

Sexual dysfunction among youth : an overlooked sexual health concern

C Moreau, A Kågesten, R Blum, N Bajos

Purpose This study explores sexual functioning problems among youth and their association with sexual satisfaction, sexual violence and histories of STIs and unintended pregnancies. For the purpose of this study sexual functioning problems was defined as problems related to pain during intercourse, lack of sexual desire, lack of sexual pleasure and problems of orgasm.

Methods Data were drawn from the 2010 French national sexual and reproductive health survey comprising a random sample of 2309 respondents 15-24 years. Our analysis includes 944 females and 731 males who reported ever having had sexual intercourse.

Results Half of young women (48%) reported at least one sexual problem versus 23% of young men. More than half (57%) did not consider these difficulties to be a problem for their sexuality. Altogether, 31% of young women cited at least one sexual problem causing distress as compared to 9% of young men. Sexual functioning problems were strongly and inversely related to sexual satisfaction for both sexes and to a recent diagnosis of STI and unintended pregnancies for young women. Sexual functioning problems causing distress were also correlated with a history of an unintended pregnancy among young men.

Conclusion While most young people enjoy a healthy sexual life, difficulties of sexual functioning are common among youth, especially among young women. Health programs should screen and address sexual dysfunction, which substantially reduce youth sexual wellbeing.

Introduction

WHO defines sexual health as a continuum of physical, psychological, and socio-cultural wellbeing associated with sexuality (1). While a growing body of work addresses the complex interrelation of the different domains of sexual health including positive health outcomes related to sexual activity among adult populations, research among youth has traditionally taken a risk reduction perspective, mostly concentrating on sexually transmitted Infections (STIs/HIV), unintended pregnancy, and sexual coercion in light of their significant contribution to disability adjusted life years lost for youth (2). There is growing recognition however, that youth sexual health entails a broader range of physical, emotional and psychosocial responses to sexual interactions (3,4). Studies in adult populations reveal high prevalence of sexual functioning problems (5), which, according to ICD-10 classification, encompasses a spectrum of symptoms including lack of sexual desire, lack of pleasure, failure of genital response, orgasmic dysfunction, premature ejaculation and dyspareunia (2,6). The nature and frequency of these problems vary by sex and age, women mostly citing libido and problems with orgasm while men mostly report premature ejaculation and erectile dysfunction (6). Very little is known about these health issues in adolescent populations (7), even though some sexual difficulties emerge early in the sexual trajectories of adults who suffer sexual dysfunction (8). A few studies among youth reveal high levels of sexual problems, including pain, lack of desire and failure of genital response (9). A recent study on sexual experiences and relationships conducted by Sullivan among 411 Canadian adolescents indicated that half of the participants reported at least one sexual problem (10). While sexual functioning problems are frequent, sex-related distress is less prevalent: half of those who reported sexual problems suffered clinically significant sexual related distress (10).

Sullivan's study provides a thorough investigation of sexual functioning and sexual distress using validated instruments of male and female sexual functioning. Yet, the small non-

representative sample size limits the generalizability of the findings while the focus on sexual functioning alone does not allow an exploration of the effect of sexual functioning on sexual satisfaction. So too, it does not allow to investigate the intersection of sexual functioning with other domains of sexual health that are highly relevant to youth, including STIs and unintended pregnancy.

Grounded in WHO's affirmative conceptualization of sexual health, the present study aims to provide new information on the prevalence of youth sexual functioning problems and its intersection with other domains of sexual health including sexual satisfaction, STIs and unintended pregnancies. We refer to sexual functioning problems as opposed to sexual dysfunction as our measures are self-reported. In this analysis, sexual functioning problems included lack of sexual desire, lack of pleasure during intercourse, problems of orgasm and pain during sexual intercourse, for both sexes and vaginal dryness for females and problems of erection and premature ejaculation for males.

