

Mother- and Father- Adolescent Relationships and Early Sexual Intercourse

Raquel Nogueira Avelar e Silva, MSc,^a Daphne van de Bongardt, PhD,^b Petra van de Looij-Jansen, PhD,^c Anne Wijtzes, PhD,^d Hein Raat, MD, PhD^a

abstract

OBJECTIVES: To assess the prospective associations between mother-adolescent and father-adolescent relationship quality and early sexual intercourse initiation (ie, ≤ 16 years) among a large sample of Dutch adolescents.

METHODS: Two waves of data from the Rotterdam Youth Monitor, a longitudinal study in the Netherlands, were used. The analysis sample consisted of 2931 adolescents aged 12 to 16 years (Mean_{age@T1} = 12.5 years, SD = 0.61; Mean_{age@T2} = 14.3 years, SD = 0.60). Variables were assessed by means of self-report questionnaires. Prospective associations between mother-adolescent and father-adolescent relationships and early sexual initiation were assessed by logistic regression analyses, stratified by gender, controlling for various potential confounders.

RESULTS: We found that only girls (not boys) having a higher-quality relationship with mothers were significantly less likely to have initiated early sexual intercourse between T1 and T2. Bivariate findings showed that both girls and boys having a higher-quality relationship with their father at T1 were significantly less likely to have engaged in early sexual intercourse between T1 and T2, but when assessed multivariately, these associations were no longer significant, neither for boys nor for girls.

CONCLUSIONS: Our findings suggest that a higher-quality relationship between adolescents and their parents, especially between mothers and daughters, may help to protect against early sexual initiation. Pediatricians and other health care professionals should be able to explain to parents that early sexual intercourse initiation can be associated with negative health outcomes, but that parents can play an important role in promoting healthy sexual behaviors.

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^aDepartment of Public Health, Erasmus Medical Center, Erasmus University Rotterdam, Rotterdam, the Netherlands; ^bResearch Institute of Child Development and Education (research priority area YIELD), University of Amsterdam, Amsterdam, the Netherlands; ^cDepartment of Research and Business Intelligence, Municipality of Rotterdam, Rotterdam, the Netherlands; and ^dDepartment of Kinesiology, KU Leuven, Leuven, Belgium

Ms Nogueira Avelar e Silva conceptualized and designed the study, carried out the analyses, drafted the initial manuscript, and reviewed and revised the manuscript; Dr Van de Bongardt supervised the conceptualization and design of the study, as well as the analyses and writing process, and critically reviewed and revised the manuscript; Ms van de Looij-Jansen designed the data collection instruments, coordinated and supervised data collection, and reviewed and revised the manuscript; Dr Wijtzes critically reviewed and revised the manuscript; Dr Raat supervised the conceptualization and design of the study, and critically reviewed and revised the manuscript; and all authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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WHAT'S KNOWN ON THIS SUBJECT: A poor parent-adolescent relationship has been associated with early sexual intercourse in adolescence; however, most studies have focused only on the role of mothers. Hence, only a little is known about the role of fathers.

WHAT THIS STUDY ADDS: Using a prospective design, this study assessed the role of fathers additionally to the role of mothers in the associations between mother-adolescent and father-adolescent relationship quality and early sexual intercourse initiation in a large population of Dutch adolescents.

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Adolescence is a period in which many adolescents start exploring intimate relationships and sexual behaviors, including intercourse.^{1,2} Although the initiation of sexual intercourse is a normative step in adolescents' sexual development,^{1,2} early sexual intercourse initiation (ie, before the average age) may be problematic.³⁻¹² Early sexual intercourse has been associated with risky sexual behaviors (eg, unprotected sex),³⁻⁶ sexually transmitted infections (STIs),⁷⁻¹⁰ and unwanted pregnancy.^{7,11} Early sexual starters tend to lack social, emotional, and cognitive skills that are normally gained with general life experiences, including experiences with romantic and sexual partnerships.¹³⁻¹⁵ In addition, early sexual starters have limited knowledge about the risks involved in unprotected sexual intercourse, such as the possibility of contracting STIs.¹⁶ These specificities of young adolescents may partly explain why early sexual intercourse is associated with negative outcomes.¹³⁻¹⁶ Understanding the determinants of early sexual intercourse may contribute to promote effective preventive strategies to improve adolescents' sexual health.

According to the ecological systems theory, both the social environment (eg, family) and the quality of the relationships within the social environment (eg, parent-adolescent relationships), play a role in adolescents' sexual development.¹⁷ The literature consistently shows that a poor parent-adolescent relationship quality, defined as adolescents' perception of little warmth, support, and closeness in the relationship with their parents,¹⁸ is associated with a higher likelihood of engaging in sexual intercourse at an early age.¹⁹⁻²³ However, most studies on the parent-adolescent relationship quality and adolescents' sexual behavior have focused only on the role of mothers.¹⁹⁻²¹ This can

be partly explained by a cultural aspect; in many societies mothers are the primary caregivers of children, and the primary providers of education on sexuality, for both boys and girls.²⁴⁻²⁶ Recently, studies have begun to look at the role of fathers in adolescents' sexual development, showing that, for instance, fathers' involvement may positively affect their children's sexual development.²⁷⁻²⁹ To the authors' knowledge, 2 studies have investigated the association between the quality of the father-adolescent relationship and adolescents' sexual intercourse initiation.^{27,28} These 2 studies found that adolescents who reported higher-quality relationships with their fathers at baseline (age = 15-19 years) were less likely to report sexual intercourse experience at follow-up (age = 16-19 years).^{27,28} However, 1 study included girls only,²⁸ and both studies were conducted in the United States.^{27,28} As mother-adolescent and father-adolescent relationships may differ for boys and girls,^{19,30-33} and vary across cultures,³⁴ results from these studies may not be generalizable to all adolescents or other countries.

