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Adolescents' Self Perceptions: Connecting Psychosocial Competencies to the Sexual Self-Concept

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ABSTRACT

Adolescence is a crucial period for the development of the sexual self-concept. While existing research shows that adolescents' sexual self-concept varies, few studies have examined its relation with psychosocial competencies such as the general self-concept, interpersonal skills, and self-control capacities. The objective of this study was to examine the association between dimensions of the sexual self-concept (sexual self- and body esteem, self-efficacy, and anxiety) and psychosocial competencies among Canadian adolescents. Self-reported data from 1584 adolescents aged between 14 and 18 years (49.7% girls) were analyzed using path analysis. Results show that adolescents whose general self-concept was characterized by more internally consistent self-beliefs and greater self-worth, and who perceived their interpersonal skills as more developed, displayed higher sexual self- and body esteem, higher sexual self-efficacy, and lower sexual anxiety. Self-control capacities were positively correlated with sexual body-esteem and negatively correlated with sexual anxiety. These associations were, however, minimal and, when significant, exhibited a counterintuitive relationship with the sexual self-concept in the path model. Age, gender and sexual experience did not moderate these associations. Findings from the study highlight the need to pursue research on the interface between sexuality and psychosocial functioning to increase current understanding of adolescent development.

General Introduction

Adolescence is a key period in the development of the sense of self as a sexual being – or sexual self-concept – which contributes to shaping the experience of sexuality throughout life (Deutsch et al., 2014). It is also marked by various psychosocial challenges, such as identity formation, the management of strong emotions, and the negotiation of relational dynamics, which can influence sexuality development (Speranza & Midgley, 2017). Although sexual and psychosocial development are known to interact during adolescence (Christie & Viner, 2005; Kar et al., 2015), the extent to which psychosocial competencies are associated with adolescents' developing sexual self-concept is unclear. To date, efforts have been concentrated on studying adolescent sexuality and psychosocial development as independent fields of research, and few attempts have been made to examine their interface. In addition, available data from studies bridging the two fields target prevention and rarely integrate the factors that are known to promote positive youth development (Halpern, 2010; Harden, 2014). Such factors, which include the sexual self-concept, are important for sexual health and well-being (Arbeit, 2014; Kågsten & van Reeuwijk, 2021). In order to fill this knowledge gap, the objective of the present study was to examine the association between adolescents' sexual and general self-concept, perceived interpersonal skills and self-control capacities, while taking into account age, gender, and past sexual experiences. The conceptual framework of the study, which

articulates the relationship between psychosocial competencies and the sexual self-concept, is presented in Figure 1.

The Sexual Self-Concept in Adolescence

The sexual self-concept, that is, the sense of self regarding the perceptions and feelings a person holds concerning their sexual qualities and behaviors, strongly influences how individuals experience and interpret sexuality (Andersen & Cyranowski, 1994; Deutsch et al., 2014; Zimmer-Gembeck & French, 2016). The sexual self-concept is comprised of several dimensions, including sexual self- and body-esteem (i.e., a person's self-evaluation of their worth as a sexual being, with regards to their behavior, conduct and attractiveness; Hensel et al., 2011), sexual self-efficacy (i.e., self-perceptions of efficacy in experiencing sexual pleasure; Horne & Zimmer-Gembeck, 2005), and sexual anxiety (i.e., the tendency to feel discomfort or anxiety about one's sexuality; Snell, 2001). These dimensions are important components of sexual health and well-being, and distinguish youth whose experience of sexuality is marked by positive affect and a sense of competence from those who face greater challenges in this sphere (Hensel & Fortenberry, 2013; Kotiuga et al., 2021). Moreover, studies show among both adolescents and adults that these dimensions of the sexual self-concept are associated with more favorable attitudes toward sexual pleasure (Horne & Zimmer-Gembeck, 2005), better perceived capacity to negotiate

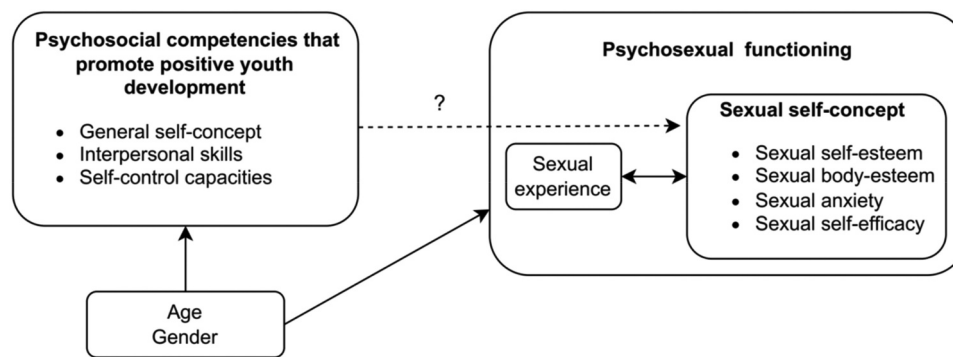


Figure 1. Conceptual framework of the present study.

relational dynamics in the context of intimacy (Evans-Paulson et al., 2021; Kohlberger et al., 2019), greater willingness to adopt safe sex practices (Mastro & Zimmer-Gembeck, 2015), and higher sexual satisfaction (Antičević et al., 2017; Impett & Tolman, 2006).

