did not explore the dimensionality of all items and did not assess whether the suggested components and/or subcomponents could be truly extracted from these items. Instead, they assumed that these constructs existed based on a theory and only assessed the internal reliability of the items representing a component or a subcomponent, ignoring the value of exploring the dimensionality of the items. Modern approaches to scale development indicate that identifying the initial factor structure through exploratory factor analysis (EFA) is a necessary condition when aiming to develop a novel robust measurement instrument (Howard, 2016; Sakaluk & Short, 2017). Specifically, EFAs allow scholars to uncover whether or not the suggested theoretical construct underlies a set of variables or items (Watkins, 2018). Without such analyses, one cannot be certain that a set of items or variables assesses the suggested construct or theoretical framework or, perhaps, another construct which was not previously identified by the researcher (Reio & Shuck, 2015).

Fourth, several important positive sexuality measurement tools were originally created for adults, such as the Attitudes about Homosexuality Scale (Adolfson et al., 2010), or validated among only a subset of adolescents, such as the Sexual Self-Concept Inventory for early adolescent girls (Zimmer-Gembeck et al., 2015). Although these sexuality measures were already used in adolescent samples (e.g., Milas et al., 2020), this does not imply that these measures comprehensively represent adolescents' understanding and experiences of positive sexuality. Adolescence entails a unique and complex developmental context in which several profound developmental changes occur (Kar et al., 2015). Therefore, this developmental stage is argued to differ greatly from other life stages (aside from infancy) (Lerner et al., 2010). By using similar measures of positive sexuality components for adolescents as for adults, Harden (2014) argued that particular attention is lacking to the complexity of adolescents' sexual experiences and, moreover, important actors within adolescents' sexuality development (i.e., peers, parents and romantic relationships). Measures that are used among adolescents should take into account the gradual emergence of sexual interest and feelings, different non-coital activities which characterize the gradual development of sexual experiences (e.g., kissing or

communicating about sex) (Fortenberry, 2013; Ponton & Judice, 2004), and unique developmental tasks, such as construction of coping strategies and agency (McKee et al., 2010). As such, these existing measurement tools cannot simply be transferred to the adolescent context.

Finally, several positive sexuality measures focus on girls' or women's sexuality and/or were only validated among samples of girls or women, such as the Sexual Self-Efficacy Scale for Female Functioning (Bailes et al., 2010). Given the gendered nature of sexual experiences, a focus on girls' and women's sexuality is warranted. Existing studies point to girls and women being commonly preoccupied with their partner's sexual pleasure during sexual activities (e.g., through faking orgasms) and, thus, taking on a more passive role (Fahs, 2014; Ponton & Judice, 2004). Sexual desire and agency are further often problematized among girls and women (Murray, 2018).

Recent guidelines put forth by the American Psychological Association (2018) have highlighted the necessity for increased attention to boys' and men's experiences with sexuality. In particular, traditional masculine ideology with regards to sexuality (e.g., promiscuity, constant availability for sex) not only encourages boys to practice more risky sexual behaviors (e.g., sexual interactions without protection) (e.g., Kimmel, 2008) but also pressures them to conform to such ideals of masculinity. As such, both girls and boys deserve attention. Moreover, the gendered nature of sexuality does not necessarily imply that positive sexuality has a different meaning among girls and boys. Rather, they may differ in the challenges they face when adopting different components of a positive sexuality. For instance, mutual respect for one's sexual pleasure and relationships includes girls being able to experience agency for their own sexual pleasure, but also boys not feeling undervalued when they have a lower sexual libido. Similarly, positive sexuality includes being able to engage in sexual activities in a way that is driven by one's own sexual desires and not peer norms (e.g., peers who pressure other boys in gaining sexual experiences or peers doing the contrary and pressuring other girls in restraining from sexual experiences). As illustrated by these examples, the core interpretations of positive sexuality do not match with gendered imbalances in terms of experiences and challenges of sexuality. Yet, the meaning of positive sexuality remains the same for boys and girls. That said, some positive sexuality items may still be interpreted differently by girls and boys because of their gendered sexuality experiences. As such, a measurement instrument validated among girls cannot simply be assumed to be also valid among boys. Scale development literature points to the necessity of testing for measurement invariance (e.g., Millsap, 2012). These tests inform scholars how items of the same measurement are interpreted among different groups (i.e., boys and girls) and are, therefore, necessary when validating a measurement tool for both girls and boys.

### **The Current Study**

The shortcomings of existing positive sexuality measures demonstrate a need for a comprehensive new measure of positive sexuality among adolescents. Therefore, we aimed to

develop and validate a new measure of positive sexuality. Specifically, the Positive Sexuality among Adolescents Scale (PSAS) (1) addresses the variety of different concepts of positive sexuality in one comprehensive scale, (2) addresses the previously understudied concept of resilience against challenging sexuality-related experiences, (3) accounts for the unique developmental context of adolescence, and (4) is created for both adolescent boys and girls. The conceptualization of the PSAS is largely based on adolescent developmental literature in the field of sexuality research (e.g., Diamond & Savin-Williams, 2009; Fortenberry, 2013; Kar et al., 2015; Russell, 2005), existing positive sexuality conceptualizations (e.g., Harden, 2014; Russell, 2005; Tolman & McClelland, 2011; Williams et al., 2015), and measurement tools (e.g., Horne & Zimmer-Gembeck, 2006; Quinn-Nilas et al., 2016; Štulhofer et al., 2010).

We followed three steps to develop a reliable and valid instrument to measure positive sexuality among adolescents. First, we conducted a literature review to identify existing scales measuring positive sexuality indicators. Second, we conducted four focus group interviews among adolescents ( $N_{\text{total}} = 14$ ) to discuss the proposed scale items and to establish age-appropriate items in terms of language. Third, we conducted two survey studies in adolescent samples to explore and confirm the factor structure of the PSAS. We followed Boateng et al.'s (2018) best practices for developing and validating scales in the two studies. Specifically, in Study 1 ( $N = 211$ , 55.5% girls), we tested the dimensionality of the proposed items reflecting positive sexuality via an exploratory factor analysis (EFA). Moreover, the internal consistency and convergent validity of the PSAS were tested. Regarding the latter, the subscales of the PSAS were expected to correlate positively with gender, age, relationship experience, sexual experience, sexual self-reflection (Horne & Zimmer-Gembeck, 2006; Zimmer-Gembeck & French, 2016), entitlement to sexual pleasure from oneself (Horne & Zimmer-Gembeck, 2006; Zimmer-Gembeck & French, 2016), entitlement to sexual pleasure from one's partner (Horne & Zimmer-Gembeck, 2006; Zimmer-Gembeck & French, 2016), the partner-centered lens of sexual satisfaction (Štulhofer et al., 2010), attitudes toward gays and lesbians (Herek, 1984), and resistive sexual efficacy (Rostosky et al., 2008). In Study 2 ( $N = 679$ , 49% girls), we examined whether the results of the EFA in Study 1 would be confirmed with another sample of adolescents through a confirmatory factor analysis (CFA). To ensure that the PSAS assesses the same positive sexuality components for girls and boys, we also tested for measurement invariance by gender in Study 2.