In the current study, we assessed prospective associations between mother-adolescent and father-adolescent relationship quality and early sexual intercourse initiation among Dutch adolescents, defined as first sexual intercourse experience before the age of 16 years, which is the average age at which Dutch adolescents initiate sexual intercourse (ie 16.7 years). Firstly, based on previous studies' findings,^{19-23,35,36} we hypothesized that adolescents who would report a higher-quality relationship with their mother and/or father would be less likely to initiate early sexual intercourse at ≤ 16 years. Second, as the literature also shows that the associations between parent-adolescent relationship quality and the timing of sexual intercourse are

stronger for girls than for boys,^{19,30-33} we hypothesized that a higher-quality relationship with their mother and/or father would be more strongly associated with a lower likelihood of engaging in early sexual intercourse for girls than for boys.

METHODS

Study Design

We used data that were collected as part of the Rotterdam Youth Monitor (RYM), a longitudinal youth health surveillance system that is incorporated into the preventive youth health care system of Rotterdam, 1 of the 4 largest cities in the Netherlands.³⁷ Data were collected among a community sample of adolescents who were enrolled in secondary schools located in Rotterdam and surroundings. For the current study, data from 2 waves were used, with a 2-year interval between measurements. At T1 (2008-2009), 76 schools and 8272 students in the first year of secondary school participated in the measurement (ie, 100% school and 95% student participation rate). At T2 (2010-2011), 45 schools and 3184 students participated in the follow-up measurement (ie, 59% school and 38% student participation rate). The main reason for nonresponse at follow-up was that some schools were no longer able to participate.³⁷ Administration of the questionnaires at schools was guided by trained researchers, school nurses from the Municipal Public Health Service, and teachers.

Study Sample

For our analyses, we selected only students who participated in both measurements ($n = 3184$). In addition, to be able to predict the initiation of early sexual intercourse (ie, ≤ 16 years), we selected only participants who never had sexual intercourse at T1 ($n = 70$ excluded) and who were

≤16 years old at both T1 and T2 ($n = 3$ excluded). Furthermore, we excluded participants with missing information on the following variables: age at T1 and/or at T2 ($n = 3$), mother-adolescent or father-adolescent relationship quality at T1 ($n = 167$), and sexual intercourse at T1 and/or at T2 ($n = 10$). Results from χ^2 tests and 1-way analyses of variance (ANOVAs) showed that adolescents who were included in the final analysis sample ($n = 2931$) were more often younger ($P < .01$), enrolled in higher educational levels ($P < .001$), non-native Dutch ($P < .001$), more often lived with both biological parents ($P < .001$), and also reported a higher-quality relationship with their mother ($P < .001$) than adolescents who were excluded from the analyses ($n = 4808$).

Ethics Statement

Activities of the preventive youth health care system of Rotterdam, of which the RYM is part, have been approved by the Dutch government. The data of the RYM are protected by the Municipal Health Service of Rotterdam, which follows the Code of Conduct Health Research of the Netherlands. Adolescents received verbal information about the questionnaires each time they were applied, and their parents received written information regarding every assessment. Adolescents and their parents were free to decline participation. The questionnaires were completed on a voluntary basis, and confidentiality of responses was guaranteed.³⁸ Observational research (ie, not experimental) with confidential data gathered in routine health care does not fall within the ambit of the Dutch Act on research involving human subjects, and therefore does not require the approval of an ethics review board; separate informed consent was therefore not required.³⁷ Data were de-identified before the analyses.

Measures

Early Sexual Intercourse

Early sexual intercourse was measured using 1 item: “Have you ever had sexual intercourse? (With sexual intercourse we mean penile-vaginal intercourse)” (1 = never; 2 = once; 3 = a couple of times; 4 = regularly). For the present analyses, the item was dichotomized (0 = never; 1 = ever).³⁹

Mother-Adolescent Relationship

The quality of the mother-adolescent relationship was measured at baseline by using the Family Attachment Scale of The Communities That Care Youth Survey, for which a good validity and reliability have been reported.^{18,40,41} This scale included 3 items (ie, “Do you feel close to your mother?” “Do you share your thoughts and feelings with your mother?” “Do you enjoy spending time with your mother?”), which were scored on a 4-point scale (0 = NO!; 1 = no; 2 = yes; 3 = YES!). A total score was calculated by averaging the scores on the 3 items ($\alpha = 0.72$), where higher scores mean higher-quality mother-adolescent relationship (Mean = 2.60).

