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# Parent–Adolescent Sexual Communication and Its Association With Adolescent Sexual Behaviors: A Nationally Representative Analysis in the Netherlands

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*Sexual communication is a principal means of transmitting sexual values, beliefs, expectations, and knowledge from parents to children. Although this area has received considerable research attention, more studies with representative samples are needed to assure that findings are reflective of populations of interest. A nationally representative sample of parent–adolescent dyads ( $N=2,965$ ; mean adolescent age = 13.8 years) in the Netherlands was employed to examine the frequency of parent–adolescent sexual communication and its association with adolescent sexual behaviors (defined as sexual initiation, condom use, and contraceptive pill use). Nine communication topics in the areas of anatomy, relationships and rights, and protection and contraception were examined. In all, 75% of parents reported having discussed at least one topic multiple times with their adolescents. Romantic relationships were discussed most frequently. Hierarchical logistic regression analyses indicated that parent–adolescent sexual communication on protection and contraception was positively associated with adolescent sexual initiation and contraceptive pill use but not condom use. This may reflect that adolescents, when they become sexually active, are more likely to discuss sexuality with their parents. Findings are interpreted within the context of Dutch culture, which is generally accepting of adolescent sexuality and characterized by open sexual communication.*

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Adolescence is a period marked by sexual development and discovery. The role of parents in adolescents' sexual socialization and education has been widely recognized. Parent–adolescent sexual communication is considered an important part of this socialization and education process (Shtarkshall, Santelli, & Hirsch, 2007). Through sexual communication, parents convey knowledge,

values, beliefs, and expectations about sex and sexuality to their children.

Parent–adolescent sexual communication is an important topic of investigation because it may have a positive influence on adolescent sexual behavior and development. For example, it may contribute to a delay in sexual initiation and to the use of condoms and the contraceptive pill among sexually active adolescents. Yet empirical studies have shown mixed results with respect to the association between parent–adolescent sexual communication and adolescent sexual behaviors (DiIorio, Pluhar, & Belcher, 2003; Markham et al., 2010). These inconsistencies could result from the use of different methodologies across studies (Jaccard, Dodge, & Dittus, 2002). To illustrate, studies have operationalized parent–adolescent sexual communication in many different ways, including frequency and content of communication (DiIorio et al., 2002; Jerman & Constantine, 2010; Martino, Elliott, Corona, Kanouse, & Schuster, 2008); perceived comfort, knowledge, and openness of communication (DiIorio et al., 2000; Jerman & Constantine, 2010); style of communication (Pluhar & Kuriloff, 2004); and timing of communication (Clawson & Reese-Weber, 2003). Although the conveyance of specific messages—for example, that remaining abstinent is an effective way to protect oneself from unwanted pregnancy and sexually transmitted diseases (STDs)—has been found to be associated with later adolescent sexual initiation (Shtarkshall et al., 2007; Whitaker, Miller, May, & Levin, 1999; Wight, Williamson, & Henderson, 2006), the overall frequency of parent–adolescent sexual communication has been associated with earlier sexual initiation (Schalet, 2011). The latter association might reflect an increased willingness or need by adolescents and their parents to discuss sexual topics with each other when adolescents become involved in romantic relationships or situations that might lead to initiating sexual activity (Eisenberg, Sieving, Bearinger, Swain, & Resnick, 2006; Schalet, 2011).

When investigating the role of parent–adolescent sexual communication in adolescent sexual behavior, it is important to also consider the quality of the parent–adolescent relationship (DiIorio et al., 2003; Jaccard et al., 2002; Lefkowitz, 2002; Pluhar & Kuriloff, 2004). Consistent with Baumrind's (1966) theory of parenting styles, a high-quality parent–adolescent relationship, characterized by high levels of parental support and control, has been associated with both parent–adolescent sexual communication and adolescent sexual behaviors (Henrich, Brookmeyer, Shrier, & Shahar, 2006). Specifically, adolescents who experience high levels of parental support and control are more likely to engage in parent–adolescent sexual communication (Henrich et al., 2006) and less likely to engage in sexual risk behaviors (for a review, see Markham et al., 2010).

Although research on parent–adolescent sexual communication in past decades has resulted in increased knowledge on the topic, this area remains understudied,

as few published studies on this topic were based on a representative sample, and a majority of such studies were conducted in the United States (Blitstein, Evans, Davis, & Kamyab, 2012; Deptula, Henry, & Schoeny, 2010; Eisenberg et al., 2006; Jerman & Constantine, 2010; Lam, Russell, Tan, & Leong, 2008; Regnerus, 2005). Additional studies with representative samples from different parts of the world are needed to assure that the accumulated knowledge is reflective of varied populations of interest. Unlike the United States, the Netherlands has a liberal culture toward sexuality. Dutch parents are generally inclined to frame adolescent sexuality as a normative activity in the context of an intimate relationship, rather than as a dramatic force in need of control, as is often the case among parents in the United States (Santelli, Sandfort, & Orr, 2008; Schalet, 2000, 2004, 2011). Studies based in the United States tend to focus on parent–adolescent communication about abstinence and the prevention of STDs and pregnancy (Lefkowitz & Stoppa, 2006; Jerman & Constantine, 2010). Comprehensive parent–adolescent sexual communication, however, entails more than the discussion of abstinence and the use of protection and contraception; it also encompasses the discussion of nonsexual relationships, anatomy, love, respect, sexual pleasure, and decision making (Jerman & Constantine, 2010; Lefkowitz, 2002; Schalet, 2011; World Health Organization [WHO], 2012). In a qualitative study, Schalet (2011) observed that Dutch parents tend to discuss issues related to romantic relationships and sexual decision making more frequently with their adolescents than U.S. parents do, and that they tend to take adolescents' feelings of love seriously. The extent to which these qualitative findings can be generalized to the entire Dutch adolescent population, and the extent to which this type of communication is associated with adolescent sexual behaviors in a country with relatively liberal sexual values, is not clear, however.