To date, the factors underlying individual differences relative to adolescents' sexual self-concept are not well understood (Harden, 2014). Available data suggest that the dimensions of the sexual self-concept evolve positively with age and sexual experience (Hensel et al., 2011; O'Sullivan & Brooks-Gunn, 2005; Zimmer-Gembeck et al., 2011). Gender may also differentiate adolescents, as boys have been found to display higher sexual self- and body esteem and lower sexual anxiety, compared to girls (Lafortune et al., 2021; Zimmer-Gembeck & French, 2016). However, studies identifying various sexual self-concept profiles among adolescents, irrespective of age, gender, and sexual experience (Buzwell & Rosenthal, 1996; Kotiuga et al., 2021), indicate that these factors do not fully account for the heterogeneity of adolescents' sexual self-concept.

Adolescents' Psychosocial Competencies and Sexual Self-Concept

Parallel to the sexual self-concept, adolescents form an individual sense of self that is influenced by the valence and clarity of their general self-concept, that is, their feelings of self-worth and the stability and consistency of their self-beliefs (Campbell et al., 2003; Harter, 2012). The general self-concept has been shown to be associated with psychosocial functioning. Indeed, adolescents who report more positive and internally consistent self-views are characterized by greater psychological adjustment, well-being, and relationship satisfaction (Becht et al., 2017; Lewandowski et al., 2010; Mertens et al., 2022; Van Dijk et al., 2014). According to existing theories, the general self-concept provides the base from which the sexual self-concept develops (Deutsch et al., 2014). To date, however, few studies have examined these relationships. Among both adolescents and adults, self-esteem, the evaluative component of the general self-concept, and sexual self-esteem have been found to be associated (O'Sullivan et al., 2006; Oattes & Offman, 2007). In addition, the valence and clarity of the general self-concept are positively linked to sexual body esteem (Horne & Zimmer-Gembeck, 2005), sexual self-efficacy (Hucker et al., 2010), and sexual pleasure (Galinsky & Sonenstein, 2011) among adults. Further studies are needed to

determine if these associations also apply to adolescents. A clearer and more positive general self-concept during adolescence likely facilitates the integration of sexuality-related changes as well as the management of issues and uncertainties that are part of normative psychosexual development.

The general and sexual self-concept develop in the context of social interactions, which rely on adolescents' interpersonal skills (Deutsch et al., 2014). Adaptive interpersonal skills support the experience of satisfying relationships and positive external feedback, which inform adolescents' self-concept (Sebastian et al., 2008). Over time, interpersonal skills extend to intimate relationships and inform adolescents' and adults' experience of sexuality (Adamczyk & Segrin, 2016; Kågesten & van Reeuwijk, 2021; Kohlberger et al., 2019). Studies show that adolescents who perceive that they are able to communicate with partners about sexual topics and to express themselves in intimate relationships present greater self- and body esteem and sexual self-efficacy toward the experience of sexual pleasure, and lower sexual anxiety (Horne & Zimmer-Gembeck, 2006; Kotiuga et al., 2021). Given that the extent of adolescents' experience with intimate relationships varies greatly, it appears important to gain a better understanding of the interpersonal skills (e.g., initiation of relationships, conflict management, emotional support) that are associated with the positive development of the sexual self-concept.

Self-control capacities – that is, the ability to exert control over emotions and impulses (Arnevik et al., 2009; Verheul et al., 2008) – have been tied to the successful management of developmental challenges that arise during adolescence (Gestsdottir & Lerner, 2008; Speranza & Midgley, 2017). Indeed, youth displaying better self-control capacities, including emotion regulation and effortful control, report a stronger sense of mastery over their own functioning (De Ridder et al., 2018; Light, 2017), a greater sense of well-being (Rapee et al., 2019), and the experience of more favorable social feedback and positive relationships (Allemand et al., 2019; Tangney et al., 2004), which likely contribute to shaping their self-concept. Individual differences in self-control may thus influence youths' psychosexual development. To date, however, self-control capacities have mostly been examined with relation to the behavioral dimension of sexuality, such as sexual behavior and risk-taking (Hope & Chapple, 2004; Magnusson et al., 2019; Raffaelli & Crockett, 2003). Future studies should also target its cognitive and affective dimensions. Indeed, self-

control capacities are involved in sexual expression, emotions, decision making, and satisfaction – all of which inform the developing sexual self-concept (Dewitte, 2014; Dubé et al., 2020; Fischer et al., 2022; Tutino et al., 2018).

The Current Study

The study's main objective was to investigate the associations of adolescents' general self-concept, perceived interpersonal skills and self-control capacities with their sexual self-concept, while controlling for age, gender, and sexual experience with a partner. Adolescents presenting a general self-concept characterized by a greater sense of self-worth, more internally consistent self-beliefs, and more positive perceptions of their self-control and interpersonal skills were hypothesized to display higher sexual self- and body esteem, higher sexual self-efficacy, and lower sexual anxiety. The study also aimed to determine whether age, gender and sexual experiences, as well as the interaction between gender and sexual experience, moderate the association between perceived psychosocial competencies and sexual self-concept.