Father-Adolescent Relationship

The quality of the father-adolescent relationship was operationalized in the same way as the mother-adolescent relationship quality, but “mother” was replaced by “father” in the 3 items ($\alpha = 0.78$; Mean = 2.44).

Parental Monitoring

Parental monitoring was included as a potential confounder, and was assessed as the level at which parents monitored adolescents’ behaviors.⁴¹ This variable was also measured at baseline by using the Family Attachment Scale,⁴⁰ by 5 items (ie, “When I am not at home, one of my parents knows where I am and who I am with”; “My parents ask if I’ve gotten my homework done”; “Would your parents know if you did not

come home on time?”; “My family has clear rules about alcohol and drug use”; “Would your parents find out if you were using drugs?”), which were scored on a 4-point scale (0 = NO!; 1 = no; 2 = yes; 3 = YES!). A total score was calculated by averaging the scores on the 5 items ($\alpha = 0.71$), where higher scores mean a higher level of parental monitoring (Mean = 2.42).

Statistical Analyses

Descriptive statistics were used to portray the analysis sample characteristics at baseline. One-way ANOVA tests were applied to compare differences in T1 variables between adolescents who did and did not engage in early sexual intercourse between T1 and T2. Prospective associations between mother-adolescent and father-adolescent relationship quality and early sexual intercourse initiation were assessed by a series of logistic regression analyses, stratified by gender. In the first 2 regression models, mother-adolescent relationship quality and father-adolescent relationship quality were included in the models separately. In the third model, mother-adolescent and father-adolescent relationship quality were added to the model simultaneously, to adjust for each other’s independent contribution. We also tested gender-interaction effects (ie, gender \times mother-adolescent relationships, gender \times father-adolescent relationships), to assess whether the found effects from the stratified analyses were indeed really statistically different for boys and girls. All regression models included the following potential confounders: gender,³⁹ age,³⁹ educational level,¹⁹ ethnic background,⁴² family structure,⁴²⁻⁴⁴ and parental monitoring.⁴⁵⁻⁴⁷ A significance level of $P < .05$ was used to indicate significant effects.

RESULTS

The final sample for the prospective analyses included 2931 adolescents aged 12 to 16 years (Mean_{age@T1} = 12.5 years, SD = 0.61; Mean_{age@T2} = 14.3 years, SD = 0.60). Table 1 presents participants' descriptive characteristics at T1. A total of 233 adolescents (8.0%), including 77 girls (2.6%) and 156 boys (5.4%), had initiated sexual intercourse between T1 and T2.

Table 2 shows the bivariate differences in T1 parenting variables between early and later sexual initiators. Girls who had initiated sexual intercourse between T1 and T2 scored significantly lower on parental monitoring and on relationship quality with their mothers and fathers than girls who had not initiated sex. Boys who had initiated sexual intercourse between T1 and T2 scored significantly lower on parental monitoring and on relationship quality with their fathers than boys who had not initiated sex.

Results from the logistic regression analyses stratified by gender (Table 3) show that for girls, higher-quality relationship with mothers (Crude Model Mothers) and with fathers (Crude Model Fathers) were significantly associated with a lower likelihood of early sexual intercourse initiation. However, when mothers and fathers were combined in 1 model simultaneously (Full Model), only higher-quality relationship with mothers remained a significant protective factor against early sexual

TABLE 1 Descriptive Characteristics of the Analysis Sample at T1

	<i>n</i>	%	Mean (SD)
Gender			
Girls	1447	49.4	
Age, y			
11–16			12.5 (0.61)
Educational level			
Low	1420	48.4	
Ethnic background			
Non-native Dutch	1475	50.3	
Family structure			
Living with both biological parents	2385	81.5	
Not living with both biological parents	540	18.5	
Living partially with mothers and partially with fathers	165	5.6	
Living with mothers only	328	11.2	
Living with fathers only	25	0.9	
Living with others ^a	22	0.8	
Parental monitoring			
0–3			2.42 (0.53)
Mother-adolescent attachment relationship			
0–3			2.60 (0.48)
Father-adolescent attachment relationship			
0–3			2.43 (0.59)

Non-native Dutch included Surinamese, Turkish, Dutch Antillean, Moroccan, Cape Verdean adolescents. The family structure variable was assessed as whether adolescents lived with both biological parents or not. This variable was dichotomized: 0 = living with both biological parents or 1 = not living with both biological parents. Parental monitoring: a higher score on the scale (0–3) means higher level of parental monitoring. Mother-adolescent attachment relationship: a higher score on the scale (0–3) means a better relationship between adolescents and their mothers. Father-adolescent attachment relationship: a higher score on the scale (0–3) means a better relationship between adolescents and their fathers.

^a Living with others included living alone or in a boarding school for children or in a residence for children.

intercourse initiation, whereas the relationship with fathers became nonsignificant (Table 3).

For boys, neither relationship (with mothers or fathers) was significantly associated with early sexual initiation, neither in the Crude models, nor in the Full Model.

In the full model for the total analysis sample (Table 4), we found 1 significant gender-interaction effect, indicating that only for girls (not for boys) having a higher-quality relationship with mothers was linked

to a lower likelihood to initiate early sexual intercourse between T1 and T2 (odds ratio [OR] 0.66; 95% confidence interval [CI] 0.50–0.88, = *P*.01).