The aim of the present study was to examine the frequency and content of parent–adolescent sexual communication during the past year in a nationally representative sample of Dutch adolescents and their parents, and to investigate their associations with adolescent sexual behaviors. We distinguished between parent–adolescent sexual communication on (1) anatomy, (2) relationships and rights, and (3) protection and contraception. We addressed the following research questions:

- RQ1: To what extent did Dutch fathers and mothers communicate, in the past year, with their 12- to 16-year-old sons and daughters about our selection of sexual topics?
- RQ2: Is parent–adolescent sexual communication associated with adolescent sexual behaviors (defined as sexual initiation, condom use, and contraceptive pill use) after controlling for potential demographic and parent–adolescent relationship confounders?

On the basis of the tendency toward open discussion of adolescent sexuality in the Netherlands, we hypothesized that a majority of Dutch parents would have discussed at least one topic multiple times with their adolescents in the past year. In line with previous research (DiIorio et al., 2003; Jerman & Constantine, 2010; Schouten, van den Putte, Pasmans, & Meeuwesen, 2007; Swain, Ackerman, & Ackerman, 2006), we hypothesized that mothers would talk about all sexual topics more often with their children than would fathers, and that both parents would talk about sexual topics more often with daughters than with sons. In addition, as per the findings of previous studies (Byers, Sears, & Weaver, 2008; Eisenberg et al., 2006), we hypothesized that parent-adolescent sexual communication would occur more frequently with older adolescents than with younger adolescents, except for topics related to anatomy. In addition, we hypothesized parent-adolescent sexual communication would be positively associated with adolescent sexual initiation, condom use, and contraceptive pill use. This hypothesis was based on the assumption that parents and adolescents are willing or have a need to discuss sexuality to a higher extent when adolescents become involved in romantic relationships or when situations arise that might lead to sexual activity and the consequent use of protection and contraception (Eisenberg et al., 2006; Schalet, 2011). Specifically, with respect to sexual initiation, we hypothesized a positive association with communication about relationships and rights and communication about protection and contraception. With respect to condom and pill use among sexually active adolescents, we hypothesized a positive association with communication about protection and contraception.

## Method

### Sample

The sample was drawn from the Dutch Health Behavior in School-Aged Children (HBSC) Survey, which is a WHO collaborative, cross-national study on young people's health and health-related behaviors, as well as the social context of young people's health (Currie et al., 2012). Data from Dutch students in the first through fourth year of secondary education (12- to 16-year-olds) were collected via an anonymous self-report questionnaire at secondary schools from October to November 2009. Schools were randomly selected from a governmental list of all secondary schools in the Netherlands after stratification based on urbanicity. In total, 68 schools (47% of the schools that were approached) participated in the study. Per school, four classes were randomly selected from a list of all classes in the first through fourth year (one class per grade). The questionnaires were administered in these classes by research assistants during a lesson (usually 50 minutes).

Only students who volunteered to participate, and whose parents did not object to their child's participation in the study, were included in the study. Students who were absent on the day of administration ( $n=440$ ) did not get a second chance to complete the survey. In addition to the adolescents, their parents were also invited to participate in the study. Each adolescent received a sealed envelope for their parents (either mother or father), which contained a parent questionnaire and an accompanying letter. The adolescents were instructed to deliver the envelope to one of their parents the same afternoon. Three weeks later, adolescents were given a written reminder to deliver to their parents. The adolescent and parent questionnaire were linked by a bar code. To prevent matching errors, researchers checked whether the gender and birth date of the adolescent on the parent and adolescent questionnaire corresponded.

In total, 5,719 adolescents and 2,991 parents completed the questionnaires (response rate was 93% for adolescents and 53% for parents). One student did not participate because the parents objected to their child's participation in the study, and two students chose not to participate. Among the 440 students who were absent on the day of administration, illness was the main reason for absence. Of the 2,991 parent-adolescent dyads in our sample, 26 adolescents were outliers in terms of their age (i.e., 17 or 18 years old). The final sample consisted of 2,965 dyads. Table 1 presents the demographic characteristics of the adolescents and parents who participated in the survey. Compared with nonresponding parents, the parents who returned the questionnaire had children who were (a) younger,  $t(5,717)=10.05, p<.001$ ; (b) more often in academic educational tracks,  $\chi^2(1, N=5,719)=209.77, p<.001$ ; (c) less likely to have an ethnic minority background,  $\chi^2(1, N=5,716)=320.34, p<.001$ ; and (d) more likely to be from two-parent families,  $\chi^2(1, N=5,714)=41.07, p<.001$ . With respect to child's gender, no differences between adolescents of nonresponding and responding parents were found,  $\chi^2(1, N=5,719)=4.83, p=.028$ . Furthermore, adolescents of responding parents were less likely to be sexually active,  $\chi^2(1, N=5,378)=82.61, p<.001$ , but we found no differences between sexually active adolescents of nonresponding and responding parents with respect to condom use,  $\chi^2(1, N=591)=.45, p=.570$ , or contraceptive pill use,  $\chi^2(1, N=540)=1.65, p=.207$ .