The present study addresses three main questions: what are the patterns of youth sexual functioning problems and related distress, how do these patterns differ by sex and how are these problems related to other domains of sexual health. In this article we refer to sex differences in behaviors and outcomes as we compare males and females without accounting for their gender identity.

Methods

Data are drawn from the 2010 French national sexual and reproductive health survey, FECOND, comprising 8475 individuals aged 15 to 49 years residing in France. Participants were selected following a two-stage probability sampling method. Phone numbers (including both landline and cell-phones) were generated using random digit dialing. One individual per phone number was selected for participation. The refusal rate was estimated at 20.2 % (11).

After having given verbal consent, participants responded to a 40-minute phone questionnaire. The study was approved by the relevant French government agency (Commission Nationale de l'Informatique et des Libertés) and secondary analysis was approved by the Bloomberg School of Public Health Institutional Review board at Johns Hopkins University.

The present analysis is restricted to respondents who were aged 15 to 24 years (n=2309) and who had ever had sexual intercourse (n=944 young women and n=731 young men) assessed as a positive response to any of two questions asked to all respondents, "Have you ever had sexual intercourse with a woman?" and "Have you ever had sexual intercourse with a man?" The definition of sexual intercourse did not differ between types of sexual practices. Questions on sexual functioning and satisfaction were only asked of respondents who reported having had sexual intercourse in the last 12 months (n=886 young women and n=679 young men). We further excluded participants who stopped the survey before the sexual health module (n= 41 young women and n=32 young men). Our final sample comprised 842 young women and 642 young men.

Topics explored in the multi-thematic FECOND study included socio-demographic status, reproductive histories, past and current sexual health indicators. Participants were asked a number of questions exploring sexual activity, including age at first voluntary intercourse, number of lifetime female and male sexual partners and number of acts of sexual intercourse in the last 4 weeks. Five domains of sexual health were considered in the analysis 1) history of STI in the last 5 years; 2) history of unintended pregnancy; 4) sexual functioning problems in the last 12 months; 5) forced sex in the last 12 months and 6) sexual satisfaction at the time of the survey. In this study, we could not investigate the correlation between sexual functioning problems and unmet need for contraception due to insufficient number of respondents with an unmet need for contraception in this sample (n=9 young women and n=8 young men). All measures were self-reported.

- Recent STI was assessed by a single question asking about any infection diagnosed in the last 5 years.
- Lifetime experience of an unintended pregnancy was a constructed measure summarizing participant's pregnancy intentions at the time of each pregnancy.
- Forced sexual intercourse in the last 12 month was assessed with a single question asking the respondent if they had had forced sexual intercourse against their will in the last 12 months (often, sometimes, rarely or never). A dichotomous measure was constructed opposing never to all other response options.
- Sexual functioning problems in the last 12 months were assessed through a set of 5 questions for females and 6 questions for males. Questions examined the following symptoms: lack of sexual desire, lack of pleasure during intercourse, difficulty reaching orgasm and pain during intercourse. In addition, females were asked about vaginal dryness while males were asked about problems of erections and premature ejaculation. Response options assessing the frequency of each sexual problem in the last 12 months ranged from "often, "sometimes", "rarely", or "never". We examined each of the sexual functioning problems separately and constructed a combined indicator summarizing the number of problems reported (none/ 1 problem/ >1 problem). The constructed indicator is based on the 4 sexual problems that were explored both among males and females in order to compare results by sex. Respondents were also asked if each of sexual problem reported "constituted a problem for their own and/or for their partner's sexuality". Based on this information, we constructed a revised set of measures of sexual problems causing distress for the respondent's sexuality. We refer to this indicator as sexual problems causing distress in the rest of the article.
- The last domain of sexual wellbeing analyzed pertains to sexual satisfaction at the

time of the survey. This was operationalized using the question: “Are you very satisfied, rather satisfied, rather not satisfied, not satisfied at all with your current sexual life?”