DISCUSSION

In the current study, we assessed prospective associations between mother-adolescent and father-adolescent relationship quality and early sexual intercourse initiation (ie, ≤16 years) among a large sample of Dutch adolescents. The results

TABLE 2 One-Way ANOVA Results of Bivariate Differences in T1 Parenting Variables Between Early and Later Sexual Initiators

	Girls, <i>n</i> = 1447					Boys, <i>n</i> = 1484				
	Engagement in Early Sexual Intercourse Between T1 and T2									
	No, <i>n</i> = 1370		Yes, <i>n</i> = 77		<i>F</i>	No, <i>n</i> = 1328		Yes, <i>n</i> = 156		<i>F</i>
Mean	(SD)	Mean	(SD)	Mean		(SD)	Mean	(SD)		
Age	12.43	(0.61)	12.56	(0.68)	3.14	12.45	(0.60)	12.66	(0.64)	16.90***
Parental monitoring	2.46	(0.49)	2.18	(0.62)	22.26***	2.40	(0.53)	2.22	(0.72)	16.72***
Mother-adolescent relationship	2.62	(0.45)	2.26	(0.68)	44.89***	2.54	(0.47)	2.47	(0.55)	2.96
Father-adolescent relationship	2.39	(0.60)	2.07	(0.75)	19.90***	2.50	(0.52)	2.40	(0.54)	5.09*

* *P* < .05;

*** *P* < .001.

TABLE 3 Logistic Regression Analyses Results for Associations Between Mother-Adolescent and Father-Adolescent Attachment Relationship at T1 and Early Sexual Intercourse Between T1 and T2, Stratified by Sex

	Crude Model, Mothers, ^a OR (95% CI)		Crude Model, Fathers, ^b OR (95% CI)		Full Model, Mothers and Fathers, ^c OR (95% CI)	
	Boys, n = 1481	Girls, n = 1443	Boys, n = 1481	Girls, n = 1443	Boys, n = 1481	Girls, n = 1443
Sociodemographics						
Age	1.38 (1.04–1.83)*	1.28 (0.87–1.90)	1.39 (1.05–1.83)*	1.26 (0.86–1.85)	1.39 (1.05–1.84)*	1.27 (0.86–1.88)
Educational level, 0 = high	2.18 (1.49–3.19)***	1.22 (0.72–2.07)	2.18 (1.49–3.20)***	1.28 (0.75–2.16)	2.18 (1.49–3.20)***	1.23 (0.72–2.08)
Ethnic background, 0 = Dutch	1.44 (1.00–2.07)	0.68 (0.40–1.14)	1.43 (0.99–2.06)	0.63 (0.37–1.05)	1.43 (0.99–2.06)	0.67 (0.40–1.12)
Family environment						
Family structure, 0 = Living with both biological parents	2.49 (1.70–3.64)***	3.22 (1.96–5.28)***	2.45 (1.67–3.60)***	3.09 (1.87–5.10)***	2.44 (1.66–3.59)***	3.14 (1.90–5.18)***
Parental monitoring	0.63 (0.48–0.83)***	0.63 (0.40–0.97)*	0.64 (0.48–0.84)***	0.50 (0.34–0.77)***	0.63 (0.47–0.84)***	0.63 (0.40–0.98)*
Mother-adolescent attachment relationship	0.95 (0.67–1.35)	0.43 (0.28–0.64)***	0.90 (0.66–1.22)	0.69 (0.49–0.97)*	1.04 (0.66–1.63)	0.45 (0.29–0.70)***
Father-adolescent attachment relationship					0.88 (0.60–1.30)	0.88 (0.60–1.30)

Reference groups are equal to 0.

^a Crude Model, Mothers, included sociodemographics (ie, age, educational level, and ethnic background), family variables (ie, family structure, parental monitoring), and mother-adolescent attachment relationship.

^b Crude Model, Fathers, included sociodemographics, family environment variables, and father-adolescent attachment relationship.

^c Full Model included sociodemographics, family environment variables, and mother-adolescent and father-adolescent attachment relationship simultaneously.

* $P < .05$.

*** $P < .001$.

of both bivariate and multivariate analyses showed that only for girls (not for boys) having a higher-quality relationship with mothers was prospectively linked to a lower likelihood to initiate early sexual intercourse. Furthermore, bivariate findings showed that both girls and boys who reported a higher-quality relationship with their father at T1 were significantly less likely to have engaged in early sexual intercourse between T1 and T2. However, when assessed multivariately, the associations between father-adolescent relationship quality and early sexual initiation were no longer significant, neither for boys nor for girls. Overall, our results are partially in line with our hypotheses and consistent with previous studies. Yet our findings also expand the existing literature in several ways.

First, our finding that a higher-quality relationship with mothers is a protective factor against early sexual initiation for girls, but not for boys, is in line with previous studies.^{19,30–33} This may be related to the fact that mothers are still the primary providers of sexuality education within families, and also that mothers talk more often about sexuality with daughters than with sons.^{48–52} According to social learning theory,⁵³ girls tend to learn more from and behave more according to their mothers' role modeling, whereas boys tend to learn more from and behave more according to their fathers' role modeling.^{53–55} Thus, having a high-quality relationship with mothers may contribute to more frequent parent-adolescent sexual communication,^{48–50} which in turn has been associated with a lower likelihood of early sexual intercourse initiation, particularly for girls.^{48,51} Future studies should further examine the exact mechanisms underlying the protective effects of a high-quality relationship with mothers.