### Measures

*Parent-adolescent sexual communication (parent report).* The HBSC survey included a series of closed-ended questions about sexual communication, completed by the parents: "During the past year, have you spoken with your child about the following topics related to romantic relationships and sexuality... (a) being in love and having a romantic relationship, (b) physical differences between boys and girls, (c) physical changes

**Table 1.** Demographic Characteristics of Adolescents and Parents Who Participated in the Survey

Demographic Characteristic	n	%
<b>Adolescents</b>		
Gender		
Male	1,510	51.1
Female	1,443	48.9
Age		
12	556	18.8
13	751	25.4
14	666	22.6
15	722	24.5
16	258	8.7
Race and ethnicity		
Native Dutch	2,695	91.3
Ethnic minority	256	8.7
Missing	1	.0
Educational track		
Vocational	1,420	48.1
Academic	1,533	51.9
Family structure		
Living with both biological parents	2,427	82.2
Not living with both biological parents	520	17.6
Missing	6	.2
<b>Parents</b>		
Gender		
Male	504	17.1
Female	2,439	82.6
Missing	10	.3
Age		
Under 30	7	.2
30–39	301	10.3
40–49	2,198	74.4
50 and over	441	14.9
Missing	7	.2
Race and ethnicity		
Native Dutch	2,651	89.8
Ethnic minority	184	6.2
Missing	118	3.9
Education		
Elementary school	45	1.5
High school (vocationally oriented)	654	22.2
High school (academically oriented)	292	9.9
College	864	29.3
Graduate school	986	33.4
Missing	112	3.8

Note.  $N=2,965$ . Numbers and percentages are weighted for adolescent gender, age, grade, and level of urbanization and are, therefore, representative of Dutch youth in the first four grades of secondary education.

during puberty, (d) physical contact you do and do not feel comfortable with, (e) pregnancy and contraceptives, (f) the use of condoms to prevent STDs, (g) the fact that you should not do sexual things you do not want to do, (h) the fact that you should not do sexual things that your partner does not want to do, and (i) homosexuality?" Response options were *No*; *Yes, once*; and *Yes, multiple times*. On the basis of these nine items, we constructed three scales for the present study by taking the mean of a subset of items. The first scale, measuring parent–adolescent communication on topics related to autonomy, included items (b) and (c) (Cronbach's

$\alpha=.81$ ). The second scale, measuring parent–adolescent communication on topics related to relationships and rights, included items (a), (d), (g), (h), and (i) (Cronbach's  $\alpha=.85$ ). The third scale, measuring parent–adolescent communication on topics related to protection and contraception, included items (e) and (f) (Cronbach's  $\alpha=.88$ ).

*Adolescent sexual behaviors (adolescent report).* The HBSC survey included a series of closed-ended questions completed by the adolescents about their sexual behavior. The first question read: "Have you ever had sexual intercourse (some people call it 'having sex,' 'going all the way,' or 'sleeping together')?" Response options were *Yes* and *No*. The second and third questions were: "The last time you had sexual intercourse, did you or your partner use the pill to prevent pregnancy?" and "The last time you had sexual intercourse, did you use a condom?" Response options were *Yes*; *No*; and *I never had sex*.

*Quality of the parent–adolescent relationship (adolescent report).* Three indicators of the quality of the parent–adolescent relationship were included in our model: (a) parental support; (b) parental knowledge of adolescents' friends, activities, and whereabouts; and (c) parental monitoring.

Perceived parental support was measured by six items, reflecting the subscale on emotional support from the Relational Support Inventory (Scholte, van Lieshout, & van Aken, 2001): (a) "My parents show me that they admire me"; (b) "In my parents' eyes, I do everything wrong"; (c) "My parents show me that they love me"; (d) "My parents often make me look ridiculous"; (e) "My parents support me in my activities"; and (f) "My parents treat me aggressively." Answer categories ranged from 1 (*Definitely not true*) to 5 (*Definitely true*). For the present study, we constructed a scale based on these six items (Cronbach's  $\alpha=.84$ ).

Perceived parental knowledge of adolescents' friends, activities, and whereabouts was measured by four items (shortened version of Rispen, Hermanns, and Meeus's [1996] measure): "How well do your parents know... (a) who your friends are, (b) how you spend your money, (c) where you go after school, and (d) how you spend your free time?" Response categories ranged from 1 (*They know little*) to 3 (*They know much*). For the present study, we constructed a scale based on these four items (Cronbach's  $\alpha=.76$ ).

Perceived parental monitoring was measured by three items (shortened version of Stattin and Kerr's [2000] measure of behavioral control): (a) "Before you leave the house, do your parents want to know with whom or where you are going?"; (b) "Do you need your parents' permission to go out at night?"; and (c) "If you go out at night, do your parents want to know afterward with whom or where you were?" Response categories ranged

from 1 (*Never*) to 5 (*Always*). For the present study, we constructed a scale based on these three items (Cronbach's  $\alpha = .73$ ).

*Covariates (adolescent report).* Adolescent gender, age (12 to 16 years), ethnicity (ethnic minority versus native Dutch background), educational track (vocational versus academic), and family structure (living with both biological parents versus not) were used as covariates in the analyses predicting adolescent sexual behaviors.

## Analyses

To address our first research question, on the extent to which Dutch mothers and fathers communicate about sexuality with their adolescent sons and daughters, descriptive analyses were conducted on the nine sexual communication topics by parent and adolescent gender and adolescent age. Analyses were performed using SPSS 20.0. For each communication topic, cross-tabulations were used to assess the hypothesized subgroup differences according to adolescent age and gender; statistical significance was determined by Pearson's chi-square test. The overall effect of parental gender on parent-adolescent sexual communication was assessed by means of a  $t$  test. To control for Type I errors due to the large amount of tests, we considered subgroup differences statistically significant only at  $p < .01$ .

To address our second research question, on the association between parent-adolescent sexual communication and adolescent sexual behaviors, descriptive analyses of adolescent sexual behaviors were performed in SPSS 20.0 by adolescent gender and age. For each sexual behavior, cross-tabulations were used to assess subgroup differences according to adolescent age and gender; statistical significance was determined by Pearson's chi-square test.

Next, the association with parent-adolescent sexual communication was tested for each behavior (i.e., sexual intercourse, condom use, and pill use) by means of hierarchical regression analysis in SPSS 20.0. In each model, adolescent sociodemographic factors were entered first, followed by the three constructs reflecting the quality of the parent-adolescent relationship in the second step, and parent-adolescent sexual communication in the third step.

As the data used for this study were collected in a cluster randomized trial, design effects were estimated to decide on accounting for nonindependence due to cluster sampling. As the design effect (based on possible cluster effects at the classroom level, which is more conservative than at the school level) was smaller than 2, accounting for cluster sampling was not imperative (Muthén & Satorra, 1995).