Method

Participants

To meet the inclusion criteria and be included in the analytic sample, participants were required to be at least 14 years old, complete the sociodemographic questionnaire, and provide reliable response patterns. From the initial pool of 1757 adolescents who accessed the questionnaire, 144 participants did not meet the minimum requirement, 3 participants did not meet the age requirement, and 26 participants displayed inconsistent response patterns. Consequently, the study sample consisted of 1,584 participants aged 14 to 18 years ($M = 15.53$, $SD = 0.93$), including 787 girls (49.7%) and 782 boys (49.4%). Additionally, 15 participants identified as non-binary (0.9%). Due to their underrepresentation, non-binary youth were not included in the study sample. However, to ensure inclusivity, descriptive statistics and correlations of study variables for non-binary participants are reported in the supplemental materials. Participants were recruited from nine schools in the province of Quebec, Canada. According to the Quebec Ministry of Education and Higher Education, two schools were ranked in the lowest socioeconomic rankings, three were ranked in the midrange, and four were listed in the highest ranks (Gouvernement du Québec, 2022). The ethnic backgrounds of the participants included White (80.4%), Black (4.7%), Latin American (1.8%), Native (4.8%), Middle Eastern (2.4%), South Asian (0.3%), East Asian (0.8%), Mixed heritage (0.6%) and other (3.0%). Most participants (86.5%) reported being attracted exclusively or primarily to the other gender, 2.6% exclusively or primarily to the same gender, 5.5% identified as either bisexual or fluid in their sexual attraction, 1.6% reported no sexual attraction, and 3.8% were questioning their sexual orientation. As for romantic and sexual involvement over the lifetime, 42.0% of participants reported having been involved in a romantic relationship at least once, 98.4% had

engaged in some form of autoerotic sexual activity (e.g., sexual fantasizing, masturbation), 74.7% had engaged in non-genital sexual contacts with a partner (e.g., holding hands, hugging or kissing a partner or being naked with a partner) and 41.1% had experienced genital sexual contacts with a partner (i.e., masturbating a partner, oral sex).

Procedure

The present study was part of a larger investigation on adolescent psychosexual development. Following the presentation of the project to teachers, school administrators and pedagogical advisors from 23 schools in the Quebec City region, nine agreed to partake in the recruitment. Participants' recruitment was done by the first author who presented the study to students from 71 classes – in person or online – and responded to their questions, at the beginning of the class period that was dedicated to the completion of the study. Due to the COVID-19 pandemic and the resulting implementation of a hybrid teaching approach, some sessions were conducted in-person while others were held virtually. In all cases, the researcher presented the study and remained available throughout the period to respond to any inquiries, either in-person or through a private virtual setting. Students who agreed to take part in the study accessed a secure website (Qualtrics Research Suite), which contained a description of the study, a consent form, and the self-report questionnaires that required approximately 45 minutes to complete. The questionnaire was anonymous ensuring that responses could not be traced back to any specific individual. Prior to the study, a letter was sent to parents informing them about the study, but as stipulated in provincial laws, parental consent was not necessary. Ethical approval was obtained from the Ethics Committee for Research with Human Subjects of the Université Laval.

Measures

Participants completed a sociodemographic questionnaire assessing gender, age and level of education.

Sexual Self-Concept

The Sexual Self-Esteem and Sexual Anxiety subscales of the Multidimensional Sexual Self-Concept Questionnaire (MSSCQ; Snell, 2001) were used. Each subscale includes five items (e.g., “I feel good about the way I express my sexual needs and desires”; “I feel anxious when I think about the sexual aspects of my life”) that are rated on a five-point Likert-type scale (1 = *not at all characteristic of me* to 5 = *very characteristic of me*). The mean scores were computed for each subscale, with higher scores indicating higher levels of sexual esteem or anxiety. Both subscales showed good to excellent internal consistency (sexual self-esteem $\alpha = .91$; sexual anxiety $\alpha = .85$) with the study sample.

Sexual body esteem was assessed using the five-item scale of the Female and Male Sexual Subjectivity Inventory (Zimmer-Gembeck, 2019). The items (e.g., “I am confident that a romantic partner would find me sexually attractive”) were rated on a five-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*) and computed into a mean score. In the current sample, Cronbach's α was adequate = .68.

The Sexual Self-Efficacy subscale of the MSSQ (Horne & Zimmer-Gembeck, 2005; Zimmer-Gembeck, 2019) was used to measure the perceived capacity to derive sexual pleasure and satisfaction from sexual experiences (e.g., “I am able to ask a partner to provide the sexual stimulation I need”). The subscale is comprised of four items, rated on a five-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). The mean score was computed, with higher scores indicating a greater sense of efficacy toward the experience of sexual pleasure. The subscale showed good internal consistency ($\alpha = .78$) with the study sample.