TABLE 4 Logistic Regression Analysis Results for Associations Between Mother-Adolescent and Father-Adolescent Attachment Relationship at T1 and Early Sexual Intercourse Between T1 and T2

	Full Model, Mothers and Fathers, ^a <i>n</i> = 2924	
	OR	95% CI
Sociodemographics		
Gender, 0 = girls	2.25	(1.67–3.03)***
Age	1.33	(1.06–1.67)*
Educational level, 0 = high	1.81	(1.33–2.46)***
Ethnic background, 0 = Dutch	1.01	(0.82–1.48)
Family environment		
Family structure, 0 = living with both biological parents	2.69	(1.99–3.64)***
Parental monitoring	0.64	(0.50–0.80)***
Mother-adolescent attachment relationship	0.70	(0.51–0.95)*
Father-adolescent attachment relationship	0.96	(0.73–1.26)

Reference groups are equal to 0.

^a Full Model included sociodemographics, family environment variables, and mother-adolescent and father-adolescent attachment relationship simultaneously.

* *P* < .05;

*** *P* < .001.

Second, although our bivariate findings suggested that a higher-quality relationship with fathers may protect both girls and boys against early sexual initiation, the multivariate analysis results indicated no significant protective effect from fathers, neither for boys nor for girls. This finding differed from findings of previous studies.^{27,28} It may be that in our multivariate regression models, we have accounted for variables that have been consistently associated with adolescents' sexual initiation, such as family structure,^{42–44} and parental monitoring,^{45–47} which in turn may have reduced the unique predictive value of father-adolescent relationship quality. Also, our study included younger adolescents (ie, 12–15 years at T1 and 12–16 years at T2) than previous studies, which included older adolescents (ie, 15–19 years,²⁸ and 16–19 years,²⁷). This could suggest that fathers may be more influential on adolescents' sexual initiation when their children are older, perhaps because they start communicating about sexuality after their children have already formed interest in sex.⁴⁸ Finally, our different findings for fathers compared with American studies also may be related to specificities of Dutch society.²⁵

Dutch fathers spend, on average, half as much time with their children compared with Dutch mothers.²⁶ In fact, of all Organisation for Economic Cooperation and Development countries, Dutch fathers spend the least time with their children (except for Austria).⁵⁶ As a consequence, Dutch fathers share relatively few activities with their children,⁵⁶ which also may contribute to their reduced influence on the timing of adolescents' sexual initiation. More research is needed to investigate other possible mechanisms through which Dutch fathers may play a role in adolescents' sexual development, above and beyond the quality of the relationship between adolescents and their fathers. Assessing the role of fathers' participation in shared activities with their children,^{29,57} fathers' (dis)approval of their children engaging in sex,⁵⁸ fathers' behavioral control or autonomy stimulation,²⁹ and the frequency of father-adolescent communication about sexuality,⁵¹ may be relevant directions for future research.

Overall, the current study contributes to the ample scientific evidence showing that a high-quality relationship between adolescents and their parents, especially between

mothers and daughters, may help to protect against early sexual initiation. Furthermore, our findings are in line with socioecological theory¹⁷ and family systems theory,⁵⁹ which emphasize that various aspects of complex family environments, including the quality of parent-adolescent relationships and parental monitoring, contribute to the timing of adolescents' sexual initiation. More empirical research is needed to further advance our understanding of how different family relationships (ie, father-son, father-daughter, mother-daughter, and mother-son dyads)^{29,60} and other parenting practices (eg, levels of involvement, control, and sexual communication) interact with each other and influence adolescents' sexual development.

Strengths and Limitations

The current study has several strengths, including the longitudinal design, which allowed us to assess prospective associations between parent-adolescent relationship quality and early sexual intercourse initiation. Another innovative aspect was that, whereas previous studies have focused exclusively on the role of mothers,^{19–22,48} we also investigated the role of fathers in early sexual intercourse initiation. Furthermore, whereas most studies that assessed the associations between parent-adolescent relationship quality and early sexual intercourse initiation have been conducted in United States, our study was conducted in the Netherlands, where adolescents are known for relatively better sexual health outcomes compared with other countries.⁴⁸

However, a few limitations should be taken into account when interpreting the results. First, information on all variables was assessed by self-report questionnaires, which may have led to socially desirable answers. Second, nonresponse analyses showed significant differences

between adolescents included in the analysis sample and those who were excluded, with the latter being significantly older, enrolled in lower educational levels, living less often with both parents, reporting lower levels of parental monitoring, and reporting lower-quality relationships with their mothers and fathers. These differences allow one to infer that the effects of mother-adolescent and father-adolescent relationships on early sexual intercourse initiation may have been underestimated. Finally, the assessment of sexual intercourse as a single outcome may be a potential limitation of our study, because most Dutch adolescents (73.0%) follow a so-called progressive sexual trajectory, initiating different sexual behaviors in a stepwise manner: touching at Mean_{age} = 15.1 years, manual sex at Mean_{age} = 16.1 years, and sexual intercourse at Mean_{age} = 16.6 years.³¹ These other types of sexual activities may also carry potential health risks. Yet, assessing early sexual

intercourse initiation is specifically relevant for our understanding of adolescents' risky sexual behavior and healthy sexual development, because of its evidenced link with unprotected sex,³⁻⁶ STIs,⁷⁻¹⁰ and unwanted pregnancy.^{7,11}