To better enable us to generalize the results to the Dutch school-going population of this age, a weighting procedure was applied. Poststratification weights were

calculated by comparing the joint sample distributions and known population distributions of the child's educational track, grade, gender, and level of urbanization in 2009 (national statistics were obtained from Statistics Netherlands, <http://www.cbs.nl/en-GB/menu/home/default.htm>). There were no missing data on sociodemographic indicators. Missing data on parenting ranged from 3.2% (parental support and parent-adolescent sexual communication) to 4.3% (parental knowledge).

Missing data on adolescent sexual behaviors ranged from 6.8% (sexual initiation) to 14.3% (pill use, among sexually active adolescents). Listwise deletion for missing values was employed for all variables. Indices of multicollinearity (eigenvalues, condition indices, and variance proportions) were examined, and no problems were identified.

## Results

### Research Question 1

Overall, 97% of parents discussed with their adolescents at least one of the nine sexual topics at least once in the past year, and 63% discussed all topics at least once in the past year. A lower but still considerable proportion of parents discussed the sexual topics multiple times: 75% of parents discussed at least one of the nine sexual topics multiple times, and 15% of parents discussed all topics multiple times in the past year. The mean number of topics discussed was 6.6 (at least once) and 2.7 (multiple times), out of 9 topics.

With respect to the discussion of specific topics (multiple times in the past year), romantic relationships were discussed by the greatest proportion of parents (60.2%). Other topics were discussed by a smaller but still considerable proportion of parents: 53.1% of the parents indicated having discussed with their children not doing anything sexually they do not want to do; 43.6% talked with their children about not doing anything sexually their partner does not want to do; 47.5% discussed the use of contraception, and 46.1% discussed the use of protection. Physical changes during puberty and physical gender differences were discussed by 44.7% and 37.7% of the parents, respectively. Physical contact you do and do not feel comfortable with and homosexuality were discussed least often, yet still almost one-third of parents indicated that they had discussed these topics multiple times with their adolescents in the past year.

Table 2 presents the prevalence of parent-adolescent sexual communication by parent gender and by adolescent age and gender. With respect to parental gender, we found that mothers talked about a greater number of topics with their adolescents than did fathers,  $t(728) = 3.83$ ,  $p < .001$ . With respect to adolescent gender, we found that parents were more likely to communicate about sexual topics with daughters than with sons. For mothers, this was true for all communication topics,

**Table 2.** Percentage of Fathers and Mothers Who Have Discussed Selected Sexual Topics Multiple Times in the Past Year With Their Adolescent, by Adolescent Gender and Age

Parent Gender by Adolescent Gender and Age	Sexual Topics in Parent–Adolescent Communication									
	Anatomy		Relationships and Rights					Protection and Contraception		Mean Number of Topics
	Physical Gender Differences	Physical Changes During Puberty	Romantic Relationships	(Un) Comfortable Physical Contact	Saying “No”	Respecting “No”	Homosexuality	Pregnancy and Contraceptives	Condoms and STDs	
<b>Fathers</b>										
<i>Sons</i>										
12-year-olds (n=70)	23.7	20.9	30.4	11.5	13.3	14.7	11.2	5.3	6.0	1.37
13-year-olds (n=78)	20.4	31.5	25.1	6.2	21.0	21.6	14.7	4.6	8.2	1.58
14-year-olds (n=68)	20.7	33.2	40.9	11.4	31.4	29.0	21.7	17.7	17.1	2.23
15–16-year-olds (n=57)	18.0	29.9	31.7	6.9	22.1	22.1	13.2	15.5	23.2	1.83
$\chi^2$ (adolescent age differences—sons)	0.90	2.69	3.78	1.72	6.51	4.28	3.15	9.03	11.31	
<i>Daughters</i>										
12-year-olds (n=41)	32.4	48.8	20.2	22.2	28.7	26.2	5.3	14.7	8.6	2.18
13-year-olds (n=52)	38.9	49.4	40.6	24.8	39.8	22.6	4.6	30.0	28.1	2.99
14-year-olds (n=54)	27.5	43.1	41.9	14.1	34.1	28.2	17.7	18.7	15.8	2.43
15-year-olds (n=55)	40.8	42.0	50.0	26.9	64.0	40.4	8.5	38.0	28.8	3.66
16-year-olds (n=29)	20.6	41.2	40.4	17.9	37.2	20.2	41.3	29.2	16.6	2.41
$\chi^2$ (adolescent age differences—daughters)	4.71	0.82	9.49	3.21	15.02**	5.38	6.80	8.72	8.27	
$\chi^2$ (adolescent gender differences—fathers)	9.91**	14.06***	3.36	15.33***	23.25***	3.23	7.56**	23.20***	5.08	
<b>Mothers</b>										
<i>Sons</i>										
12-year-olds (n=225)	30.2	40.0	23.7	13.6	24.1	22.9	20.7	12.7	12.1	1.99
13-year-olds (n=326)	29.9	38.5	32.3	13.0	24.6	23.1	24.0	16.4	16.4	2.20
14-year-olds (n=264)	30.2	37.8	30.5	14.3	25.5	26.1	23.6	17.6	20.5	2.27
15-year-olds (n=317)	21.7	33.2	26.8	13.1	26.9	28.9	19.8	16.3	19.8	2.05
16-year-olds (n=102)	28.0	29.5	45.8	14.8	30.0	31.8	22.8	27.9	28.3	2.60
$\chi^2$ (adolescent age differences—sons)	7.91	5.50	18.61**	0.39	1.72	5.71	2.48	12.12*	14.62**	
<i>Daughters</i>										
12-year-olds (n=220)	38.5	59.9	38.6	20.0	33.3	21.8	29.0	17.8	13.3	2.73
13-year-olds (n=293)	35.3	61.1	47.0	26.3	44.8	31.1	33.8	24.0	19.9	3.24
14-year-olds (n=278)	40.8	56.7	50.1	26.0	48.8	31.0	31.3	31.8	31.5	3.51
15-year-olds (n=300)	35.2	47.6	50.9	31.0	52.4	36.9	29.9	40.9	36.8	3.63
16-year-olds (n=116)	31.8	45.8	60.9	31.0	59.2	44.2	27.8	49.5	42.4	3.84
$\chi^2$ (adolescent age differences—daughters)	4.05	17.14**	16.77**	8.55	27.28***	21.41***	2.40	55.23***	57.43***	
$\chi^2$ (adolescent gender differences—mothers)	22.35***	82.14***	85.32***	64.04***	116.71***	11.13**	23.24***	68.18***	29.72***	
<i>t</i> (parent gender differences)										3.83***