We first described sex differences in sexual functioning problems and assess the extent to which each of these problems causes distress. We then explored the interrelation between different sexual functioning problems among males and females. Using the synthesized indicators of number of reported sexual functioning problems or number of problems affecting the respondent’s sexuality, we examined the intersection of sexual functioning problems (overall or problems causing distress) with other domains of sexual health, including sexual satisfaction, sexual violence, STI and unintended pregnancy. Bivariate analysis, using Chi square tests were used to explore differences in sexual functioning by sex and to unveil the associations between sexual functioning/sexual distress with other domains of sexual health.

Results

The mean age of respondents was 20.2 years with no difference by sex ($p=0.23$). Most participants had a partner (man or woman) at the time of the survey, with a greater proportion of young women in a cohabitating partnership than males (31% versus 18%). Young women were more likely to still be in school at the time of the survey, while young men were more likely to be working (Table 1).

Sexually active youth reported a mean age at sexual intercourse of 16.5 for young women and 15.8 for young men. Males reported a greater number of lifetime sexual partners than females (6.4 *versus* 3.6, $p<0.001$) (Table 1). Four percent of participants reported ever having a same sex partner, with no difference by sex. There were no sex differences in the proportion of respondents reporting a history of unintended pregnancy while young women were more

likely to report an STI in the last 5 years than young men (Table 1). Three percent of respondents reported an experience of forced sex in the last 12 months, with no difference by sex.

Table 1: Socio-demographic characteristics and sexual health indicators for sexually experienced youth ages 15 to 24 years (n=1484).

		Young women	Young men	p
Age	15-19 years	45.3%	46.3%	0.75
	20-24 years	54.7%	53.7%	
Partner	No partner	23.4%	36.3%	<0.000
	Non cohabitating partner	45.3%	45.4%	
Education level	Cohabitating partner	31.3%	18.3%	0.03
	< High school graduation	45.4%	52.2%	
	High school graduation	34.9%	32.7%	
Professional situation	>High school	19.7%	15.1%	0.001
	Works	28.6%	41.1%	
	Student	58.3%	47.1%	
	Unemployed	10.2%	10.4%	
Country of birth	Other	2.9%	1.4%	0.28
	France	92.6%	94.3%	
	Foreign country	7.4%	5.7%	
Mean age at first sexual intercourse with a male or female partner		16.5 [16.4-16.7]	15.8 [15.6-16.0]	<0.000
Sexual orientation (based on sex of partner)				
	Heterosexual	96%	96.7%	0.21
	Bisexual	2.8%	1.4%	
	Homosexual	1.2%	1.8%	
	3.6%	6.4%		
Mean number of lifetime partners		[3.3-3.9]	[5.7-7.0]	<0.000
History of unintended pregnancy		10.5%	8%	0.18
STI in the last 5 years		5.3%	1.9%	0.001
Number partners in last 12 months (both male and female)				
	1	75%	61%	
	2 to 4	23%	34%	
5+	2%	5%		
Forced sex in the last 12 months		2.6%	4.1%	0.25
Satisfaction with sexual life				
	Very satisfied	59.2%	50.6%	0.02
	Rather satisfied	34.0%	41.5%	
	Little satisfied	4.7%	5.6%	
Not satisfied at all	2.0%	2.0%		
Frequency of sexual acts in the last 4 weeks				
	No acts	17.0%	22.4%	0.19
	1-4 acts	26.9%	24.2%	
	5-8 acts	17.2%	14.5%	
	8-12 acts	17.9%	19.0%	
>12 acts	21%	19.9%		

Young women were more likely to report sexual functioning problems than young men (Table 2). Lack of sexual desire and difficulty reaching orgasm were the most commonly cited problems for young women: 26% and 31% indicated these problems occurred on a regular basis (often or sometimes) *versus* 11% and 8% of young men ($p<0.001$). Pain during sexual intercourse was also more frequent among young women: 21% cited this problem occurred often or sometimes *versus* 4% of young men ($p<0.001$). In addition, 21% of young men indicated they regularly experienced premature ejaculation while a minority (4%) reported problems of erection. One in 11 young women (9%) indicated they experienced vaginal dryness on a regular basis.