Partnered Sexual Experiences

Participants were asked to report their engagement in specific partnered sexual practices, such as masturbation of/by a partner, oral sex, vaginal intercourse, and anal sex, with a partner (yes/no), as described in Kotiuga et al. (2021). Those who reported participating in one or more of these partnered genital sexual practices were classified under “Sexual experience with a partner” (1), while those who did not engage in these practices were grouped under “No sexual experience with a partner” (0).

General Self-Concept

The quality and stability of the general self-concept was measured using the five-item Global Self-Worth subscale of the revised Self-Perception Profile for Adolescents (SPPA; Harter, 1988; Wichstrøm, 1995) and the Self-Concept Clarity Scale (SCCS; Campbell et al., 1996). The five items of the SPPA (e.g., “I like the kind of person I am”) were rated on a four-point Likert-type scale (1 = *describes me very well* to 4 = *describes me very poorly*), while the 12-items of the SCCS (e.g., “In general, I have a clear sense of who I am and what I am”) were rated on a five-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). For both scales, items were computed into a single mean score. A high correlation was found between the two scales ($r = .62$). Therefore, a single composite score was created by combining the two scales, which were previously transformed into Z-scores as they did not use the same measurement scale. Exploratory factor analysis yielded a one-factor solution, with the factor having an eigenvalue of 1.62 and factor loadings of .90, and accounting for 81.02% of the variance. The scale showed excellent internal consistency, with a coefficient alpha of .91.

Interpersonal Skills

The Interpersonal Competence Questionnaire (Buhrmester et al., 1988; Schlegel et al., 2013) was used to assess five domains of interpersonal functioning: (a) initiating relationships; (b) disclosing personal information; (c) asserting displeasure with others’ actions; (c) providing emotional support and advice; and (d) managing interpersonal conflicts. The questionnaire includes 40 items rated on a five-point Likert-type scale ranging from 1 (e.g., *I’m poor at this; I’d feel so uncomfortable and unable to handle this situation*) to 5 (e.g., *I’m extremely good at this; I’d feel very comfortable and could handle this situation very well*). To test the study hypothesis in the most parsimonious manner, a single mean interpersonal skills score was computed. The total score had excellent

internal consistency ($\alpha = .93$) with the study sample. Moreover, exploratory factor analysis showed loadings between 0.658 and 0.712 on one latent factor.

Self-control Capacities

The Emotion Regulation and the Effortful Control subscales of the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008) were used to measure overall self-control. Each subscale is comprised of seven items (e.g., Emotion Regulation “*I have such strong feelings that I easily lose control of them*”; Effortful control “*I often act before I think*”). Participants responded to items on a Likert-type scale ranging from 1 (*fully disagree*) to 4 (*fully agree*). To ensure a more parsimonious model and focus on the self-control domain rather than its different dimensions, the study combined the strongly correlated items from both subscales into a single mean score ($r = .64, p < .001$). Higher scores indicate higher self-control capacities. In the current sample, the scale showed high internal consistency ($\alpha = .87$).

Statistical Analyses

All analyses were performed in SPSS 28 and Mplus 8.7 (Muthén & Muthén, 2017). First, descriptive analyses were used to examine the distributions of the study variables. Next, mean scores for psychosocial competencies and dimensions of the sexual self-concept were compared across age groups. A two-way analysis of variance (ANOVA) was performed to analyze the effect of gender, sexual experience with a partner, and their combined effects on dimensions of the sexual self-concept and psychosocial competencies. Next, correlational analyses were performed to examine the relationships between dimensions of the sexual self-concept and psychosocial competencies.

In order to test the study hypotheses, path analyses were conducted to examine the associations between adolescents’ general self-concept, perceived interpersonal skills and self-control capacities with dimensions of the sexual self-concept (i.e., sexual self- and body esteem, sexual self-efficacy and sexual anxiety). First, the model was tested in the total sample with age, gender and sexual experience with a partner as control variables. Second, three multigroup pathway analyses were conducted in which all path coefficients were constrained to be equal between age groups, sexually experienced and non-experienced adolescents, as well as between girls and boys. A fourth multigroup pathway aiming to assess whether the joint effect of gender and sexual experience moderated the relationships between psychosocial competencies and dimensions of the sexual self-concept was conducted. Based on Kline’s (2011) guidelines adjustment between predicted and observed data was investigated using the following fit indices: the maximum likelihood chi-square statistic, the ratio of chi-square to degrees of freedom (χ^2/df), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the Root mean square error of approximation (RMSEA). The suggested cutoff criteria for good fit are as follows: a non-significant chi-square suggesting that there is no significant discrepancy between the model and the data, a ratio of chi-square to degrees of freedom less than three, a CFI ≥ 0.95 (Hu &

Bentler, 1999), a TLI ≥ 0.90 , and a RMSEA ≤ 0.05 (Browne et al., 1993; MacCallum et al., 1996). Missing data (14%) were handled with Full Information Maximum Likelihood to estimate model parameters using all available raw data that, based on Little's MCAR test, were missing completely at random, $\chi^2(191) 206.256, p = .213$.