*Note.* STDs=sexually transmitted diseases. The *n* for fathers who participated in the survey and had 16-year-old sons was only 12; therefore, the 16-year-old sons were combined with the 15-year-old sons (*n*=45; *n*=57 in total). Exact formulation of the items: “During the past year, have you spoken with your child about the following topics related to relationships and sexuality: physical differences between boys and girls; physical changes during puberty; being in love and having a romantic relationship; physical contact you do and do not feel comfortable with; the fact that you should not do sexual things you do not want to do; the fact that you should not do sexual things that your partner does not want to do; homosexuality; pregnancy and contraceptives; the use of condoms to prevent STDs.”

\*\**p* < 01; \*\*\**p* < 001.

$\chi^2(1)=11.39-83.25, ps \leq .001$ . For fathers, this was true for a majority of topics,  $\chi^2(1)=6.44-19.47, ps < .01$ ; except romantic relationships,  $\chi^2(1)=3.36, p=.07$ ; not doing any sexual things one's partner does not want to do,  $\chi^2(1)=23.25, p=.08$ ; and the use of condoms to prevent STDs,  $\chi^2(1)=5.08, p=.03$ .

Differences according to adolescent age were also pronounced, especially among mothers. Mothers were more likely to talk with older sons and daughters, as compared with younger sons and daughters, about romantic relationships and the use of contraceptives and condoms,  $\chi^2(4)=14.62-57.43, ps < .01$ . In addition, with respect to daughters only, mothers were more likely to discuss not doing any sexual things one or one's partner does not want to do with older daughters as compared with younger daughters,  $\chi^2(4)=21.41-27.28, ps < .001$ . Among fathers, a greater proportion discussed not doing any sexual things one does not want to do with older daughters than with younger daughters,  $\chi^2(4)=15.02, p=.005$ . In addition, a greater proportion of fathers discussed the use of condoms to prevent STDs with older sons as compared with younger sons,  $\chi^2(3)=11.31, p=.010$ . The only topic discussed more often with younger adolescents than with older adolescents was physical changes during puberty, and we found this only for mothers discussing the topic with daughters,  $\chi^2(4)=17.14, p=.002$ .

**Research Question 2**

*Descriptive data.* To examine the association between parent-adolescent sexual communication and adolescent sexual behaviors, we first conducted descriptive analyses of adolescent sexual behaviors. Table 3 presents the percentage of adolescents who engaged in sexual intercourse and the percentage of sexually active adolescents who used a condom or the contraceptive pill at their last sexual intercourse. Sexual initiation was more prevalent among older adolescents, ranging from only 2% (boys) and 0% (girls) at age 12 to 36% (boys) and 26% (girls) at age 16. There were no statistically significant gender differences in sexual initiation.

Among sexually active students, prevalence rates of condom use at last sexual intercourse averaged 74%. With respect to pill use, 56% of sexually active adolescents indicated that they or their partner used it at their last sexual intercourse. Boys were more likely to report condom use, whereas girls were more likely to report contraceptive pill use. Furthermore, 16-year-old boys and girls were less likely to report condom use compared with 15-year-old boys and girls. Finally, 16-year-old girls were more likely to report contraceptive pill use than were 15-year-old girls. For boys, there were no significant age differences in contraceptive pill use.

Among sexually active adolescents, 37.5% reported using both a condom and the contraceptive pill at their last sexual intercourse, and 3.5% reported using neither.

**Table 3.** Descriptive Statistics of Adolescent Sexual Behaviors

Adolescent Gender and Age	Sexual Initiation %	Condom Use at Last Sexual Intercourse <sup>a</sup> %	Contraceptive Pill Use at Last Sexual Intercourse <sup>a</sup> %
<b>Boys</b>			
12 (n=294)	2.0	<i>b</i>	<i>b</i>
13 (n=405)	1.3	<i>b</i>	<i>b</i>
14 (n=332)	6.3	<i>b</i>	<i>b</i>
15 (n=365)	13.9	90.6	38.2
16 (n=114)	36.4	71.8	61.5
$\chi^2$ (age differences—boys)	169.91***	5.38*	4.33
<b>Girls</b>			
12 (n=261)	0.0	<i>b</i>	<i>b</i>
13 (n=346)	1.2	<i>b</i>	<i>b</i>
14 (n=334)	5.5	<i>b</i>	<i>b</i>
15 (n=357)	20.4	75.8	57.8
16 (n=144)	25.9	49.7	83.7
$\chi^2$ (age differences—girls)	149.57***	6.96*	7.36**
$\chi^2$ (gender differences)	0.61	5.26*	5.24*

Note. N=2,965.

<sup>a</sup>Among adolescents who are sexually active, n=206.

<sup>b</sup>The n for the subgroup is too small to produce meaningful estimates. If the n was too small for 12-, 13-, and 14-year-olds, chi square tests are based on 15- and 16-year-olds only.

\*p < .05; \*\*p < .01; \*\*\*p < .001.

There were no age or gender differences with respect to dual use (“double Dutch”).