## **Scale Development**

### **Item Creation**

To generate a pool of items, we created novel items to reflect conceptualizations of positive sexuality as represented in the literature review. For the literature review, we searched in the scientific databases Web of Science and Google Scholar for keywords "positive sexuality," "measurement tools" and "adolescents," but also for more specific indicators of positive sexuality "sexual subjectivity," "sexual self-efficacy," "sexual self-concept," "homosexuality," "lesbian," "gay," "bisexual,"

“sexual communication,” and “contraceptive use.” We decided which articles to include in the literature review based on the citation scores and the relevance to our research topic. The measurement tools that guided the creation of the new scale are included in Table 1. Moreover, in a collaborative process, five of the most cited scales (see scales in bold in Table 1) were examined by two researchers experienced in sexuality research among adolescents (i.e., the second and last author). In this process, items of existing scales were selected based on their (1) potential to be suitable for adolescents and (2) their attention to cognitive (e.g., adolescents’ reflection about their own sexuality) and behavioral expressions (e.g., use of contraceptives during sexual activities) of positive sexuality. These items served as inspiration for the development of the items of the PSAS. Once completed, the list was discussed and revised among the authors of the study. Then, a group of four doctoral students with knowledge on survey research among adolescents were informed about the aims of the scale and provided feedback about the readability of the items for adolescent respondents. Next, five adolescents between the ages of 12 and 18 were recruited via the personal network of the first author and independently read the original item list. They were then asked by the first of author of the study about the readability of the items; they confirmed the readability and the clarity of the items. Lastly, the items were discussed and revised by two experts in (adolescent) sexuality research; these experts have authored multiple research articles in journals such as *Journal of Sex Research*, *Archives of Sexual Behavior*, and *Journal of Adolescence*. The experts agreed that the items comprehensively covered positive sexuality. Each item of the scale was formulated in Dutch and, then, jointly translated to English for the purpose of this article.

### Focus Group Interviews

Next, we organized four separate focus groups of adolescents between 14 and 16 years old (70% girls) in January 2019 in Flanders, Belgium. We assigned a total of 14 adolescents to one of the four focus groups, and gender diversity was ensured within each group. To recruit the respondents for the focus group interviews, the first author contacted a school in Flanders. After agreeing to participate in the study, this school distributed informed consent forms to parents. Adolescents who provided active consent and whose parents provided consent for their adolescent to participate in the study were included in the focus group interviews, conducted by the first author. Participants were informed about the purpose of the interview (to examine adolescents’ thoughts about different body image topics). The focus groups were used to (a) determine whether the major conceptualizations regarding positive sexuality were salient, (b) detect additional indicators of positive sexuality that may have been missed, and (c) establish age-appropriate wording of the PSAS items. Interviews were conducted by the first author of the study following a semi-structured protocol (see Table 2). Interviews took approximately 50 minutes (i.e., one school hour). Active consent of parents and adolescents was obtained. After the interviews, participants were shown a brief summary of the researchers’ understanding of positive sexuality based on the existing

**Table 2.** Questions used to guide the focus group interviews.

Questions
Sexuality in general
<ul style="list-style-type: none"> <li>● Can you tell me which words spontaneously pop up in your head when I mention the word “sexuality”</li> <li>● How do you think the average teenager thinks about his/her sexuality and emerging sexual feelings?               <ul style="list-style-type: none"> <li>○ How do you feel about your sexuality?</li> </ul> </li> </ul>
Positive sexuality
<ul style="list-style-type: none"> <li>● Can you describe someone of your age who explores his/her sexuality in a positive way?               <ul style="list-style-type: none"> <li>○ How does this person behave toward someone he/she is in love with?</li> <li>○ How does this person explore his/her sexuality?</li> <li>○ Does he/she talk about his/her sexual feelings or behavior?</li> <li>○ How do you think he/she responds to a heartbreak or unrequited love?</li> <li>○ Are there differences between boys and girls?</li> <li>○ Or younger and older adolescents?</li> </ul> </li> <li>● Which advice would you give to someone of your age (for example, your friends) to explore his/her sexuality?</li> <li>● Which advice is helpful for you?</li> </ul>

literature. This document described different conceptualizations of positive sexuality as formulated in the PSAS and their corresponding items created in the current study. The participants were asked to give feedback on these conceptualizations and item list and to evaluate whether each item was worded in an age-appropriate manner. After discussing the components of positive sexuality (e.g., acceptance of one’s own sexuality) and viewing the proposed PSAS items, all respondents agreed that the items reflected positive sexuality. No respondent indicated that they had trouble with understanding the items. Therefore, it was concluded that the proposed PSAS items were clear and age appropriate.

### Survey Study 1

#### Sample and Procedure

A representative sample of adolescents (aged between 12 and 18) from Flanders, Belgium was recruited in December 2019 via a market research bureau. The market research bureau has a panel of adults which is representative for the Flemish population. Parents who were part of the market research company’s participant pool received an e-mail in which they were asked for their consent regarding the participation of their children in the study. If the parents gave their consent, adolescents were recruited via their parents, via e-mail in which a survey link was provided (i.e., using Qualtrics). A total of 355 respondents completed an online survey. The respondents generally completed the survey within 45 minutes. The respondents and parents were assured that the questionnaire would be processed confidentially and anonymously. Participants received a monetary reward of 10 euros for completing the online questionnaire. The study was approved by the ethical commission of KU Leuven. If participants reported an age below 12 or above 18, their answers were omitted. Specifically, 79 participants were deleted because they did not meet the age specifications. Here, parents instead of the children largely completed the survey, even though the instructions clearly mentioned we were inviting adolescents to participate. Further, to have greater control over the reliability of respondents’ answers (e.g., Gummer et al., 2021), an attention check item was included (i.e., participants had to select the answer option “Strongly agree”). Of the total sample, 65 participants were deleted because they did not

answer the attention check correctly. The number of participants who did not fill in the attention check was higher than expected, although an 18% deletion rate based on the attention check is not unusual for research among adolescents. Recent scale development research (e.g., Schreurs & Vandenbosch, 2021), which also used attention checks, reported similar attention rates. To ensure and maximize the reliability of the data, we decided to only use respondents' answers who filled in the attention check correctly. The final analytical sample consisted of 211 respondents ( $M_{age} = 15.5$ ,  $SD_{age} = 1.61$ ) of which 55.5% were girls. Also, 91.9% were heterosexual, 2.8% were non-heterosexual and 5.2% "did not know." The majority of the respondents had a Western-European background (94.3%), 2.8% had a non-Western-European background and 2.8% had a mixed background. The majority of the respondents were Christian (58.3%), 39.9% identified as Atheists, .5% were Muslim, .5% were Buddhist, and 1.4% had another religion (e.g., Agnostic). Of the overall sample, 46.9% were experienced in terms of having romantic relationships (i.e., at the moment of the data collection, they were either currently in or had previously been involved in a romantic relationship), while 53.1% had no romantic relational experience (i.e., they indicated that they have never been in a relationship). Lastly, at the time of the data collection 54.5% of the respondents ( $N = 115$ ) indicated that they had already masturbated, 59.2% had already cuddled romantically with another person ( $N = 125$ ), 55.9% ( $N = 118$ ) already kissed someone, 28% ( $N = 59$ ) already engaged in foreplay, and 19.9% ( $N = 42$ ) indicated that they had already had sexual intercourse.

### Measures

Demographic variables, sexual experience, and relationship experience were used for sample description and to test convergent validity. The PSAS was then used in the exploratory factor analysis. To measure convergent validity, we further used measures of sexual self-reflection, entitlement to sexual pleasure from oneself, entitlement to sexual pleasure from the partner, the partner-centered lens of sexual satisfaction, attitude toward gays and lesbians, and resistive sexual efficacy.

**Demographic variables.** Adolescents' age, gender (1 = boy, 2 = girl), ethnic background (1 = Western-European, 2 = Eastern-European, 3 = African or Middle Eastern, 4 = North-American, 5 = South-American, 6 = Asian, 7 = Other), religion (1 = Christian, 2 = Muslim, 3 = Jewish, 4 = Buddhist, 5 = Hindu, 6 = Atheist, 7 = Other), and sexual orientation (1 = Heterosexual, 2 = Homosexual, 3 = Bisexual, 4 = Other, 5 = I do not know) were measured. Regarding the latter, a dichotomous variable was created with 0 = heterosexual, 1 = non-heterosexual. Respondents who did not know their sexual orientation yet were reported as missing.