Results using the combined sexual problem indicator, common to young men and women, show that three quarters of young women (53%) reported no sexual problems, while a quarter (21%) indicated more than 1 problem occurring often or sometimes in the last 12 months. Among young men, 80% cited no sexual problem while 4% cited more than one problem occurring on a regular basis over the last 12 months ($p<0.001$). The number of problems reported did not significantly vary by age (20.7% of adolescent girls 15-19 years cited more than 1 problem and 4.5% of adolescent boys the same age cited more than 1 problem).

Table 2: Proportion of young women and men reporting specific sexual problems and whether these problems cause distress for their sexuality

Sexual functioning problems		Young women	Young men	<i>p</i>	Sexual functioning problems causing distress		Young women	Young men	<i>p</i>
Vaginal dryness	often	1%			Vaginal dryness causing distress	7.2%			
	sometimes	8%							
	rarely	9%							
	never	81%							
Difficulty reaching orgasm	often	7%	1%	<0.001	Difficulty reaching orgasm causing distress	12.2%	2.7%	<0.001	
	sometimes	21%	6%						
	rarely	19%	10%						
	never	53%	83%						
Lack of desire	often	4%	1%	<0.001	Lack of desire causing distress	12.7%	3.6%	<0.001	
	sometimes	20%	9%						
	rarely	26%	18%						
	never	50%	72%						
Pain during sexual intercourse	often	4%	0%	<0.001	Pain during intercourse causing distress	16%	2.3%	<0.001	
	sometimes	18%	5%						
	rarely	21%	8%						
	never	58%	88%						
Lack of pleasure during intercourse	often	2%	2%	<0.001	Lack of pleasure causing distress	10.1%	2.6%	<0.001	
	sometimes	14%	6%						
	rarely	26%	18%						
	never	59%	74%						
Problem maintaining an erection	often		1%		Problem maintaining an erection causing distress		2.1%		
	sometimes		4%						
	rarely		11%						
	never		85%						
Premature ejaculation	often		2%		Premature ejaculation causing distress		10.2%		
	sometimes		18%						
	rarely		33%						
	never		48%						
Number of reported sexual problems	none	48.0%	77.2%	<0.001	Number of reports sexual problems causing distress	69.1%	91.2%	<0.001	
	1	28.7%	17.2%						
	>1	23.3%	5.6%						

For the four sexual problems that were explored both among young women and men, women were more likely to report a problem causing distress than young men. The difference was

mostly related to reporting a problem in the first place than considering the problem to cause distress: 38% to 65% of young women who reported a sexual problem considered it caused distress versus 37% to 52% of young women (data not shown). Pain during sexual intercourse was the most likely to cause distress for both sexes, followed by problems of erection for young men and vaginal dryness for young women (Table 2). Conversely, difficulty with reaching orgasm was the least likely to cause distress for both sexes.

Altogether, almost one in three young women cited at least one sexual problem causing distress as compared to 8.8% of young men ($p<0.001$). The occurrence of sexual related distress did not vary by age (data not shown).

Table 3 presents the associations between sexual functioning problems and other domains of sexual health for young women and men. Sexual functioning problems were strongly and inversely related to sexual satisfaction: 74% of young women were very satisfied with their current sexual life if they reported no sexual problems versus 36% of those with more than one problem ($p<0.001$). Half of young men (54%) were very satisfied with their sexual life in the absence of problems versus 29% in the case of several sexual problems ($p<0.001$). Associations were stronger when respondents reported sexual problems causing distress: 69% of young women felt very satisfied with their sexual life if they had no sexual problems causing distress versus 24% of those who had more than one problem causing distress ($p<0.001$). Results for young men were similar: 53% felt very satisfied with their sexual life if they had no problems causing distress versus 17% if they reported more than one problem causing distress ($p<0.001$). Sexual functioning problems were also related to a recent diagnosis of STI and marginally related to a history of unintended pregnancy for young women. The relation to unintended pregnancy was no longer significant when only considering problems that caused distress. For young men, sexual functioning problems causing distress was marginally related to unintended pregnancy, the association becoming