*Regression analyses.* Before conducting a hierarchical regression analysis predicting sexual initiation and—among sexually active adolescents—condom and contraceptive pill use, we conducted zero-order correlation analyses between parent-adolescent sexual communication, adolescent sexual behaviors, and parent-adolescent relationship quality (see Table 4). All three types of parent-adolescent sexual communication were positively correlated. Sexual initiation was positively associated with parent-adolescent communication about relationships and rights and protection and contraception. Among sexually active adolescents, pill use was positively associated with parent-adolescent sexual communication about protection and contraception, but condom use was not. Furthermore, parental support, knowledge, and monitoring were negatively associated with sexual initiation, but not with condom and pill use.

Table 5 presents the results of a series of hierarchical regression analyses. With sexual initiation as the dependent variable, in Step 1, only adolescent age, adolescent educational track, and living with both parents were statistically significant predictors,  $\chi^2(5)=295.59, p < .001$ , Nagelkerke  $R^2=.24$ . In Step 2, after controlling for the demographic covariates, high parental support and knowledge of adolescents’ friends, activities, and whereabouts were each negatively predictive of adolescent sexual



**Table 4.** Zero-Order Correlations Between Parent–Adolescent Sexual Communication, Adolescent Sexual Behaviors, and Parent–Adolescent Relationship Quality

Variable	Sexual Communication			Sexual Behaviors			Relationship Quality		
	Anatomy	Love	Protection	Sexual Initiation	Condom Use <sup>a</sup>	Pill Use <sup>a</sup>	Parental Support	Parental Knowledge	Parental Monitoring
Sexual communication									
Anatomy	—	.65***	.51***	-.00	.07	.06	.11***	.07***	.11***
Love		—	.74***	.11***	-.00	.12	.01	.00	.07***
Protection			—	.19***	-.01	.28***	-.02	-.01	.02
Sexual behaviors									
Sexual initiation				—	n/a	n/a	-.15***	-.13***	-.09***
Condom use <sup>a</sup>					—	-.29***	.05	.02	.03
Pill use <sup>a</sup>						—	.12	.08	-.07
Relationship quality									
Parental support							—	.39***	.21***
Parental knowledge								—	.24***
Parental monitoring									—

Note. N=2,965.

<sup>a</sup>Among sexually active adolescents.

\*\*\*p < .001.

initiation, but parental monitoring was not,  $\chi^2(8) = 341.76$ ,  $p < .001$ , Nagelkerke  $R^2 = .27$ . In Step 3, after controlling for demographic covariates and parent–adolescent relationship quality factors, only parent–adolescent sexual communication about protection and contraception was positively predictive of adolescent sexual initiation,  $\chi^2(11) = 382.88$ ,  $p < .001$ , Nagelkerke  $R^2 = .30$ . Comparison of log-likelihood ratios for the different models showed

significant improvement with the addition of parent–adolescent relationship quality as well as parent–adolescent sexual communication.

Among sexually active adolescents, with condom use as the dependent variable, in Step 1, none of the demographic variables was associated with condom use,  $\chi^2(5) = 5.34$ ,  $p = .38$ , Nagelkerke  $R^2 = .04$ . In Step 2, after controlling for the demographic covariates, none of the

**Table 5.** Summary of Hierarchical Logistic Regression Analyses Predicting Adolescent Sexual Initiation and Condom and Contraceptive Pill Use Among Sexually Active Adolescents

Model	Adolescent Sexual Initiation <sup>a</sup>			Condom Use Among Sexually Active Adolescents <sup>b</sup>			Contraceptive Pill Use Among Sexually Active Adolescents <sup>b</sup>		
	B	SE B	OR (95% CI)	B	SE B	OR (95% CI)	B	SE B	OR (95% CI)
Step 1									
Adolescent male gender	0.11	0.15	1.12 (0.84–1.49)	0.48	0.31	1.61 (0.87–2.97)	-0.89	0.31	0.41 (0.22–0.75)**
Adolescent age	0.99	0.08	2.70 (2.33–3.13)***	-0.19	0.19	0.83 (0.57–1.21)	0.59	0.20	1.81 (1.24–2.66)**
Academic educational track	-0.35	0.07	0.71 (0.62–0.81)***	0.08	0.16	1.08 (0.79–1.47)	-0.13	0.16	0.88 (0.64–1.20)
Native Dutch ethnicity	-0.35	0.25	0.71 (0.43–1.16)	-0.52	0.63	0.59 (0.17–2.03)	1.47	0.64	4.36 (1.26–15.14)*
Living with both parents	-0.46	0.18	0.63 (0.45–0.89)**	0.22	0.36	1.25 (0.62–2.51)	-0.61	0.37	0.55 (0.27–1.12)
Step 2									
Parental support	-0.50	0.25	0.41 (0.25–0.67)***	-0.09	0.25	0.99 (0.96–3.50)	0.27	0.25	1.30 (0.80–2.13)
Parental knowledge of adolescents' friends, activities, and whereabouts	-0.89	0.25	0.41 (0.25–0.67)***	0.17	0.45	1.18 (0.49–2.88)	-0.03	0.44	0.97 (0.41–2.32)
Parental monitoring	-0.04	0.09	0.96 (0.81–1.14)	0.22	0.19	1.25 (0.86–1.82)	-0.27	0.20	0.76 (0.52–1.12)
Step 3									
Parent–adolescent sexual communication									
Anatomy	-0.15	0.08	0.86 (0.74–1.00)	0.15	0.15	1.17 (0.87–1.57)	0.13	0.15	1.14 (0.84–1.54)
Relationships and rights	0.03	0.05	1.03 (0.94–1.13)	-0.04	0.10	0.97 (0.80–1.17)	-0.15	0.10	0.87 (0.71–1.06)
Protection and contraception	0.37	0.08	1.45 (1.24–1.70)***	0.07	0.18	1.07 (0.75–1.52)	0.44	0.20	1.56 (1.06–2.29)*

Note. Model fit for adolescent sexual initiation:  $\chi^2(5) = 295.59$  for Step 1 ( $p < .001$ ),  $\Delta\chi^2(3) = 46.18$  for Step 2 ( $p < .001$ ),  $\Delta\chi^2(3) = 41.12$  for Step 3 ( $p < .001$ ). Model fit for condom use among sexually active adolescents:  $\chi^2(5) = 5.34$  for Step 1 ( $p = .38$ ),  $\Delta\chi^2(3) = 1.77$  for Step 2 ( $p = .62$ ),  $\Delta\chi^2(3) = 1.79$  for Step 3 ( $p = .62$ ). Model fit for contraceptive pill use among sexually active adolescents:  $\chi^2(5) = 28.95$  for Step 1 ( $p < .001$ ),  $\Delta\chi^2(3) = 3.21$  for Step 2 ( $p = .36$ ),  $\Delta\chi^2(3) = 7.04$  for Step 3 ( $p = .07$ ).