**Sexual experience.** Respondents sexual experience was measured by asking whether or not they had already engaged in the following behaviors: (1) self-masturbation, (2) cuddling, (3) kissing, (4) foreplay and (5) sex. Respondents' scores were summed up, with higher scores indicating a greater sexual experience ( $M = 2.18$ ,  $SD = 1.75$ ).

**Relationship experience.** Relationship experience was assessed by respondents indicating whether they had never been in a relationship before (*no relationship experience* = 0) or whether they were currently in a relationship or had been in a relationship before (*relationship experience* = 1).

**PSAS.** The 60-item Positive Sexuality among Adolescents Scale created in this study was used. Adolescents rated all items on a 7-point Likert-scale (1 = *Strongly disagree* to 7 = *Strongly agree*).

**Sexual self-reflection.** The sexual self-reflection component of the Sexual Subjectivity Inventory (Horne & Zimmer-Gembeck, 2006; Zimmer-Gembeck & French, 2016) was used. Participants rated five statements (e.g., "I (sometimes) think about my sexual experiences and feelings") on a 7-point Likert scale (1 = *Strongly disagree* to 7 = *Strongly agree*). Three items were reverse scored (e.g., "I rarely think about the sexual aspects of my life"). In this study,  $\omega = .78$ . Mean scores were used, with higher scores representing higher sexual self-reflection ( $M = 4.66$ ,  $SD = .98$ ).

**Entitlement to sexual pleasure from oneself.** The entitlement to sexual pleasure from oneself subscale of the Sexual Subjectivity Inventory (SSI) (Horne & Zimmer-Gembeck, 2006; Zimmer-Gembeck & French, 2016) was used. Participants rated three statements (e.g., "I believe self-masturbating can be an exciting experience") on a 7-point Likert scale (1 = *Strongly disagree* to 7 = *Strongly agree*). One item was reverse scored ("Self-masturbation is wrong"). In this study,  $\omega = .55$ . Mean scores were used, with higher scores representing a higher entitlement to sexual pleasure from oneself ( $M = 5.43$ ,  $SD = 1.06$ ).

**Entitlement to sexual pleasure from partner.** The entitlement to sexual pleasure from one's partner subscale of the Sexual Subjectivity Inventory (SSI) (Horne & Zimmer-Gembeck, 2006; Zimmer-Gembeck & French, 2016) was used. Participants rated four items (e.g., "If a partner were to ignore my sexual needs and desires, I'd feel hurt") on a 7-point Likert scale (1 = *Strongly disagree* to 7 = *Strongly agree*). In this study,  $\omega = .84$ . Mean scores were used, with higher scores representing a higher entitlement to sexual pleasure from one's partner ( $M = 5.11$ ,  $SD = .84$ ).

**The partner-centered lens of sexual satisfaction.** The partner-centered lens of sexual satisfaction subscale of the New Sexual Satisfaction Scale (Štulhofer et al., 2010) was used. Participants rated the importance of four items regarding sexual activity with a partner (e.g., "The sexual pleasure of a partner") on a 5-point Likert scale (1 = *Not important at all* to 5 = *Very important*). In this study,  $\omega = .79$ . Mean scores were used, with higher scores representing a higher partner-centered lens of sexual satisfaction ( $M = 4.22$ ,  $SD = .53$ ).

**Attitude toward gays and lesbians.** Because of the length of the survey, the one item Attitudes Toward Lesbians and Gay Men Scale (Herek, 1984) was used. Respondents evaluated to what extent they accepted being gay or lesbian on a 7-point Likert scale (1 = *Strongly disagree* to 7 = *Strongly agree*). A higher score represented a higher acceptance toward gays and lesbians ( $M = 6.22$ ,  $SD = 1.13$ ).

**Resistive sexual efficacy.** The sexual self-efficacy scale of Rostovsky et al. (2008) was used, which is an adapted version of Cecil and Pinkerton's measurement of sexual self-efficacy (1998).



Respondents evaluated whether they would be able to say “no” to something they did not want to do in five different sexual situations (e.g., “if your intimate partner is forcing you”) on a 7-point Likert scale (1 = *Strongly unsure* to 7 = *Strongly sure*). In this study,  $\omega = .88$ . Mean scores were used, with higher scores representing a higher resistive sexual efficacy ( $M = 4.89$ ,  $SD = 1.11$ ).

### Analytical Strategy

Since we expected correlations among factors, we conducted a principal axis estimation procedure (PFA) with an oblique rotation method (Costello & Osborne, 2005) in SPSS (version 27.0.0).<sup>1</sup> SPSS uses listwise deletion for missing values when conducting a factor analysis. Following Sakaluk and Short’s (2017) recommendations regarding best practices for exploratory factor analyses in sexuality research, we conducted parallel analyses to determine factor retention. These analyses determined the number of factors to extract as it estimates the number of factors in a dataset more accurately than the eigenvalue  $> 1$  and/or examining the scree plot (Watkins, 2006). Following existing scale development research (e.g., Eriksson & Humphreys, 2014), we subjected items to several runs of factor analysis. In particular, we deleted items if they (a) had a communality loading of less than .4, (b) had an item-factor loading lower than .5 on a primary factor, or (c) had high inter-item correlations as indicated by the anti-image correlation matrix (Tabachnick et al., 2007). After omitting items, we repeated the exploratory process until item loadings were satisfactory given that the factor loadings and structure can change after removing items.

To assess the internal consistency of the PSAS, we used McDonald’s coefficient omega<sup>2</sup> (McDonald, 1970) based on recent recommendations for reliability testing in scale development (Dunn et al., 2014; Trizano-Hermosilla & Alvarado, 2016). McDonald’s omega has less risk of overestimation or underestimation of reliability in comparison to Cronbach’s alpha. Generally, omega values can range from 0 to 1 and values above .70 represent good internal consistency (Dunn et al., 2014).

Lastly, Pearson correlations were used to examine the associations between the PSAS subscales and age, gender, relationship experience, sexual experience, and construct validity variables (i.e., sexual self-reflection, entitlement to sexual pleasure from self and partner, partner-centered sexual satisfaction, attitude toward gays and lesbians, and resistive self-efficacy).

## Results

**Exploratory factor analysis (EFA).** The final parallel analysis revealed that five factors needed to be retained after comparing eigenvalues of the raw data and the randomly generated data. The factors explained a total variance of 72.04% with a KMO of .91. The significance of the Bartlett’s test of sphericity,  $\chi^2(231) = 3061.611$ ,  $p < .001$ , suggested that the correlation matrix was factorable (Tabachnick et al., 2007). Five items were removed due to low communalities, 30 items were removed

due to low factor loadings or because they did not load onto any factor, and three items were removed because they were not conceptually coherent with their primary factor (i.e., one resilience item loaded on the acceptance of one’s own sexuality scale and two resilience items loaded on the acceptance of others’ sexuality scale).

The first factor (7 items) explained 41.23% of the variance and represents a *positive approach to sexual relationships*. This factor assesses one’s ability to respectfully respond to a partner’s sexual feelings, needs, and desires, to communicate about intimacy, and also to respect their sexual boundaries. The second factor (5 items), explaining 12.99% of the variance, represents *resilience against challenging sexuality-related experiences*. This factor includes items that assess one’s abilities to cope with challenging sexuality-related experiences. The third factor (2 items), explaining 7.39% of the variance, represents *one’s own control over sexual interactions* and reflects one’s ability to have control over sexual interactions. The fourth factor (4 items), explaining 5.63% of the variance, covers a *respectful approach to different sexual expressions*. This factor assesses one’s recognition of sexuality as being unique and multifaceted. Lastly, the fifth factor (4 items), explaining 4.80% of the variance, represents *acceptance of one’s own sexuality* and includes items assessing how adolescents experience their emerging sexual feelings and how accepting they are of such feelings. Table 3 represents the final factors and items, together with, respectively, their eigenvalues, variances, and factor loadings.