highly significant when symptoms caused distress ($p < 0.001$). None of the associations were significant when examining the relation between sexual functioning and forced sexual intercourse in the last 12 months. Taken together, there were no sex differences in the associations observed (none of the interaction tests were significant).

Table 3: Associations between number of sexual functioning problems and other dimensions of sexual health among young men and women.

		Young men Number of sexual functioning problems				Young women Number of sexual functioning problems			
		0	1	>1	p	0	1	>1	p
Sexual satisfaction	Very satisfied	53.8%	44.4%	29.4%	<0.001	74.0%	53.4%	35.9%	<0.001
	Rather satisfied	39.1%	51.4%	46.0%		22.2%	40.3%	50.6%	
	Not very satisfied	5.4%	2.5%	18.2%		3.1%	4.6%	8.2%	
	Not at all satisfied	1.7%	1.7%	6.4%		0.6%	1.7%	5.3%	
Forced sex last 12 mo		3.7%	6.3%	3.5%	0.55	1.3%	2.7%	5.0%	0.27
STI in the last 5 years		2.0%	1.3%	1.8%	0.83	2.6%	7.4%	8.2%	0.01
History of an unintended pregnancy		7.2%	8.4%	18.9%	0.07	11.1%	6.2%	14.5%	0.05
		Number of sexual functioning problems causing distress				Number of sexual functioning problems causing distress			
Sexual satisfaction	Very satisfied	53.4%	26.2%	17.2%	<0.001	68.9%	47.2%	23.8%	<0.001
	Rather satisfied	39.9%	63.1%	50.2%		26.6%	46.5%	57.0%	
	Not very satisfied	5.0%	10.7%	16.5%		3.2%	4.9%	12.7%	
	Not at all satisfied	1.8%	0.0%	16.0%		1.4%	1.5%	6.5%	
Forced sex last 12 months		4.2%	4.1%	0.0%	0.81	1.9%	3.7%	4.3%	0.48
STI in the last 5 years		2.1%	0.0%	0.0%	0.6	3.7%	9.7%	7.7%	0.02
History of an unintended pregnancy		7.2%	9.4%	36.6%	<0.001	9.8%	9.1%	16.3%	0.2

*sexual problems include pain during intercourse, lack of sexual desire, problems reaching orgasm, lack of pleasure during intercourse

In Table 4 we further explored the correlations between sex-specific functioning problems and other sexual health indicators. None of these symptoms were related to STI, forced sex or unintended pregnancy. Problems of erection and premature ejaculation were both related to sexual satisfaction especially if they caused distress while there was no significant association between vaginal dryness and sexual satisfaction among young girls.

Table 4: Sex specific sexual functioning problems and other dimensions of sexual health among young men and women.