Results

Descriptive Statistics and Correlations

The descriptive statistics pertaining to the main study variables and group comparisons across age categories are reported in Table 1. Results showed that higher age was associated with increased levels of sexual self-esteem and body esteem, as well as lower levels of sexual anxiety. However, no significant differences were found between age groups regarding psychosocial competencies. Table 2 displays the results of a two-way ANOVA analysis that investigated group differences between girls and boys, as well as differences between youth who reported sexual experience with a partner and those who did not, in relation to their sexual self-concept and psychosocial competencies. While there was no significant interaction between gender and sexual experience with a partner, the analysis of simple main effects showed that there were significant differences between gender and sexual experience groups on both sexual self-concept and psychosocial competencies. Compared to girls, boys tended to exhibit significantly higher sexual body esteem and lower sexual anxiety, as well as a more positive general self-concept, and a more favorable view of their self-control capacities. In addition, adolescents who

reported sexual experience with a partner had a more positive sexual self-concept, as evidenced by higher sexual self-esteem and body esteem, sexual self-efficacy, and lower sexual anxiety. Although the effects were small, youth who reported having sexual experience with a partner displayed significantly more positive perceptions of their interpersonal skills and reported lower levels of perceived self-control.

Bivariate correlations between study variables are shown in Table 3. A moderate positive correlation was found between sexual self-esteem and sexual self-efficacy, which were both mildly positively associated with sexual body-esteem. Sexual anxiety was negatively associated with sexual self- and body esteem as well as sexual self-efficacy. With regards to psychosocial competencies, the general self-concept was moderately positively associated with both perceptions of interpersonal skills and self-control capacities. A mild positive correlation was found between adolescents' perceptions of their interpersonal skills and their evaluation of their self-control capacities. Moreover, the general self-concept and perceived interpersonal skills were significantly associated with all dimensions of the sexual self-concept, with the strength of correlations varying from mild to moderate. Self-control capacities were mildly positively associated with sexual body esteem and mildly negatively associated with sexual anxiety.

Associations between Perceived Psychosocial Competencies and the Sexual Self-Concept

The path model used to assess the associations between psychosocial competencies and dimensions of the sexual self-

Table 1. Descriptive statistics and comparison of sexual self-concept dimensions and psychosocial competencies across age groups.

Variables	n	range	Full sample	14	15	16	17–18	F	η^2
			N	n (%)	n (%)	n (%)	n (%)		
			1564	171 (10.9)	540 (34.5)	579 (37.0)	274 (17.5)		
			M (SD)	M (SD)	M (SD)	M (SD)	M (SD)		
Sexual self-esteem	1549	1–5	2.89 (1.03)	2.77 (1.02)	2.83 (1.02)	2.89 (1.04)	3.05 (1.04)	3.66*	0.01
Sexual body-esteem	1558	1–5	2.99 (0.86)	2.87 (0.86)	2.91 (0.84)	3.00 (0.87)	3.18 (0.84)	7.11***	0.01
Sexual anxiety	1559	1–5	2.25 (0.94)	2.33 (0.91)	2.29 (0.94)	2.25 (0.96)	2.12 (0.94)	2.63*	0.01
Sexual self-efficacy	1558	1–5	3.48 (0.79)	3.25 (0.82)	3.45 (0.77)	3.52 (0.77)	3.60 (0.80)	7.55***	0.01
General self-concept	1551	–3–2	0.01 (0.90)	–0.03 (0.90)	0.01 (.89)	–0.03 (.92)	0.12 (0.86)	1.33	<.001
Interpersonal skills	1456	8–40	29.66 (4.17)	29.63 (4.15)	29.52 (4.05)	29.56 (4.26)	30.17 (4.19)	1.09	<.001
Self-control capacities	1423	1–4	2.74 (0.57)	2.73 (0.57)	2.74 (0.55)	2.71 (0.59)	2.81 (0.56)	1.31	<.001

* $p < .05$. *** $p < .001$.

Table 2. Analysis of sexual self-concept dimensions and psychosocial competencies by gender and sexual experience with a partner.

Variables	Girls		Boys		Main effect for gender	F	η^2	Main effect for sexual experience with a partner	F	η^2	Interaction between gender and sexual experience	
	Sexual experience with a partner (n = 341)	No sexual experience with a partner (n = 433)	Sexual experience with a partner (n = 302)	No sexual experience with a partner (n = 475)							F	η^2
	M (SD)	M (SD)	M (SD)	M (SD)							F	η^2
Sexual self-esteem	3.27 (0.99)	2.59 (1.02)	3.34 (0.93)	2.59 (0.94)	0.42	<.001	200.71***	.12	0.42	<.001	0.00	<.001
Sexual body-esteem	2.84 (0.86)	2.70 (0.85)	3.30 (.80)	3.15 (0.79)	111.14***	.07	12.15***	.01	1.87	<.001	0.02	<.001
Sexual anxiety	2.19 (0.93)	2.50 (0.97)	2.02 (0.86)	2.20 (.93)	22.38***	.01	26.55***	.02	1.87	<.001	0.02	<.001
Sexual self-efficacy	3.75 (0.74)	3.27 (0.77)	3.75 (0.79)	3.31 (0.70)	0.28	.01	141.00***	.08	0.02	<.001	0.02	<.001
General self-concept	–0.21 (0.80)	–0.23 (0.80)	0.23 (0.87)	0.27 (0.90)	112.08***	.07	0.00	<.001	0.46	<.001	0.02	<.001
Interpersonal skills	30.77 (3.83)	29.05 (3.72)	30.74 (4.16)	28.82 (4.51)	0.37	<.001	68.91***	.05	0.22	<.001	0.02	<.001
Self-control	2.58 (0.58)	2.73 (0.56)	2.73 (0.57)	2.89 (0.53)	27.74***	.02	26.77***	.02	0.02	<.001	0.02	<.001

*** $p < .001$.

Table 3. Descriptive statistics and correlations for study variables.