<sup>a</sup>N=2,965; <sup>b</sup>n=206. \*p < .05; \*\*p < .01; \*\*\*p < .001.

variables reflecting the quality of the parent-adolescent relationship was associated with condom use,  $\chi^2(8)=7.11$ ,  $p=.53$ , Nagelkerke  $R^2=.05$ . In Step 3, after controlling for demographic covariates and parent-adolescent relationship quality factors, none of the sexual communication scales was predictive of adolescent condom use,  $\chi^2(11)=8.90$ ,  $p=.63$ , Nagelkerke  $R^2=.06$ . Comparison of log-likelihood ratios for the different models showed no significant improvement with the addition of parent-adolescent relationship quality or parent-adolescent sexual communication.

Among sexually active adolescents, with pill use as the dependent variable, in Step 1, female gender, age, and a native Dutch ethnicity were associated with contraceptive pill use,  $\chi^2(5)=28.95$ ,  $p<.001$ , Nagelkerke  $R^2=.18$ . In Step 2, after controlling for the demographic covariates, none of the variables reflecting the quality of the parent-adolescent relationship was associated with pill use,  $\chi^2(8)=32.16$ ,  $p<.001$ , Nagelkerke  $R^2=.20$ . In Step 3, after controlling for demographic covariates and parent-adolescent relationship quality factors, only parent-adolescent sexual communication about protection and contraception was positively associated with contraceptive pill use,  $\chi^2(11)=39.20$ ,  $p<.001$ , Nagelkerke  $R^2=.24$ . Comparison of log-likelihood ratios for the different models showed no significant improvement with the addition of parent-adolescent relationship quality or parent-adolescent sexual communication.

### Discussion

Adolescence is a developmental period marked by sexual discovery and often by sexual risk. Sexual communication is a principal means for parents to transmit sexual values, beliefs, expectations, and knowledge to their adolescents to help them grow into sexually healthy adults. In parent-adolescent sexual communication, parents can educate and help socialize their adolescents, and adolescents can raise questions and concerns related to sexuality. This study examined the frequency of parent-adolescent communication on a variety of sexual topics in a nationally representative sample of Dutch adolescents and their parents, and tested whether this communication—after controlling for adolescents' demographics and the quality of the parent-adolescent relationship—was associated with adolescent sexual behaviors.

Three main findings emerged. First, as hypothesized, the majority (75%) of Dutch parents had communicated multiple times about at least one of the presented topics related to sexuality with their adolescents in the past year. Romantic relationships were the most frequently discussed topic, followed by topics related to respecting one's own and one's partner's wishes, and the use of protection and contraception. The high prevalence of parent-adolescent sexual communication among Dutch parents and their adolescents is consistent with Schalet's

(2011) observation that adolescent sexuality is generally accepted by Dutch parents, meaning that they do not typically object to their adolescents becoming sexually active. Consequently, their concerns are focused not only on abstinence and prevention but also on their adolescents being securely and steadily attached to their partners and feeling ready before they become sexually active. The most intimate aspects of sexuality, such as physical contact that is considered pleasant and unpleasant, were discussed least often, potentially due to greater embarrassment with these topics, which is also consistent with Schalet's (2011) research.

In line with previous research (DiIorio et al., 2003; Swain et al., 2006), we found that, overall, mothers were more likely to talk with their adolescents than were fathers, and both mothers and fathers were more likely to talk with their daughters as compared with their sons. In addition, parent-adolescent sexual communication occurred more frequently with older adolescents, although findings differed across topics. With increasing sexual communication, various challenges arise for parents, often tied to their less-than-optimal knowledge and comfort levels, including what is appropriate to cover at what age (Jermain & Constantine, 2010; Schalet, 2011). To become or remain effective sexual communicators, education and support should be widely available for parents.

The second main finding of this study was that, as hypothesized, parent-adolescent communication on protection and contraception was positively associated with adolescent sexual initiation. Although causal inferences cannot be confirmed in this study due to the observational nature of our data, this finding may reflect that as adolescent sexual debut "moves from the hypothetical to the real" (Schalet, 2011, p. 140), sexual communication between parents and adolescents intensifies. Parents who suspect or know that their child is becoming sexually active may be more inclined to point out to him or her the necessity of using protection and contraception. At the same time, sexually active adolescents may approach their parents with questions or concerns about the use of condoms and the contraceptive pill. Thus, the identified positive association neither necessarily reflects a risk association nor implies that if parents talk to their adolescents about sex, their adolescents will have sex sooner.

The third main finding of this study was that condom use among sexually active adolescents was not associated with any type of parent-adolescent sexual communication, whereas contraceptive pill use was associated with sexual communication about protection and contraception. The nonsignificant results with respect to condom use may be explained by the widespread public health safe-sex campaigns and easy access to condoms in the Netherlands. As a Dutch interviewee in Schalet's (2011) research said, "It's like they're stoning you to death with all the safe-sex messages" (p. 172).