**Internal consistency reliability.** PSAS scales were proven to be internally consistent. McDonald’s omegas were .93 for a *positive approach to sexual relationships*, .85 for *resilience against challenging sexuality-related experiences*, .85 for a *respectful approach to different sexual expressions*, and .86 for *acceptance of one’s own sexuality*. Regarding *one’s own control over sexual interactions*, the two items correlated significantly,  $r = .64$ ,  $p < .001$ .

**Convergent validity.** Table 4 shows that almost all factors of the PSAS correlated significantly with the majority of similar constructs.

## Survey Study 2

### Sample and Procedure

Study 2 was part of a survey study of the “Positive Body & Sex Project.”<sup>3</sup> These data were collected in January, 2020 from a representative sample of adolescents (aged between 12 and 18) from 16 schools in Flanders, Belgium through convenience sampling. Written informed parental consent was obtained from each participating adolescent one month before the actual data collection. Adolescents were asked for written consent at the time of the data collection. In the presence of a researcher, the participants generally completed the survey within 50 minutes. The respondents were assured that the questionnaire would be processed confidentially and anonymously.

<sup>1</sup>Datasets and results (together with results on test-retest reliability not included in the manuscript) are publicly available on OSF via [https://osf.io/usfhv/?view\\_only=0d8de5cac4e447858f7bf6674054c7fc](https://osf.io/usfhv/?view_only=0d8de5cac4e447858f7bf6674054c7fc)

<sup>2</sup>Note that McDonald’s omegas were calculated using Mplus (version 8.3) given that version 27.0.0. of SPSS is not compatible with Hayes’ omega extension.

<sup>3</sup>For more information regarding this project, please contact the first author. Data for this project were also collected, in June 2020 and October 2020.

**Table 3.** Factors and items of the PSAS.

Factors	1	2	3	4	5
<i>Eigenvalue</i>	9.071	2.858	1.626	1.238	1.057
<i>Explained variance</i>	41.23%	12.99%	7.39%	5.63%	4.80%
<b>Factor 1: Positive approach to sexual relationships</b>	<b>Factor loadings</b>				
1. I think it is important that a partner feels safe when we're being intimate	.851				
2. I only want to approach a partner respectfully (e.g., <i>if I want to kiss my partner, but they don't want to, I would stop trying</i> )	.799				
3. If I would be intimate with someone, I think it is important that we both enjoy the experience	.685				
4. I would make sure that my partner is satisfied when we are intimate	.679				
5. I think it is important that, during an intimate activity, my partner can say "no" when they do not want to do something	.662				
6. Even though I am hoping for an intimate moment with someone (e.g., <i>a kiss with my crush</i> ), if they don't want to, I would show respect for this decision (e.g., <i>I do not force them to do something</i> )	.662				
7. If I would have questions about my sexuality or my relationship, I would expect to talk about this openly with my partner	.610				
<b>Factor 2: Resilience against challenging sexuality-related experiences</b>					
1. If my friends would tease me about my sexual feelings or experiences (e.g., <i>they criticize the appearance of my crush</i> ), I would try to distract myself by doing something fun (e.g., <i>practicing my hobby</i> )		.758			
2. If my friends would tease me about my sexual feelings or experiences (e.g., <i>they pressure me into having sex</i> ), then I would try to think about things that can cheer me up		.753			
3. If my friends would tease me about my sexual feelings or experiences (e.g., <i>they criticize the appearance of my crush</i> ), then I would distract myself by thinking about something positive		.741			
4. If I would have a negative experience with a partner or crush (e.g., <i>my girlfriend/boyfriend breaks up with me</i> ), then I would distract myself by thinking about something positive		.716			
5. If I would have a negative experience with a partner or crush (e.g., <i>my girlfriend/boyfriend breaks up with me</i> ), I would try to distract myself by doing something fun (for ex., <i>practicing my hobby</i> )		.635			
<b>Factor 3: One's own control over sexual interactions</b>					
1. If someone would force me to do something intimate, I think I can say "no" if I don't want to			.948		
2. I would be able to say no during an intimate activity, even though I first gave the impression that I did want to be intimate (e.g., <i>I was flirting, but I don't want to go any further</i> )			.614		
<b>Factor 4: Respectful approach to different sexual expressions</b>					
1. I respect that two people of the same gender can fall in love				-.823	
2. Boys can only fall in love with girls, and girls can only fall in love with boys (reverse)				.756	
3. I understand that some people don't know yet who they are attracted to (e.g., <i>attracted to a boy, a girl or both</i> )				-.590	
4. Everyone has different sexual desires (e.g., <i>some people are turned on by individuals of the same gender</i> ), this is unique for every person and should be respected (e.g., <i>you shouldn't laugh at this person</i> )				-.553	
<b>Factor 5: Acceptance of one's own sexuality</b>					
1. It is all right to discover yourself in a sexual way					.736
2. It seems normal that I feel sexually aroused sometimes					.682
3. I enjoy exploring my sexual feelings and desires (e.g., <i>fantasizing about my crush</i> )					.676
4. It seems normal that I explore my own sexuality (e.g., <i>who I'm attracted to</i> )					.591

Note. Study 1: N = 211 (girls n = 117, boys n = 94).

Participants of each school could participate in a lottery to win a reward card of 10 euros for completing the survey. The study was approved by the ethical commission of KU Leuven.

Part of the survey study focused on sexuality variables (i.e., Survey A) (N = 630), while the other part focused on body image variables (i.e., Survey B) (N = 640). We reasoned that some respondents, especially the oldest group of adolescents, would complete the survey in a shorter time period than we had foreseen (i.e., 50 minutes). As such, after completion of the survey (i.e., Study A or B), we also invited them to participate in the other study, depending on which study they first completed. This procedure resulted in an additional 79 respondents who, after they had completed the body image study, had sufficient time to also complete the sexuality survey. To ensure that the samples of Study 1 and of Study 2 did not overlap, we consulted the birthdays of the respondents in order to see whether or not there were similarities. If there were, other unique identifiers of the respondents (e.g., gender) were examined to ensure that the samples did not overlap, which appeared to be the case.

After cleaning the data, the analytical sample consisted of 679 respondents with a mean age of 15.32 (SD = 1.47) of which 49% were girls. Also, 90% were heterosexual, 5% were non-

heterosexual, and 5% "did not know." Based on the Belgian secondary school system division, 40.4% of the respondents corresponded to the first education level in which they were being prepared for college education, 47.3% corresponded to the middle education level in which they were being taught primarily technical skills, and 12.4% corresponded to the third education level leading to professions (e.g., baker). The majority of the respondents had a middle socioeconomic status (49.7%), followed by a high socioeconomic status (47.8%) and a low socioeconomic status (2.5%). Also, most of the respondents had a Western-European background (83.5%), followed by a non-Western-European background (9.6%) and a mixed background (6.9%). The majority of the respondents were Christian (61.3%), followed by Atheists (31.7%), Muslims (4.4%), other religions (2.5%), and Buddhists (.1%). Of the overall sample, 67.7% were experienced with regards to romantic relationships (i.e., at the moment of the data collection they were either currently in or had previously been involved in a romantic relationship), while 32.3% were not experienced with regards to a romantic relationship. Lastly, at the time of the data collection 56.8% of the respondents (N = 386) indicated that they had already masturbated, 64.8% (N = 440) had already cuddled romantically with another person, 61% (N =