	1	2	3	4	5	6	7	8	9	10
1. Sexual self-esteem	–									
2. Sexual body-esteem	.18**	–								
3. Sexual anxiety	-.11**	-.45**	–							
4. Sexual self-efficacy	.38**	.22**	-.19**	–						
5. General self-concept	.20**	.48**	-.38**	.17**	–					
6. Interpersonal skills	.31**	.28**	-.23**	.37**	.33**	–				
7. Self-control capacities	.01	.16**	-.16**	.01	.42**	.17**	–			
8. Age	.08**	.11**	-.06*	.12**	0.03	.04	.03	–		
9. Gender	0	-.26**	.12**	0	-.27**	.03	-.15**	-.05	–	
10. Sexual experience with a partner	.34**	.07**	-.13**	.29**	-.01	-.22**	-.14**	.21*	.05*	–

* $p < .05$. ** $p < .01$.

Gender and sexual experience with a partner were dichotomized (0 = boy, 1 = girl; 0 = no reported sexual experience with a partner, 1 = reported sexual experience with a partner).

concept was first assessed simultaneously for all participants. Results suggested a good-fitting model: $\chi^2(7) = 9.61$, $p = .212$; $\chi^2/df = 1.37$; CFI = 0.99; TLI = 0.99; RMSEA = .02, 90% CI = [.00, .04]. Results of the model including all participants are shown in Figure 2. Results show that the presence of a positive general self-concept and favorable views of interpersonal skills are associated with higher sexual self- and body-esteem and sexual self-efficacy, as well as lower sexual anxiety. Moreover, higher self-control capacities were associated with lower sexual self-esteem and body esteem, and sexual self-efficacy, but not significantly related with sexual anxiety. To delve deeper into the observed suppression effects related to self-control capacities, a sequential modeling approach was used. Initially, a model focusing solely on the associations between self-control capacities, alongside control variables, was conducted. Subsequently, two additional models were developed: one incorporating perceived interpersonal competencies and the other incorporating the general self-concept.

The inclusion of the general self-concept resulted in a suppression effect. Overall, the model explained 20.0% of the variance in sexual self-esteem, 28.0% in sexual body esteem, 17.0% in sexual anxiety, and 20.0% in sexual self-efficacy.

The model was compared to a more restrictive model of age invariance, in which all paths were constrained to be equal across age groups. Results show a non-significant chi-square difference for the general fit, $\Delta\chi^2(36) = 24.06$, $p = .936$, indicating that the model was invariant across age groups. Two additional multigroup models were tested to assess the moderation effect of gender and sexual experience with a partner. Results indicated that the model was invariant across girls and boys ($\Delta\chi^2[12] = 17.63$, $p = .124$) and between adolescents with and without sexual experience with a partner ($\Delta\chi^2[12] = 18.01$, $p = .115$). A fourth multigroup model explored the moderating effect of the interaction between gender and sexual experience with a partner. The results showed a non-significant chi-