Clinical Implications

Notwithstanding the need for more research, the findings from the current study have relevant implications for pediatricians and other health care professionals. International guidelines published by the American Academy of Pediatrics^{61,62} describe the engagement in sexual behaviors as a normative aspect of the developmental stage of adolescence, and suggest that pediatricians and other health care professionals have a responsibility to help promote a healthy sexual development of adolescents.^{61,62} Hence, they should be able to explain to parents that early sexual intercourse initiation can be associated with negative

health outcomes (eg, STIs, unwanted pregnancy), but that parents can play an important role in promoting healthy sexual behaviors.¹⁷ Specifically, by cultivating a high-quality relationship with their child, parents can contribute to create a healthy developmental environment that may help adolescents to develop responsible decision-making skills,^{29,63,64} which may positively affect their sexual behaviors, for instance regarding the right time to initiate sexual intercourse.^{29,63} By increasing awareness about this topic, pediatricians and other health care professionals can help parents to promote healthy adolescent sexual development.

ABBREVIATIONS

ANOVA: analysis of variance
CI: confidence interval
OR: odds ratio
RYM: Rotterdam Youth Monitor
STI: sexually transmitted infection

Address correspondence to Raquel Nogueira Avelar e Silva, MSc, Department of Public Health, Erasmus Medical Center, Erasmus University Rotterdam. PO Box 2040, 3000 CA, Rotterdam, the Netherlands. E-mail: r.nogueiravelaresilva@erasmusmc.nl

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REFERENCES

1. Aarons SJ, Jenkins RR. Sex, pregnancy, and contraception-related motivators and barriers among Latino and African-American Youth in Washington, DC. *Sex Educ*. 2002;2(1):5-30
2. Heywood W, Patrick K, Smith AA, Pitts M. Associations between early first sexual intercourse and later sexual and reproductive outcomes: a systematic review of population-based data. *Arch Sex Behav*. 2015;44(3):531-569
3. Stone N, Ingham R. Factors affecting British teenagers' contraceptive use at first intercourse: the importance of partner communication. *Perspect Sex Reprod Health*. 2002;34(4):191-197
4. UNAIDS. *Global AIDS Response Progress Reporting 2013: Construction of Core Indicators for Monitoring the 2011 UN Political Declaration on HIV/AIDS*. Geneva, Switzerland: World Health Organization (WHO); 2013:1-164
5. UNICEF, UNAIDS, UNFPA, ILO, WHO, and The World Bank. *Opportunity in Crisis: Preventing HIV From Early Adolescence to Young Adulthood*. New York, NY: United Nations Children's Fund (UNICEF); 2011:1-61
6. WHO. *Adolescents and Youths*. Geneva, Switzerland: World Health Organization (WHO); 2012:3-27
7. Edgardh K. Sexual behaviour and early coitarche in a national sample of 17 year old Swedish girls. *Sex Transm Infect*. 2000;76(2):98-102
8. Sandfort TG, Orr M, Hirsch JS, Santelli J. Long-term health correlates of timing of sexual debut: results from a national US study. *Am J Public Health*. 2008;98(1):155-161
9. Rissel CE, Richters J, Grulich AE, de Visser RO, Smith AM. Sex in Australia: first experiences of vaginal intercourse