**Table 4.** PSAS convergent validity.

	Positive approach to sexual relationships	Resilience against challenging sexuality-related experiences	One's own control over sexual interactions	Respectful approach to different sexual expressions	Acceptance of one's own sexuality
Age	.122 (.076)	-.110 (.110)	.051 (.458)	.205** (.003)	.206** (.003)
Gender	-.032 (.639)	-.111 (.107)	-.079 (.253)	.113 (.100)	-.026 (.709)
Relationship experience	.063 (.365)	.020 (.776)	-.066 (.338)	.090 (.192)	.119 (.084)
Sexual experience	.096 (.164)	.017 (.809)	-.025 (.720)	.116 (.092)	.292*** (.000)
Sexual self-reflection	.375*** (.000)	.135* (.050)	.050 (.474)	.355*** (.000)	.554*** (.000)
Entitlement to sexual pleasure from self	.513*** (.000)	.109 (.113)	.183** (.008)	.435*** (.000)	.666*** (.000)
Entitlement to sexual pleasure from one's partner	.525*** (.000)	.249*** (.000)	.285*** (.000)	.376*** (.000)	.444*** (.000)
Partner-centered sexual satisfaction	.733*** (.000)	.303*** (.000)	.343*** (.000)	.499*** (.000)	.595*** (.000)
Attitude toward gays and lesbians	.345*** (.000)	.081 (.245)	.186** (.007)	.701*** (.000)	.336*** (.000)
Resistive self-efficacy	.314*** (.000)	.111 (.107)	.473*** (.000)	.230** (.001)	.233** (.001)

Note. Study 1:  $N = 211$  (girls  $n = 117$ , boys  $n = 94$ ). Values between brackets represent  $p$  values. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

414) had already kissed someone, 31.8% ( $N = 216$ ) had already engaged in foreplay, and 22.1% ( $N = 150$ ) indicated that they had already had sexual intercourse.

### Measures

Demographic variables, sexual experience, and relationship experience, were used for sample description. Adolescents' gender was used for tests of measurement invariance. The PSAS was then used in the confirmatory factor analysis.

**Demographic variables.** Adolescents' age, gender (1 = boy, 2 = girl), ethnic background (1 = Western-European, 2 = Eastern-European, 3 = African or Middle Eastern, 4 = North-American, 5 = South-American, 6 = Asian, 7 = Other), religion (1 = Christian, 2 = Muslim, 3 = Jewish, 4 = Buddhist, 5 = Hindu, 6 = Atheist, 7 = Other), and sexual orientation (1 = Heterosexual, 2 = Homosexual, 3 = Bisexual, 4 = Other, 5 = I do not know yet) were measured. Regarding the latter, a dichotomous variable was created with 0 = heterosexual, 1 = non-heterosexual. Respondents who did not know their sexual orientation yet were reported as missing. Regarding the respondents' educational level, the Belgian secondary school system was divided into three levels, with the first level preparing adolescents for college education, the middle level teaching primarily technical skills, and the third level leading to professions (e.g., baker). Lastly, respondents' socioeconomic status was measured by using the MacArthur Scale of Subjective social status (Goodman et al., 2001). A ladder with ten rungs representing Belgian society was shown. Respondents had to mark which rung best represents where their family would be on the ladder (1 = lowest, 10 = highest). Respondents were told that, at the top of the ladder, there are the people who are best off (e.g., they have the most respectable jobs, have the most money, highest amount of schooling). At the bottom of the ladder, there are people who are worst off (e.g., no jobs or jobs that nobody respects, have little money, have little or no education). No respondents marked rung one. For descriptive purposes, rungs two to four were categorized as a low socioeconomic status (= 1), rungs five to seven as middle socioeconomic status (= 2), and rungs eight to ten as high socioeconomic status (= 3).

**Sexual experience.** Sexual experience was measured by asking whether or not they had already engaged in the following behaviors: (1) self-masturbation, (2) cuddling, (3) kissing, (4) foreplay and (5) sex. Respondents' scores were summed up, with higher scores indicating a greater sexual experience ( $M = 2.56$ ,  $SD = 1.75$ ).

**Relationship experience.** Relationship experience was assessed by respondents indicating whether they had never been in a relationship before (*no relationship experience* = 0) or whether they were currently in a relationship or had been in a relationship before (*relationship experience* = 1).

**PSAS.** The 22-item PSAS as established in Study 1 was used. McDonald's omegas were .90 for a positive approach to sexual relationships ( $M = 6.21$ ,  $SD = .74$ ), .85 for resilience against challenging sexuality-related experiences ( $M = 4.49$ ,  $SD = 1.12$ ), .86 for a respectful approach to different sexual expressions ( $M = 5.51$ ,  $SD = 1.37$ ), and .87 for acceptance of one's own sexuality ( $M = 5.36$ ,  $SD = 1.04$ ). In terms of control over sexual interactions ( $M = 5.55$ ,  $SD = 1.16$ ), the two items correlated significantly,  $r = .63$ ,  $p < .001$ .

### Analytical Strategy

We used Mplus version 8.3 to confirm the factor structure of the PSAS as established in the previous study. By default, Mplus handles missing data using full information maximum likelihood. Three goodness-of-fit-indices were used: the root mean square error of approximation (RMSEA), the Bentler Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) (Hu & Bentler, 1999). Generally, CFI and TLI values between .90 and .95 and RMSEA values between .05 and .08 indicate an acceptable model fit, and CFI and TLI values larger than .95 and RMSEA values smaller than .05 indicate good model fit (Kline, 2015).

The current study further determined whether the factors of PSAS were invariant across gender. If measurement invariance can be demonstrated, then participants across the two genders interpret the items, as well as the underlying latent factor, in the same way. To test measurement invariance, we estimated a set of models: (1) configural (i.e., whether similar factors are measured across boys and girls), (2) metric (i.e., whether respondents across gender attribute the same meaning to the

latent construct), and (3) scalar (i.e., whether the meaning of the construct [factor loadings] and the levels of underlying items [intercepts] are equal across boys and girls) (Chen, 2007; van de Schoot, 2012). The configural model was tested by freeing factor loadings, intercepts, and residual variances across boys and girls. Factor means are fixed at zero in the two groups. In the metric model, factor loadings are constrained to be equal across boys and girls, intercepts and residual variances are free across the two groups, and factor means are fixed at zero in the two groups. The scalar model was evaluated by constraining both factor loadings and intercepts to be equal across groups, allowing residual variances to be free across groups, and fixing factor means at zero in both groups. In order to test a statistical comparison between the configural and metric model and between the metric and scalar model, a chi square difference test is normally used. However, given the large sample of Study 2, the chi square difference test will likely indicate significance and, thus, provide an unrealistic criterion on which to base evidence of invariance (e.g., Byrne & Stewart, 2006). As such, practical model fit changes are explored between the models, if: CFI  $\geq$  .10 and RMSA  $\geq$  .015 or SRMR  $\geq$  .030, then factor loadings are non-invariant between girls and boys (Chen, 2007). If model fit changes indicated model non-invariance, additional item-level analyses (Byrne & Stewart, 2006) were performed to identify which item intercept may be non-equivalent. Following recommendations of Dimitrov (2010), a backward approach was used in which the source of non-invariance was examined by sequentially releasing item intercept constraints.

## Results

**Confirmatory Factor Analysis.** All correlations between latent factors were freed. All five factors correlated significantly with each other,  $p < .05$ , except for a respectful approach to different sexual expressions and resilience against challenging sexuality-related experiences,  $p = .034$ . The CFA indicated an adequate model fit  $\chi^2(199) = 748.580$ ,  $p < .001$ , CFI = .904, TLI = .889, RMSEA = .064. To improve the model fit, modification indices produced by the CFA were examined. These fit indices indicated that two items of the resilience against challenging sexuality-related experiences factor shared variance (i.e., “If I would have a negative experience with a partner or crush [e.g., my

girlfriend/boyfriend breaks up with me], then I would distract myself by thinking about something positive” and “If my friends would tease me about my sexual feelings or experiences [e.g., they criticize the appearance of my crush], I would try to distract myself by doing something fun [e.g., practicing my hobby]”). Therefore, the error terms of these two items were allowed to covary, which improved the model fit of the PSAS,  $\chi^2(231) = 642.706$ ,  $p < .001$ , CFI = .922, TLI = .909, RMSEA = .058. The factor structure of the PSAS obtained in Study 1 was confirmed in Study 2. Table 5 includes the model fit indices of the 22-item PSAS.