		Young men						Young women		
		Problems of erection			Premature ejaculation			Vaginal dryness		
		Yes	No	p	Yes	No	p	Yes	No	p
Sexual satisfaction	Very satisfied	51.3%	38.7%	0.02	53.2%	40.5%	0.09	60.9%	45.0%	0.12
	Rather satisfied	41.7%	40.3%		39.8%	49.6%		32.7%	45.4%	
	Not very satisfied	5.3%	12.3%		5.1%	8.0%		4.6%	6.0%	
	Not at all satisfied	1.7%	8.7%		2.0%	2.0%		1.9%	3.7%	
Forced sex last 12 months		4.1%	2.7%	0.69	4.2%	3.8%	0.84	2.5%	3.4%	0.69
STI in the last 5 years		1.8%	3.2%	0.59	1.6%	3.2%	0.24	5.4%	4.1%	0.56
History of an unintended pregnancy		8.1%	6.6%	0.74	8.3%	7.0%	0.63	10.1%	14.4%	0.31
		Problems of erection causing distress			Premature ejaculation causing distress			Vaginal dryness causing distress		
Sexual satisfaction	Very satisfied	51.2%	31.0%	0.02	52.3%	36.7%	0.03	60.5%	45.5%	0.17
	Rather satisfied	41.6%	41.4%		40.8%	49.7%		33.2%	43.0%	
	Not very satisfied	5.4%	14.8%		4.9%	11.9%		4.5%	6.7%	
	Not at all satisfied	1.7%	12.9%		2.0%	1.7%		1.8%	4.8%	
Forced sex last 12 months				0.22	4.6%	0.0%	0.15	2.6%	1.7%	0.58
STI in the last 5 years		1.9%	0.0%	0.63	1.7%	3.4%	0.26	5.5%	2.8%	0.26
History of an unintended pregnancy		8.2%	2.7%	0.25	8.2%	7.2%	0.76	10.5%	10.7%	0.96

Conclusion

While most adolescents and youth enjoy a healthy sexual life, sexual health problems are common among these populations in France, especially among females. Public health and clinical programs should screen and address sexual dysfunction, which substantially reduce youth sexual wellbeing.

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1. World Health Organization. Sexual Health. (2012). Retrieved on 30 November 2012 from http://www.who.int/topics/sexual_health/en/.
2. Gore FM, Bloem PJN, Patton GC, Ferguson J, Joseph V, Coffey C, Sawyer SM, Mathers CD.(2011). Global burden of disease in young people aged 10-24 years: A systematic analysis. *The Lancet*. 377: 2093-2102.
3. Tolman D and I. McClelland S. (2011). Normative Sexuality Development in Adolescence: A Decade in Review, 2000–2009 *Journal of Research on Adolescence*; 21(1), 242 – 255
4. Wellings K, Mitchell K, Collumbien M. *Sexual Health: A Public Health Perspective*. Open university Press, London ; 2012, 256p
5. Laumann EO, Nicolosi A, Glasser DB, Paik A, Gingell C, Moreira E, Wang T. Sexual problems among women and men aged 40–80 y: Prevalence and correlates identified in the Global Study of Sexual Attitudes and Behaviors. *Int J Impot Res* 2005;17:39–57.
6. K Hatzimouratidis, and D Hatzichristou, MD *Sexual Dysfunctions: Classifications and Definitions*. *J Sex Med* 2007;4:241–250
7. Shifren JL, Monz BU, Russo PA, Segreti A, Johannes CB. Sexual problems and distress in United States women: Prevalence and correlates. *Obstet Gynecol* 2008;112:970–8.
8. Ahern NR, Kiehl EM. Adolescent sexual health and practice: A review of the literature— Implications for healthcare providers, educators, and policy makers. *Fam Community Health* 2006;29:299–315.
9. Goldstein I, Lines C, Pyke R Sr, Scheld JS. National differences in parent-clinician communication regarding hypoactive sexual desire disorder. *J Sex Med* 2009;6:1349–57
10. Lucia F. O’Sullivan, PhD,* Lori A. Brotto, PhD,† E. Sandra Byers, PhD,* Jo Ann Majerovich, MD,‡ and Judith A. Wuest, PhD§ Prevalence and Characteristics of Sexual Functioning among Sexually Experienced Middle to Late Adolescents. *J Sex Med* 2014;11:630–641
11. Legleye S, Charrance G, Razafindratsima N, Bohet A, Bajos N, Moreau C. Improving Survey Participation Cost Effectiveness of Callbacks to Refusals and Increased Call Attempts in a National Telephone Survey in France. *Public Opinion Quarterly*. 2013;77(3):666-95.