- and oral sex among a representative sample of adults. *Aust N Z J Public Health*. 2003;27(2):131–137
10. Kaestle CE, Halpern CT, Miller WC, Ford CA. Young age at first sexual intercourse and sexually transmitted infections in adolescents and young adults. *Am J Epidemiol*. 2005;161(8):774–780
 11. Wellings K, Nanchahal K, Macdowall W, et al. Sexual behaviour in Britain: early heterosexual experience. *Lancet*. 2001;358(9296):1843–1850
 12. Meier AM. Adolescent first sex and subsequent mental health. *Am J Sociol*. 2007;112(6):1811–1847
 13. Ciairano S, Bonino S, Kliwer W, Miceli R, Jackson S. Dating, sexual activity, and well-being in Italian adolescents. *J Clin Child Adolesc Psychol*. 2006;35(2):275–282
 14. Dixon-Mueller R. How young is “too young”? Comparative perspectives on adolescent sexual, marital, and reproductive transitions. *Stud Fam Plann*. 2008;39(4):247–262
 15. Van de Bongardt D, Yu R, Deković M, Meeus WHJ. Romantic relationships and sexuality in adolescence and young adulthood: the role of parents, peers, and partners. *Eur J Dev Psychol*. 2015;12(5):497–515
 16. De Graaf H, Kruijer H, Van Acker JM. *S. Sex onder je 25e. Seksuele gezondheid van jongeren in Nederland anno 2012*. [Sex under 25. Sexual health of Dutch youth in 2012.] Delft, Netherlands: Uitgeverij Eburon; 2012
 17. Bronfenbrenner U, Ceci SJ. Nature-nurture reconceptualized in developmental perspective: a bioecological model. *Psychol Rev*. 1994;101(4):568–586
 18. Arthur MW, Briney JS, Hawkins JD, Abbott RD, Brooke-Weiss BL, Catalano RF. Measuring risk and protection in communities using the Communities That Care Youth Survey. *Eval Program Plann*. 2007;30(2):197–211
 19. McNeely C, Shew ML, Beuhring T, Sieving R, Miller BC, Blum RWM. Mothers’ influence on the timing of first sex among 14- and 15-year-olds. *J Adolesc Health*. 2002;31(3):256–265
 20. Bobakova D, Geckova AM, Klein D, van Dijk JP, Reijneveld SA. Protective and risk factors of early sexual initiation in youth subcultures. *Eur J Contracept Reprod Health Care*. 2013;18(4):242–250
 21. Price MN, Hyde JS. Perceived and observed maternal relationship quality predict sexual debut by age 15. *J Youth Adolesc*. 2011;40(12):1595–1606
 22. Guilamo-Ramos V, Bouris A, Lee J, et al. Paternal influences on adolescent sexual risk behaviors: a structured literature review. *Pediatrics*. 2012;130(5). Available at: www.pediatrics.org/cgi/content/full/130/5/e1313
 23. Shneyderman Y, Schwartz SJ. Contextual and intrapersonal predictors of adolescent risky sexual behavior and outcomes. *Health Educ Behav*. 2013;40(4):400–414
 24. DiClemente RJ, Wingood GM, Crosby R, Cobb BK, Harrington K, Davies SL. Parent-adolescent communication and sexual risk behaviors among African American adolescent females. *J Pediatr*. 2001;139(3):407–412
 25. Keizer R, Lucassen N, Jaddoe V, Tiemeier H. A prospective study on father involvement and toddlers’ behavioral and emotional problems: are sons and daughters differentially affected? *Fathering*. 2014;12(1):38–51
 26. Portegijs W, Keuzenkamp S. *Nederland deeltijdland*. [Netherlands part-time country.] The Hague, Netherlands: SCP; 2008
 27. Regnerus MD, Luchies LB. The parent-child relationship and opportunities for adolescents’ first sex. *J Fam Issues*. 2006;27(2):159–183
 28. Rink E, Tricker R, Harvey SM. Onset of sexual intercourse among female adolescents: the influence of perceptions, depression, and ecological factors. *J Adolesc Health*. 2007;41(4):398–406
 29. Coley RL, Votruba-Drzal E, Schindler HS. Fathers’ and mothers’ parenting predicting and responding to adolescent sexual risk behaviors. *Child Dev*. 2009;80(3):808–827
 30. Van de Bongardt D, Reitz E, Dekovic M. Vroeg seksueel debuut in Nederland: een longitudinale studie naar de rol van individuele kenmerken, opvoeding en leeftijdgenoten. [Early sexual debut in the Netherlands: A longitudinal study on the role of individual characteristics, parenting, and peers.] *Kin en Adolescent Themanummer: “Intieme Relaties en Seksualiteit” [Child and Adolescent Special Issue: “Intimate Relationship and Sexuality”]*. 2012;(33):194–205
 31. de Graaf H, Vanwesenbeeck I, Meijer S, Woertman L, Meeus W. Sexual trajectories during adolescence: relation to demographic characteristics and sexual risk. *Arch Sex Behav*. 2009;38(2):276–282
 32. De Graaf H, Vanwesenbeeck I, Woertman L, Meeus W. Opvoeding en seksuele ontwikkeling van adolescenten: een literatuurstudie. [Parenting and sexual development of adolescents: a literature study.] *Pedagogiek*. 2011;29:10–31
 33. Rose A, Koo HP, Bhaskar B, Anderson K, White G, Jenkins RR. The influence of primary caregivers on the sexual behavior of early adolescents. *J Adolesc Health*. 2005;37(2):135–144
 34. Shwalb DW, Shwalb BJ, Lamb ME. Fathers in cultural context. *Psychol Stud (Mysore)*. 2013;58(4):464–465
 35. Guilamo-Ramos V, Bouris A, Jaccard J, Gonzalez B, McCoy W, Aranda D. A parent-based intervention to reduce sexual risk behavior in early adolescence: building alliances between physicians, social workers, and parents. *J Adolesc Health*. 2011;48(2):159–163
 36. Kirby D. Antecedents of adolescent initiation of sex, contraceptive use, and pregnancy. *Am J Health Behav*. 2002;26(6):473–485
 37. Bannink R, Broeren S, van de Looij-Jansen PM, de Waart FG, Raat H. Cyber and traditional bullying victimization as a risk factor for mental health problems and suicidal ideation in adolescents. *PLoS One*. 2014;9(4):e94026
 38. Nogueira Avelar e Silva R, Wijtzes A, Van de Bongardt D, Van de Looij-Jansen P, Bannink R, Raat H. Early sexual intercourse: prospective associations with adolescents physical activity and screen time. *PLoS ONE*. 2016;11(8):1–16
 39. Boislard P MA, Poulin F. Individual, familial, friends-related and contextual predictors of early sexual intercourse. *J Adolesc*. 2011;34(2):289–300
 40. Arthur MW, Hawkins JD, Pollard JA, Catalano RF, Baglioni AJ Jr. Measuring