**Tests of measurement invariance.** Table 5 shows that the configural invariance model fit the data well and that the metric model provided good fit to the data. The changes in fit indices did not meet Chen’s (2007) criteria for factor loading non-invariance. It can be concluded that items of the PSAS formed similar latent factors for girls and boys and that the factor loadings of the items of the PSAS are equivalent among girls and boys. Lastly, the scalar model was evaluated against the metric model of the PSAS. Model fit changes indicated intercept non-invariance. This means that at least one item intercept differs across boys and girls. Thus, additional item-level analyses (Byrne & Stewart, 2006) were performed using a backward approach. This resulted in the identification of three problematic items: item four of a respectful approach to sexual expressions (“Everyone has different sexual desires, this is unique for every person and should be respected”), item four of acceptance of one’s own sexuality (“It seems normal that I explore my own sexuality”) and item four of a positive approach to sexual relationships (“I would make sure that my partner is satisfied when we are intimate”). After sequentially releasing the constraints of these problematic items, the scalar model fit values increased,  $\chi^2(152) = 981.686$ ,  $p < .001$ , CFI = .909, TLI = .902, RMSEA = .062. Scholars indicate that if some of the latent intercepts differ across groups, but the majority of intercepts do not differ, partial measurement invariance can be assumed (Baumgartner & Steenkamp, 1998).

Given that the PSAS demonstrated partial invariance, average PSAS scores can be meaningfully compared between girls and boys. Table 6 shows that girls and boys differed significantly (i.e.,  $p \leq .001$ , .01, or .05) on 16 items of the PSAS. Regarding the subscales, girls and boys differed significantly on

**Table 5.** Model fit indices for the confirmatory factor analyses (CFAs) and tests of measurement invariance (MI) of the PSAS items.

PSAS Study 2	$\chi^2$	Df	CFI	TLI	RMSEA	95% CI	SRMR
Girls and boys	642.706	231	.922	.909	.058	.053, .063	.058
<b>MI</b>	871.887	396	.922	.909	.059	.054, .065	.063
Configural model	921.944	152	.917	.907	.060	.055, .065	.074
Metric model	1055.462	430	.898	.890	.065	.060, .070	.078
Scalar model	1033.337	429	.901	.893	.064	.059, .069	.076
Scalar model item 4 respectful approach (“Everyone has different sexual desires, this is unique for every person and should be respected”)	1009.908	428	.905	.897	.063	.058, .068	.075
Scalar model item 4 respectful approach + item 4 acceptance (“It seems normal that I explore my own sexuality”)	981.686	427	.909	.902	.062	.057, .067	.075
Scalar model item 4 respectful approach + item 4 acceptance + item 4 of positive relationships (“I would make sure that my partner is satisfied when we are intimate”)							

Note. Study 2: N = 679 (girls N = 333, boys N = 346).

the subscale a positive approach to sexual relationships. Independent *t*-tests show that girls' scores ( $M = 6.33$ ,  $SD = .65$ ) were significantly higher than boys' scores ( $M = 6.10$ ,  $SD = .81$ ),  $F(673) = 22.74$ ,  $t = -4.07$ ,  $p < .001$ . In terms of the subscale control over sexual interactions, girls' scores were higher ( $M = 5.72$ ,  $SD = 1.11$ ) than boys' scores ( $M = 5.38$ ,  $SD = .1.18$ ),  $F(673) = 53$ ,  $t = -3.86$ ,  $p < .001$ . Regarding the respectful approach to different sexual expressions, girls' scores were also significantly higher ( $M = 6.05$ ,  $SD = 1.08$ ) than boys' scores ( $M = 4.99$ ,  $SD = 1.42$ ),  $F(675) = 15.22$ ,  $t = -10.94$ ,  $p < .001$ . Lastly, boys' scores were significantly higher on acceptance of one's own sexuality ( $M = 5.46$ ,  $SD = 5.26$ ) than girls' scores ( $M = 5.26$ ,  $SD = .98$ ),  $F(675) = 3.74$ ,  $t = -2.59$ ,  $p < .001$ .

## Discussion

Scholars have pointed to the necessity of exploring the establishment of positive sexuality in adolescence (e.g., McKee et al., 2010; Russell, 2005), in addition to the examination of detrimental sexual attitudes and behaviors in adolescents. Studies addressing positive sexuality can bolster a balanced and comprehensive understanding of adolescents' sexuality development (Fortenberry, 2016; Impett et al., 2013). Indeed, scholars have recently called for the development of new tools addressing adolescent sexuality and its role in healthy sexual development (Fortenberry, 2016). As a response to such calls, we developed the Positive Sexuality among Adolescents Scale (PSAS) based on conceptualizations of positive sexuality (Diamond & Savin-Williams, 2009; Harden, 2014; McKee et al., 2010) and the developmental context of adolescence (Fortenberry, 2013; Kar et al., 2015). The PSAS provides a significant addition to the literature as its key contributions include (1) the inclusion of a variety of different concepts of positive sexuality in one comprehensive scale, (2) the operationalization of the previously understudied concept "resilience against challenging sexuality-related experiences," (3) attention to the developmental context of adolescence, and (4) applicability for both boys and girls. The scale provides a relevant tool by which one can examine to what extent adolescents describe and experience sexuality in a positive way.

The exploratory factor analyses supported a five-dimensional factor structure which departs from existing conceptualizations of positive sexuality (e.g., Harden, 2014). A confirmatory factor analysis performed in Study 2 provided further evidence for the PSAS as a valid measure of positive sexuality among adolescence. As such, positive sexuality, as demonstrated by the current study's findings, appears to be a multifaceted construct. The PSAS comprises 22 items that represent five key factors of positive sexuality: (a) a positive approach to sexual relationships, (b) acceptance of one's own sexuality, (c) a respectful approach to different sexual expressions, (d) control over sexual interactions, (e) resilience against challenging sexuality-related experiences.

The first subscale, a positive approach to sexual relationships, represents adolescents' ethical and responsible approach to a partner's sexuality. The subscale reflects WHO's (2006) understanding of a respectful approach to sexual relationships by

assessing one's ability to respectfully respond to a partner's sexual feelings, needs, and desires, but also to respect their sexual boundaries (e.g., control of their partner). Moreover, the subscale operationalizes one's capabilities to account for their partner's enjoyment during sexual experiences and their ability to communicate with their partner about intimate topics. The latter matches WHO's (2006) but also other scholars' (e.g., Harden, 2014) emphasis on pleasurable and safe sexual experiences which are free of coercion, though it focuses on the dyadic context in which such experiences can occur. In particular, instead of assessing the individual's abilities to have such experiences, it recognizes the necessity of both partners' enjoyment of sexual interactions and recognizes that one should account for a partner's safety when engaging in sexual interactions. Thus, the higher the scores on this particular subscale, the more ethical and responsible adolescents are for their sexual partners. Despite evidence that the relational context plays an important role in the sexual socialization of adolescents (e.g., Salerno et al., 2015), the majority of research on adolescent sexuality focuses on the individual and ignores this particular context (Harden, 2014). As such, the dyadic approach of the first factor of the PSAS might be fruitful for future research which seeks to understand adolescents' sexual interactions and sexual decision making in the relational context. For example, recent research demonstrates that accounting for one's partner's sexual preferences and interests positively relates to one's own sexual satisfaction and one's sexual connection with their partner (see review by Impett et al., 2020). Similar results may be found among adolescents.