This makes adolescents less dependent on their parents with respect to information on or access to protection and contraception. Naturally, this does not mean that parents cannot have a protective influence on adolescents' condom use. Their influence may, however, be embedded in a sociocultural context that is already supportive of the use of protection. A Dutch boy interviewed by Schalet (2011) illustrated how safe-sex and condom use messages are so widespread in the media that talking about condom use with parents is not necessary: "[I heard so much about protection and contraception from the] papers, television, and stories [that] it goes without saying that you use them. You really do not need to talk about it" (p. 172). With respect to pill use, the situation is different, as girls may discuss pill use with their mothers before or while using it, in part because they are concerned about the health consequences and because they need to visit a doctor to get a prescription (Schalet, 2011).

An additional finding of interest from this study was that although parental support and knowledge were associated with a lower likelihood of adolescent sexual initiation, parental monitoring was not. This finding is consistent with some previous findings (Sieverding, Adler, Witt, & Ellen, 2005) but contrasts with others (DiClemente, Crosby, & Wingood, 2002; Wight et al., 2006). The nonsignificant results for parental monitoring in the present study might be explained by the measure of parental monitoring we relied upon, which reflects adolescents' reporting of parental solicitation (i.e., parents asking their adolescent where he or she is going and with whom). Recent research has shown that adolescent disclosure (adolescents' willingness to tell their parents where they go and with whom) is more reflective of a high-quality parent-adolescent relationship than parental solicitation and, consequently, also more predictive of adolescent behavioral outcomes (Kerr, Stattin, & Burk, 2010; Stattin & Kerr, 2000). As such, our findings that parental support and knowledge were associated with adolescent sexual behaviors, while parental solicitation was not, confirm previous research (for a review, see Markham et al., 2010) underlining the importance of parent-adolescent connectedness in adolescent sexual health.

The present study had several unique strengths, such as the use of a large, nationally representative data set in a country known for its liberal sexual standards and open discussion on sexuality, and the examination of a wide range of sexual communication topics and their independent associations with adolescent sexual behaviors. Its findings, however, must be interpreted within a number of limitations. First, our study was based on cross-sectional observational data, which impedes the development of causal inferences. Second, our operationalization of parent-adolescent sexual communication was limited to the frequency of communication, and adolescent sexual behaviors included

in this study were limited. Although the repeated discussion of sexual topics has been related to greater openness of parent-adolescent sexual communication (Martino et al., 2008), our study did not include measures related to the quality of the communication, the comfort and openness with which parents and adolescents discussed the sexual topics, and the way in which information was conveyed. Third, although our measure of parent-adolescent sexual communication included a wide range of communication topics, reflecting both positive and negative aspects of sexuality, our measure of adolescent sexual behavior was limited to sexual initiation, condom use, and contraceptive pill use. This was largely due to the limited measures included in the HBSC survey, which is a large-scale, quantitative survey that focuses on a wide variety of adolescent health topics. Future studies should examine positive aspects of sexual behavior, including adolescents' subjective experiences and sexual satisfaction. A fourth limitation is that we had only parental reports of parent-adolescent sexual communication. Research suggests that parents and their children often have different perceptions of the frequency and extent of sexual communication—with gaps in agreement on whether discussions even occurred, let alone what was discussed (e.g., see DiIorio et al., 2003; Jaccard, Dittus, & Gordon, 1998). Moreover, adolescent perceptions and reports have been found to be more predictive of adolescent sexual behavior than parent reports (Jaccard et al., 1998). As such, our estimates of parent-adolescent sexual communication may be positively biased, while our estimates of the association between parent-adolescent sexual communication and adolescent sexual behaviors are likely to be attenuated. Fifth, even though our study was informed by Schalet's (2004, 2011) study of cultural differences between the United States and the Netherlands, we could not make similar comparisons in this study, because no sufficiently comparable U.S. national data on parent-adolescent sexual communication and its association with adolescent sexual behavior were available. A goal for future research is to design cross-national studies based on common items that would enable direct comparisons of parent-adolescent sexual communication and its association with adolescent sexual behaviors. Finally, it is extremely difficult to obtain completely representative samples in studies on sensitive topics such as sexual communication and behavior. Because of the selective response of parents, our sample of adolescents was slightly younger, more often in academic educational tracks, less likely to have an ethnic minority background, and more likely to be from two-parent families. To better enable us to generalize the results to the Dutch school-going population aged 12 to 16 years, we applied a weighting procedure. As statistics on parental demographics were not available, both adolescent and parent data were weighted using adolescent demographics.

Although the weighting procedure leads to more representative estimates, it cannot fully account for the small deviations in the representativeness of our sample.

This study provides a valuable initial insight into parent-adolescent sexual communication in the Netherlands, a nation that tends to frame adolescent sexuality as a normative activity in the context of intimate relationships. In this sense alone, the societal and cultural environments in Netherlands are quite distinct from those in the United States, where the nation as a whole seems to be “pushing the river” when it comes to adolescent sexuality. In the Netherlands, adolescent sexuality is not about initiation of sexual activity per se (or the delay of such activity, as is the focus in the United States as a whole) but rather initiation of sexual activity with the guidance and support of adults and society as a whole. The high frequency of parent-adolescent sexual communication in our study suggests that, even in the context of the Netherlands’ liberal culture toward sexuality, widespread public health safe-sex campaigns, and easy access to condoms, parents play an important role in their children’s sexual socialization process. With respect to the identified positive association between parent-adolescent sexual communication and adolescent sexual initiation, we propose that this association does not necessarily reflect a risk association, as has been suggested in previous studies. Rather, adolescent sexual development and behavior may influence parent-adolescent sexual communication. Longitudinal research on the potentially bidirectional links between parent-adolescent sexual communication and adolescent sexual behavior is needed to disentangle the causal nature of the identified associations. Finally, this study contributes to the discussion of how the context (i.e., national culture, including the widespread public health safe-sex campaigns) in which parent-adolescent sexual communication takes place may influence the strength of associations between the communication and adolescent sexual behaviors. Future comparative research might investigate the effect of this context in more detail.

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