- risk and protective factors for substance use, delinquency, and other adolescent problem behaviors. The Communities That Care Youth Survey. *Eval Rev.* 2002;26(6):575–601
41. Briney JS, Brown EC, Hawkins JD, Arthur MW. Predictive validity of established cut points for risk and protective factor scales from the communities that care youth survey. *J Prim Prev.* 2012;33(5-6):249–258
 42. Manlove J, Wildsmith E, Ikramullah E, Terry-Humen E, Schelar E. Family environments and the relationship context of first adolescent sex: correlates of first sex in a casual versus steady relationship. *Soc Sci Res.* 2012;41(4):861–875
 43. Longmore MA, Manning WD, Giordano PC, Rudolph JL. Self-esteem, depressive symptoms, and adolescents' sexual onset. *Soc Psychol Q.* 2004;67(3):279–295
 44. Price MN, Hyde JS. When two isn't better than one: predictors of early sexual activity in adolescence using a cumulative risk model. *J Youth Adolesc.* 2009;38(8):1059–1071
 45. Wight D, Williamson L, Henderson M. Parental influences on young people's sexual behaviour: a longitudinal analysis. *J Adolesc.* 2006;29(4):473–494
 46. Capaldi DM, Stoolmiller M, Clark S, Owen LD. Heterosexual risk behaviors in at-risk young men from early adolescence to young adulthood: prevalence, prediction, and association with STD contraction. *Dev Psychol.* 2002;38(3):394–406
 47. Jovic S, Delpierre C, Ehlinger V, et al. Associations between life contexts and early sexual initiation among young women in France. *Perspect Sex Reprod Health.* 2014;46(1):31–39
 48. van de Bongardt D, de Graaf H, Reitz E, Deković M. Parents as moderators of longitudinal associations between sexual peer norms and Dutch adolescents' sexual initiation and intention. *J Adolesc Health.* 2014;55(3):388–393
 49. Dittus PJ, Jaccard J. Adolescents' perceptions of maternal disapproval of sex: relationship to sexual outcomes. *J Adolesc Health.* 2000;26(4):268–278
 50. Jaccard J, Dittus PJ, Gordon VV. Maternal correlates of adolescent sexual and contraceptive behavior. *Fam Plann Perspect.* 1996;28(4):159–165, 185
 51. Widman L, Choukas-Bradley S, Noar SM, Nesi J, Garrett K. Parent-adolescent sexual communication and adolescent safer sex behavior: a meta-analysis. *JAMA Pediatr.* 2016;170(1):52–61
 52. Kapungu CT, Baptiste D, Holmbeck G, et al. Beyond the "birds and the bees": gender differences in sex-related communication among urban African-American adolescents. *Fam Process.* 2010;49(2):251–264
 53. Bandura A. *Social Learning Theory.* New York, NY: General Learning Press; 1971
 54. Daniel RM. Social learning and personality development. *Am Sociol Rev.* 1966;31(1):128–130
 55. Morgan SP, Lye DN, Condran GA. Sons, daughters, and the risk of marital disruption. *Am J Sociol.* 1988;94(1):110–129
 56. Fatherhood Institute. *The Fatherhood Report 2010-11. The Fairness in Families Index.* Abergavenny, UK: Fatherhood Institute; 2010
 57. Ream GL, Savin-Williams RC. Reciprocal associations between adolescent sexual activity and quality of youth-parent interactions. *J Fam Psychol.* 2005;19(2):171–179
 58. Dittus P, Jaccard J, Gordon V. The impact of African American fathers on adolescent sexual behavior. *J Youth Adolesc.* 1997;26(4):445–465
 59. Michael N, Schwartz R. *Family Therapy: Concepts and Methods.* 10th ed. Boston, MA: Pearson; 2013
 60. Van de Bongardt D, Reitz E, Overbeek G, Boislard M-A, Burk B, Deković M. Observed normativity and deviance in friendship dyads' conversations about sex and the relations with youths' perceived sexual peer norms [published online ahead of print July 8, 2016]. *Arch Sex Behav.* 10.1007/s10508-016-0763-x
 61. Alderman EM. AMA Guidelines for Adolescent Preventive Services (GAPS): recommendations and rationale. *JAMA.* 1994;272(12):980–981
 62. Hagan JF, Shaw JS, PM D. Bright Futures guidelines for health supervision of infants, children, and adolescents. 2008. Available at: <https://brightfutures.aap.org/Bright Futures Documents/18-Adolescence.pdf>. Accessed June 16, 2016
 63. De Graaf H, Vanwesenbeeck I, Woertman L, Meeus W. Parenting and adolescents' sexual development in western societies: a literature review. *Eur Psychol.* 2011;16(1):21–31
 64. Van de Bongardt D, Reitz E, Deković M. Indirect over-time relations between parenting and adolescents' sexual behaviors and emotions through global self-esteem. *J Sex Res.* 2016;53(3):273–285

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