The second subscale of the PSAS focuses on adolescents' own acceptance of their sexuality and addresses how adolescents experience their emerging sexual feelings (e.g., arousal) and the discovery of their own sexuality. The higher the scores on this scale, the more accepting adolescents are of their own sexuality. The subscale aligns with Schalet's (2010) understanding of sexual subjectivity and its operationalization by Horne and Zimmer-Gembeck (Sexual Subjectivity Scale, 2006; 2016), though it more explicitly accounts for the exploratory nature of adolescents' sexuality development and the gradual emergence of adolescents' sexual feelings. The subscale is a relevant addition to the literature as the exploration and construction of one's sexual identity is a cornerstone of adolescents' development (Best & Fortenberry, 2013). The assessment of a positive evaluation of one's sexuality is particularly useful for quantitative research seeking to understand adolescents' sexuality development and related factors. A positive evaluation of one's own sexuality has previously been proven to hold beneficial implications for other sexual outcomes, such as sexual self-efficacy (e.g., Rostosky et al., 2008) as well as overall well-being (Anderson, 2013).

The third subscale represents a respectful approach to different sexual expressions of others. The subscale reflects WHO's (2006) respectful approach to sexuality and Williams et al.'s (2013) recognition of sexuality as being unique and multifaceted. Specifically, the subscale focuses on adolescents' understanding that sexual expressions and orientations are product of change and growth, but also that they are unique for each individual. Thus, the higher the scores on this subscale, the more accepting of different sexual expressions adolescents are and the more they recognize that sexuality is

**Table 6.** Means and standard deviations of items and factors among boys and girls.

PSAS items	Boys		Girls		F	t
	M	SD	M	SD		
<b>Factor 1: Positive approach to sexual relationships</b>	6.10	.809	6.33	.650	22.74	-4.07***
1: I think it is important that a partner feels safe when we're being intimate	6.21	.927	6.40	.795	11.08	-2.84**
2: I only want to approach a partner respectfully (e.g., <i>if I want to kiss my partner, but they don't want to, I would stop trying</i> )	5.92	1.042	6.27	.860	11.41	-4.82***
3: If I would be intimate with someone, I think it is important that we both enjoy the experience	6.29	.940	6.45	.815	10.87	-2.34**
4: I would make sure that my partner is satisfied when we are intimate	6.21	.940	6.20	.884	4.36	.13
5: I think it is important that, during an intimate activity, my partner can say "no" when they do not want to do something	6.17	1.000	6.51	.775	22.06	-4.93***
6: Even though I am hoping for an intimate moment with someone (e.g., <i>a kiss with my crush</i> ), If they don't want to, I would show respect for this decision (e.g., <i>I do not force them to do something</i> )	6.25	.959	6.52	.794	22.52	-3.92***
7: If I would have questions about my sexuality or my relationship, I would expect to talk about this openly with my partner	5.60	1.193	5.90	1.074	8.92	-3.36**
<b>Factor 2: Resilience against challenging sexuality-related experiences</b>	4.54	1.092	4.43	1.149	.01	1.33
8: If my friends would tease me about my sexual feelings or experiences (e.g., <i>they criticize the appearance of my crush</i> ), I would try to distract myself by doing something fun (e.g., <i>practicing my hobby</i> )	4.49	1.502	4.40	1.493	.01	.75
9: If my friends would tease me about my sexual feelings or experiences (e.g., <i>they pressure me into having sex</i> ), then I would try to think about things that can cheer me up	4.27	1.430	4.05	1.501	.18	1.96*
10: If my friends would tease me about my sexual feelings or experiences (e.g., <i>they criticize the appearance of my crush</i> ), then I would distract myself by thinking about something positive	4.25	1.487	4.29	1.415	.24	-.38
11: If I would have a negative experience with a partner or crush (e.g., <i>my girlfriend/boyfriend breaks up with me</i> ), then I would distract myself by thinking about something positive	4.57	1.369	4.52	1.394	.88	.48
12: If I would have a negative experience with a partner or crush (e.g., <i>my girlfriend/boyfriend breaks up with me</i> ), I would try to distract myself by doing something fun (e.g., <i>practicing my hobby</i> )	5.13	1.259	4.89	1.390	.65	2.31*
<b>Factor 3: Control over sexual experiences</b>	5.38	1.182	5.72	1.110	.53	-3.86***
13: If someone would force me to do something intimate, I think I can say "no" if I don't want to	5.67	1.263	5.84	1.182	2.89	-1.80
14: I would be able to say no during an intimate activity, even though I first gave the impression that I did want to be intimate (e.g., <i>I was flirting, but I don't want to go any further</i> )	5.10	1.408	5.60	1.222	.94	-4.97***
<b>Factor 4: Respectful approach to different sexual expressions</b>	4.99	1.424	6.05	1.082	15.22	-10.94***
15: I respect that two people of the same gender can fall in love	5.21	1.528	6.27	1.067	28.07	-10.44***
16: Boys can only fall in love with girls, and girls can only fall in love with boys (reverse)	3.21	1.949	1.86	1.474	41.94	10.14***
17: I understand that some people don't know yet who they are attracted to (e.g., <i>attracted to a boy, a girl or both</i> )	4.72	1.543	5.76	1.324	2.97	-9.41***
18: Everyone has different sexual desires (e.g., <i>some people are turned on by individuals of the same gender</i> ), this is unique for every person and should be respected (e.g., <i>you shouldn't laugh at this person</i> )	5.23	1.468	6.03	1.155	13.93	-7.91***
<b>Factor 5: Acceptance of one's own sexuality</b>	5.46	1.088	5.26	.982	3.74	2.59*
19: It is all right to discover yourself in a sexual way	5.39	1.215	5.13	1.154	3.96	2.85**
20: It seems normal that I feel sexually aroused sometimes	5.67	1.269	5.23	1.175	5.23	4.68***
21: I enjoy exploring my sexual feelings and desires (e.g., <i>fantasizing about my crush</i> )	5.19	1.348	4.96	1.286	3.27	2.31**
22: It seems normal that I explore my own sexuality (e.g., <i>who I'm attracted to</i> )	5.59	1.228	5.66	1.079	4.63	-.80

Note. Study 2: N = 679 (girls N = 332, boys N = 346). An independent sample t-test was conducted to assess whether items and factor scores differed significantly between boys and girls. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

unique to each individual. The subscale offers a unique addition to existing measurement tools, such as the Attitudes toward Homosexuality Scale (Adolfson et al., 2010), which did not account for the context of adolescence and the gradual discovery of their sexual orientation.

The fourth subscale represents one's ability to have control over sexual interactions. Higher scores on this particular subscale indicate a greater ability to have control during sexual interactions and a greater recognition of this control. McKee and colleagues (2010) pointed to the necessity of adolescents learning that they have agency over sexual experiences as a part of a healthy sexual development. Previous literature has already extensively underlined the significance of sexual agency, given its link to sexual self-esteem and sexual satisfaction (Galinsky & Sonenstein, 2011).

The fifth subscale represents resilience against challenging sexuality-related experiences and, as such, offers the first scale to measure this previously introduced component (McKee et al., 2010). This measure is especially relevant among adolescents as their understanding of their own sexuality and sexual experiences may be challenged by various obstacles (Dalenberg et al., 2018). In particular, the PSAS taps into two forms of

challenging sexuality-related experiences: negative remarks by peers and negative experiences in romantic relationships. By addressing these two sets of challenging sexuality-related experiences, scholars are able to assess adolescents' ability to show resilience against challenging sexuality-related experiences. In particular, the higher respondents' scores on this subscale, the higher their abilities to cope with challenging sexuality-related experiences.

Results also demonstrated strong reliability and convergent validity of the final PSAS. Surprisingly, age was only positively related to a respectful approach to different sexual expressions and the acceptance of one's own sexuality. This underlines how these components are gradually developed during adolescence (Russell, 2005), rather than being a static indicator of positive sexuality. The other nonsignificant correlations with age (i.e., a respectful approach to sexual relationships, resilience against challenging sexuality-related experiences, and control over sexual interactions) do not point to the changeability and gradual emergence of other positive sexuality indicators. It may be possible that other factors indicating adolescents' maturation, such as their sexual maturation (Duke et al., 1980) or pubertal timing (Petersen et al., 1988), are positively

related to the five positive sexuality components. As such, future research is warranted to further tap into the possible gradual emergence of positive sexuality indicators during adolescence. Relatedly, only adolescents' sexual experience was positively linked to their acceptance of their own sexuality. This implies that the more sexually experienced adolescents are, the more they learn to discover and accept their own sexuality. As the field of sexuality research has been skewed toward examining the negative consequences of adolescents' sexual experiences (Fortenberry, 2016), this particular finding may add nuance to the current literature.