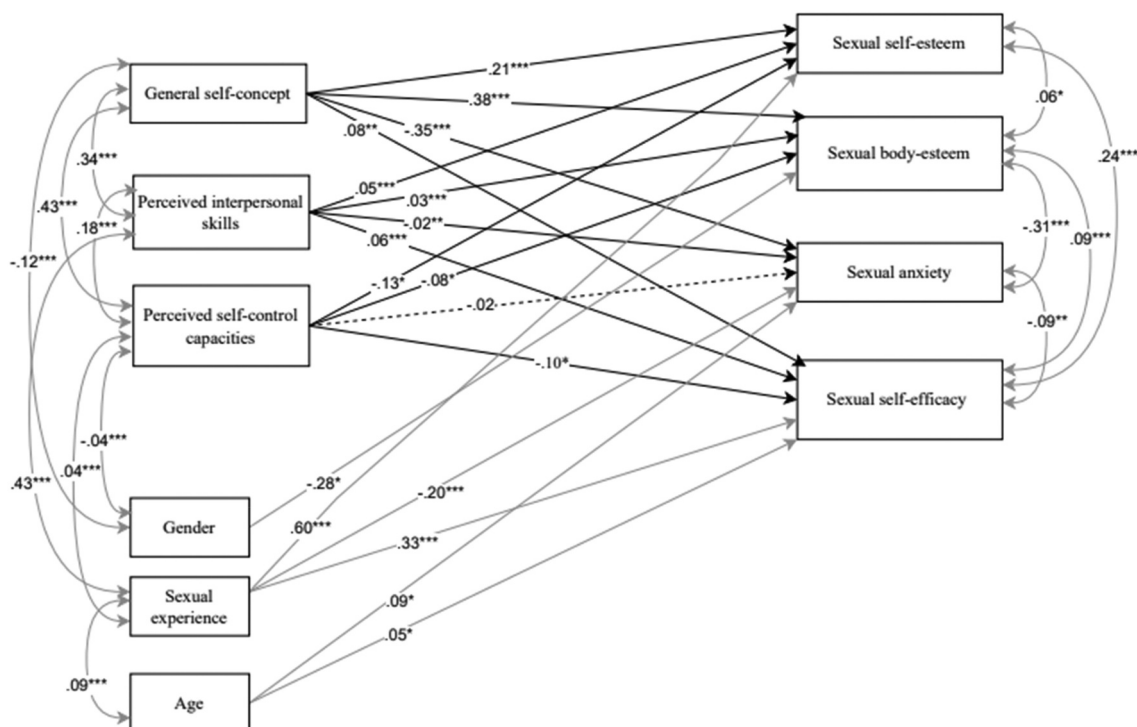


Figure 2. Model of the associations between psychosocial competencies and dimensions of the sexual self-concept (N = 1569).

Note. Significant associations are depicted with solid black arrows. Coefficients are standardized regression coefficients. Age, gender and sexual experience with a partner were included as control variables. Only significant covariances, which are depicted with solid gray arrows, were included in the model.

square difference, $\Delta\chi^2(36) = 41.48, p = .240$, indicating that the model was invariant across all four groups.

Discussion

The purpose of this study was to examine the relationship between adolescents' sexual self-concept and psychosocial competencies. Overall, the findings suggest that the interplay between the general self-concept, perceived interpersonal skills and self-control capacities provides a framework to understand individual differences in adolescents' sexual self-concept. These findings shed additional light on the relationship between psychosocial and psychosexual functioning during adolescence and highlight the need to examine both normative and positive dimensions of sexuality within the broader context of development. This approach can lead to a more precise understanding of the factors associated with positive sexuality development in adolescence.

In line with the study hypothesis, the results indicate that adolescents who hold clearer and more positive self-views also have a more positive sexual self-concept characterized by higher sexual self- and body esteem, higher sexual self-efficacy and lower sexual anxiety. Interestingly, the strongest association between the general and sexual self-concept was found with regard to sexual body esteem. Previous studies have established a strong association between body image and general self-concept, and feelings of self-worth among adolescents (Davison & McCabe, 2006; Gatti et al., 2014; Harter, 2012). Additionally, self-concept clarity has been linked to body image satisfaction, as it reduces the inclination to adopt societal standards or make comparisons with others (Vartanian, 2009; Vartanian & Hayward, 2017). The cross-sectional findings from the present study suggest that the relationship between the general self-concept and sexual body-esteem is akin to the relationship between self-concept and body image observed in prior studies. Moreover, results from the study highlight a strong negative association between the general self-concept and sexual anxiety. While most adolescents likely experience some degree of apprehension toward sexuality, its extent may be mitigated by a positive and clear self-concept. For adolescents and adults with persistently high sexual anxiety, it is likely that a negative self-concept coupled with a high intolerance of uncertainty, which goes hand in hand with low self-concept clarity (Kusec et al., 2016), are associated with their reported discomfort with sexuality.

The study found that perceived interpersonal skills were positively correlated with sexual self-esteem, body esteem, and self-efficacy, and negatively associated with sexual anxiety. However, when accounting for the effects of general self-concept and self-control capacities in the path model, the strength of these associations weakened. These results align with previous research indicating that good interpersonal skills can lead to positive social feedback and the experience of satisfying relationships, which inform adolescents' general self-concept (Segrin et al., 2016; Segrin & Taylor, 2007; Ybrandt, 2008). The present study adds to the literature by showing that these associations also extend to adolescents' developing sexual self-concept. While additional research is warranted, the current findings suggest that adolescents' sense of competence and

mastery regarding their sexuality, and especially their sexual self-esteem and sexual self-efficacy, is closely tied to their broader sense of social confidence and aptitude.

Results indicated that the relationship between self-control capacities and dimensions of the sexual self-concept is more complex than initially hypothesized. The results of the correlation analysis revealed that adolescents who reported higher levels of self-control also reported higher sexual body esteem and lower sexual anxiety. This finding is consistent with earlier research indicating a connection between lower self-control and various forms of anxiety, and further suggests that such a connection extends to sexual anxiety (Amstadter, 2008; Cisler et al., 2010; Turk et al., 2005). However, in the path model including the general self-concept and perceived interpersonal skills, self-control capacities lost their significant association with sexual anxiety and showed a negative association with sexual self- and body esteem and sexual self-efficacy. This is surprising given that self-control is known to be associated with sexual health promoting behaviors in adolescents (Magnusson et al., 2019, 2019), and sexual well-being in adults (Bigras et al., 2017; Dosch et al., 2016; Dubé et al., 2020; Fischer et al., 2022; Tutino et al., 2017). These findings may be at least partially explained by the suppressor effect – that is, the change in predictive power of self-control capacities when the general self-concept and perceived interpersonal skills were included in the model (Pandey & Elliott, 2010; Watson et al., 2013). Upon closer analysis of the data, it was found that the inclusion of the general self-concept in the model resulted in such an effect. These results emphasize the importance for future studies to consider the sexual self-concept against the broader framework of the general self-concept. An alternative explanation for the findings concerning the association between self-control capacities and sexual self-esteem and efficacy is that lower self-control capacities may manifest as heightened promiscuity and risk-taking behaviors in sexuality, potentially leading to external validation from peers or potential sexual partners. This validation, particularly among adolescents with a negative or unclear general self-concept, may be associated with higher sexual self-esteem and sexual self-efficacy (Crandall et al., 2018; Raffaelli & Crockett, 2003). Further research is needed to understand the intricate dynamics of psychosocial competencies and their role in promoting sexual health and well-being among adolescents.