Further, in contrast to several existing measures such as the Sexual Self-Efficacy Scale for Female Functioning (Bailes et al., 2011), the PSAS provides an opportunity to assess positive sexuality among both boys and girls. The PSAS is mostly invariant across adolescent gender. However, larger variances were found for three items (i.e., "Everyone has different sexual desires, this is unique for every person and should be respected," "It seems normal that I explore my own sexuality," and "I would make sure that my partner is satisfied when we are intimate"). Therefore, partial invariance was assumed and mean scores can be meaningfully compared between boys and girls (Baumgartner & Steenkamp, 1998).

Variances regarding items assessing sexual attitudes and behaviors were expected, as the literature points to the gendered nature of sexuality (Carpenter, 2009; Hamilton & Armstrong, 2009). When examining the mean scores on the different subscales of the PSAS, a reflection of the gendered nature and social construction of sexuality can further be observed. Positive sexuality among adolescents appears to be experienced through existing gender roles. This is seen in girls scoring higher on a positive approach to sexual relationships, reflecting the traditional feminine role that girls and women are more preoccupied with their partner's sexual pleasure during sexual activities (Ponton & Judice, 2004). Moreover, girls' scores were also higher on control over sexual interactions, indicating that girls attach more value to being in control over sexual interactions, in comparison to boys. In particular, traditional masculinity conveys sexual dominance and, at the same time, assumes that men are always sexually available and cannot reject an opportunity to engage in sexual activity (Murray, 2018). Girls' scores also appeared to be significantly higher on a respectful approach toward different sexual expressions, which implies that girls are more accepting of a variety of sexual expressions than boys. Existing studies have observed similar findings among adults (e.g., Morrison & Morrison, 2011) and social identity theory argues that expressions of homonegativity can be used by heterosexual men to protect threats of their own heterosexual identity (Hamner, 1992; Monto & Supinski, 2014). Lastly, boys' scores indicate that they are more accepting of the discovery of their own sexuality and emerging sexual feelings. This finding reflects girls' sexual desire and agency being problematized and boys' sexual desire being more expected (Murray, 2018).

### Limitations

Several limitations of the current study need to be considered. First, while the PSAS displayed high reliability and we provided evidence for the scale's validity, we should be cautious regarding

the scale's generalizability. Adolescent samples of Flanders, Belgium were used to test the psychometric properties of the PSAS. This country is considered to be liberal and progressive with regards to sexuality and, therefore, scores on the PSAS in this country may vary from scores of adolescents from other, more sexually conservative countries (e.g., Turkey) (Ševčíková et al., 2014). Future research is therefore encouraged to further explore the reliability and validity of the PSAS in more diverse samples. Related to the study sample, for Study 1 our sample included 211 respondents. Following Sakaluk and Short's (2017) rule of thumb with regards to adequate sample sizes for exploratory factor analyses (i.e., between 200–250 respondents), our sample size can be considered adequate but still on the small end of the range. As such, scholars are advised to interpret the results of our exploratory factor analysis by considering this limitation of the study. Also, in Study 2, 79 respondents first completed body image-related items and then completed sexuality-related items. This order may have caused potential for priming effects.<sup>4</sup> Further, the majority of the adolescents who participated in the two studies were heterosexual. Although we expect that the items of the PSAS are also applicable for adolescents who do not identify as heterosexual, future studies are recommended to examine the psychometric properties of the PSAS among specific sexual minority groups. By testing the PSAS in these groups, the generalizability of the PSAS among adolescents of different sexual orientations can be confirmed.

Moreover, similar to the vast majority of quantitative measurements, the PSAS adopts a self-report design, which relies on the accuracy and honesty of adolescents' responses. Future studies should account for the likelihood that adolescents respond in a socially acceptable way and implement an additional measure to control for social desirability (Miller, 2011). Lastly, due to the length of the two survey studies, the current article was unable to do additional testing of construct validity. Specifically, the discriminant and incremental validity of the PSAS were not tested. Therefore, future studies are encouraged to estimate the discriminant validity of the PSAS subscales by, for example, testing whether the subscales of the PSAS are unrelated to scales measuring negative sexuality-related attitudes and behaviors such as The Acceptance of Modern Myths about Sexual Aggression Scale (Eyssel & Bohner, 2008). Further, additional research should also determine whether the subscales of the PSAS will increase the predictive ability beyond that provided by an existing method of assessment such as the Sexual Subjectivity scale (Horne & Zimmer-Gembeck, 2006) (i.e., incremental validity).

### Future Directions

Although more testing of the scale is necessary, suggestions can be made for the adoption of the PSAS in research settings. In particular, future research could examine the factors that foster the formation of positive sexuality. One such possibility may be personality traits. For example, high empathy levels may be

<sup>4</sup>As a form of sensitivity analysis, we compared the mean scores on the PSAS between respondents who only or first completed the sexuality items ( $N = 600$ ) and respondents who first completed the body image items ( $N = 79$ ). Independent t-tests showed no significant differences ( $p > .05$ ) between these two groups regarding the scores on the five subscales.

related to higher scores on other-focused components of the PSAS (i.e., positive partner-centered sexual experiences and a respectful approach toward different sexual expressions). By focusing on individual factors shaping the development of positive sexuality, studies can employ an individual-based approach and identify which groups of adolescents are more prone to developing a healthy sexuality, and which groups are not. Researchers may want to pay special attention to the formation of resilience against challenging sexuality-related experiences. Results of Study 2 showed that almost one fourth (24.8%) of the adolescents did not show resilience against challenging sexuality-related experiences (i.e., they indicated they did not agree with the items), while only a small minority of adolescents (around 5%) scored relatively low on the other factors. Therefore, following an individual-based approach, studies can explore which adolescents score relatively low on resilience against challenging sexuality-related experiences and, based on their findings, develop recommendations for practitioners and organizations in the field of adolescent sexuality development.

Relatedly, we also encourage future researchers to focus on the impact of adolescents' media use on the development of positive sexuality. Existing literature points to the media as an important actor shaping adolescents' sexual attitudes and behaviors (Maes et al., 2020). As such, it may be possible that adolescents' media use (e.g., sexting) may also shape adolescents' formation of positive sexuality.

Further, future studies should pay attention to the possible beneficial implications or protective role of positive sexuality for adolescents' future sexual and well-being outcomes, such as happiness. Existing studies have already pointed to the effectiveness of several positive sexuality components (e.g., sexual self-efficacy) in promoting adolescents' sexual health (Rostosky et al., 2008). As such, similar relations may occur with regards to the different components of the PSAS. For example, with resilience being negatively associated with psychological distress (Beasley et al., 2003), resilience against challenging sexuality-related experiences may also be related to lower levels of psychological distress.

Lastly, more evidence is needed to assess the clinical usefulness of the PSAS. In particular, the validity and reliability of the PSAS should be first tested among clinical samples of adolescents with sexual difficulties, such as adolescents who are unable to accept their sexual orientation.

## Conclusions

The 22-item PSAS is a brief, psychometrically sound instrument of positive sexuality among adolescents. It contains five subscales which measure different expressions of a positive sexuality among adolescents: positive approach to sexual relationships, acceptance of one's own sexuality, a respectful approach to different sexual expressions, one's ability to have control over sexual interactions, and resilience against challenging sexuality-related experiences. Two studies supported its internal consistency reliability, convergent and incremental validity and partial measurement invariance across boys and girls among adolescents from Belgium. Overall, the PSAS can be used by scholars who need to assess positive sexuality among adolescents within research.

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