Moderating Effect of Gender and Sexual Experience with a Partner

Previous studies have shown that age, gender and sexual experience inform developing dimensions of the sexual self-concept. In the present study, however, the associations between psychosocial competencies and dimensions of the sexual self-concept did not significantly differ across age groups, gender, or sexual experience status. In addition, when the joint effects of gender and sexual experience with a partner were considered, all four groups remained comparable with no significant differences observed. These results suggest that positive evaluation of one's psychosocial competencies predicted the internalized sense of one's sexual self in a similar manner across girls and

boys in this sample. Despite the lack of a moderating effect, there remains an apparent association between age, gender and sexual experience with a partner on psychosocial competencies and dimensions of sexual self-concept, which is consistent with prior studies (Lafortune et al., 2021; van de Bongardt & de Graaf, 2020; Zimmer-Gembeck & French, 2016). Indeed, the results hint that there may be a favorable evolution of dimensions in the sexual self-concept between early and late adolescence. However, there were no significant differences in psychosocial competencies with respect to age, underscoring the importance of early support and development in this domain. Moreover, youth who were sexually experienced with a partner both rated their interpersonal skills more favorably and assessed their sexual self-concept more positively. Similarly, boys rated their general self-concept more positively, as well as the two dimensions of sexual self-concept most strongly associated with it: sexual body-esteem and sexual anxiety. Longitudinal studies are needed to assess the directionality of the relationships between sexual experience, psychosocial competencies and sexual self-concept.

Study Limitations

Findings from the present study must be interpreted in light of certain limitations. First, the use of self-reported questionnaires is known to be associated with social desirability and question comprehension biases, which may have an impact on the results. Additional biases may have permeated the results as a portion of the sample completed the study at home (an uncontrolled environment), in the context of the shift to online education due to the COVID-19 pandemic. A second limitation concerns the narrow view of self-control capacities as assessed by emotion regulation and effortful control. The present study thus did not account for “too much self-control,” which characterizes individuals with overcontrolled personality tendencies. Yet, studies have shown that traits pertaining to perfectionism, inflexibility, and performance monitoring can interfere with relationships and sexuality (Baams et al., 2014; Dimaggio et al., 2018; Meeus et al., 2011). Additional studies accounting for both overcontrolled and under controlled tendencies are required to better delineate how self-control can inform adolescent sexuality. A third limitation concerns the decision to use genitalized sexual practices as an indicator of sexual experience with a partner without accounting for the extent or perceived quality of such sexual activities that may be associated with both psychosocial competencies and personal sexual concept dimensions. Finally, a fourth limitation concerns the small sample of non-binary adolescents. Indeed, the present study did not allow the evaluation of the psychosocial competencies and sexual self-concept of non-binary youth. Available research suggests that gender-diverse individuals face unique challenges to their mental and sexual well-being (Kennis et al., 2021, 2022). Therefore, it is critical that studies specifically target this population to identify factors that may positively influence their psychosexual development.

Implications and Conclusions

Integrating sexuality into one’s sense of self and relationships is an important challenge of adolescence, and some are better

prepared to engage in this process than others. The study fills gaps in the existing literature by establishing bridges between adolescents’ psychosocial and sexual functioning through a positive development framework. Findings show that the valence and clarity of the general self-concept, perceptions of interpersonal skills, and self-control capacities are linked with the sexual self-concept, irrespective of age, gender and sexual experience. This study also provides new way of conceptualizing individual differences in terms of how adolescents think and feel about themselves as sexual beings. In addition, the results offer empirical support for education and intervention programs that aim to improve adolescent sexual health by integrating both sexuality education – to develop specific knowledge, skills, and attitudes – and the promotion of broader psychosocial competencies. With the intention of fostering broader psychosocial competencies, education and intervention programs can incorporate various pedagogical activities. For example, role-playing exercises can enhance interpersonal communication abilities, self-reflection activities can increase self-awareness and help identify personal strengths and areas for growth, and mindfulness exercises can improve self-control capacities. By combining these approaches, education and intervention programs may effectively promote positive outcomes for adolescent sexual health. Future research could build on these findings by considering the interface between sexuality and other facets of development, such as identity, affective, cognitive, and interpersonal functioning, and social identification, within the broader ecological context to increase current understanding of positive adolescent psychosexual development.

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