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SEXUAL RISK BEHAVIOR OF ADOLESCENTS

The Role of Parent-Adolescent Communication, Parental Monitoring, Gender and Education
Level in the Sexual Risk Behavior among Dutch Adolescents

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Abstract

The role of parents is crucial when it comes to the sexual development of youth. The present cross-sectional study examined the relationships between parent-adolescent communication, parental monitoring and the sexual risk behavior of adolescents, and tested whether these relations were moderated by gender and education level. While most studies of parental communication have focused on communication in general, this study specifically focused on the quality of communication. Data from the large-scale study HBSC (Health Behaviour in School-aged Children) was used. Participants were 5,719 Dutch secondary school students, aged 12 to 18 ($M = 15.05$) and lived in intact or single-parent families. Results of a hierarchical binary logistic regression analysis indicated that stronger parental monitoring was related to less sexual risk behavior whereas the quality of parent-adolescent communication was not, while both controlled for family situation and age. No interaction effects were found. These findings indicate that adolescents who feel they can easily talk to their parents do not display less sexual risk behavior. Instead, parental monitoring shows to be a crucial factor in preventing children from behaving in sexually risky ways. Implications of these specific characteristics for adolescents' sexual development are discussed. Further research is needed to identify the topics parents use to communicate with their children on subjects concerning sexual development and behavior.

Keywords: sexual risk behavior, adolescents, parental monitoring, quality of communication, HBSC

Introduction

Sexual promiscuity among adolescents is a worldwide concern, leading to sexually transmitted diseases (STD) and unwanted pregnancies (Wellings et al., 2006). While in the Netherlands adolescents are considered relatively sexually healthy, research indicates there is room for improvement regarding their knowledge and communication about sexual topics (De Graaf, Kruijer, Van Acker, & Meijer, 2012). Sexual health is a complex and risky area, where adolescents are especially vulnerable, as a majority engages in sexual intercourse without sufficient knowledge or experience (De Graaf et al., 2012). Sexual risk behavior can be defined as behavior that increases one's risk of contracting sexually transmitted infections and experiencing unintended pregnancies (Strachman, Impett, Henson, & Pentz, 2009). Understanding what factors influence this behavior is important, since it affects the health of the adolescent, as well as that of his or her partners. This study focusses on parents as an influential factor in their children's sexual risk behavior.

The role of parents is crucial when it comes to the sexual development of youth, as many studies demonstrate. Various empirical studies, for example, indicate a relationship between parental monitoring and problematic behavior of adolescents (DiClemente et al., 2001; Huebner & Howell, 2003; Miller, Forehand, & Kotchick, 1999; Wang et al., 2013). Others found a relationship between parent-adolescent communication and problematic behavior of adolescents (Finkenauer, Engels, & Meeus, 2002; Kerr, Stattin, & Trost, 1999; Kotchick, Shaffer, Miller, & Forehand, 2001; Noller, 1995). Most studies documented a link between higher levels of parent-adolescent communication and parental monitoring with lower levels of problematic behavior. While the relationship between parental involvement and risk behavior is well-documented, a more detailed account of whether, specifically, the quality of communication is related to adolescent risk behavior remains missing. To fill this gap, this study aims to achieve better insight into how the quality of communication and parental monitoring shape the sexual behavior of adolescents, with specific focus on Dutch youth.

Adequate parenting is a key factor for a healthy development of adolescents. When children grow up, the transition to adolescence involves significant changes. The evolution towards becoming adult is characterized by greater independency and autonomy. During this phase the adolescent learns he can decide what and how much he will tell his parents about his life (Huebner & Howell, 2003). Parents can contribute to this transition by providing a

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safe environment in which the child can develop. By teaching their child about rules, values and norms, parents as educators are crucial for the healthy development and sexual socialization of their children (Byers & Sears, 2012; Maccoby, 1992). This study investigates the relation between parental socialization and sexual risk behavior of adolescents, by focussing on both the quality of communication between parent and adolescent and parental monitoring. Since research indicates this effect might be moderated by both gender and education level, these will be part of the study as well.

Communication

Good communication with parents is central to the healthy development of adolescents (Finkenauer et al., 2002; Noller, 1995). Parents may consciously or unconsciously communicate certain norms and expectations to others, and via these norms and values their children learn how to behave (Finkenauer et al., 2002; Kerr et al., 1999). A good relationship between parents and their children helps to provide this safe environment where communication can take place. It is important to take into account the quality of communication. Qualitative communication is related to the quality of relationship adolescents have with their parents and can be described as the feeling of adolescents to be able to talk with their parents easily and openly (Finkenauer et al., 2002). A focus on qualitative communication can help us understand and maybe even prevent adolescents' sexual risk behavior.

Instead of focusing on parent-adolescent conversations about sexual topics, as much research does, it might be more important to focus on whether adolescents have a feeling that they can talk to their parents in general. Empirical studies examining the role of parents through communication about sexual topics show ambiguous results. Some studies found that family discussions about sexual topics are positively related to the sexual behavior of adolescents by showing that communicating about sex decreases the sexual risk behavior of adolescents (Dutra, Miller, & Forehand, 1999; Hutchinson, 2002; Wight, Williamson, & Henderson, 2006). Yet, other studies found no decrease in sexual risk behavior through communication about sex between adolescents and parents (Huebner & Howell, 2003; Shoop & Davidson, 1994). This ambiguity could be explained by the fact that both parents and children find it difficult to talk with each other about sexual topics (Byers & Sears, 2008; Rosenthal & Feldman, 1999). As a result, many parents do not communicate with their adolescents about sexuality at all (Jerman & Constantine, 2010). De Neef and Van Dijk

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(2010) argue there is a taboo in the Netherlands on talking about sexually related topics. This taboo forms an obstacle for adolescents to gain information about sexual topics and how to avoid pregnancy. Being able to communicate with parents is not always an indicator of a good relationship with them. It might be more important that the adolescent has the feeling he can talk to his parents if he needs them. Only when adolescents believe they can easily talk with their parents, may communication about sex occur (Rosenthal & Feldman, 1999).

Consequently, as communication with parents is an imperative for the well-being of adolescents, it is important to focus on qualitative communication and the perception of adolescents in this respect, rather than quantitative communication. This study assumes that adolescents must believe their parents are approachable for having conversations before they will communicate with them about sensitive sexual topics. Therefore, it is hypothesized that qualitative communication in general between adolescents and their parents reduces the potential for sexual risk behavior of the adolescent.

Monitoring

Parental monitoring is another key in reducing the sexual risk behavior of adolescents (Huebner & Howell, 2003, Rodgers, 1999, Stattin & Kerr, 2000). Parental monitoring can be defined as “tracking and surveillance of children’s behavior” (Stattin & Kerr, 2000, p.1072). When children get older, they will spend more days without the supervision of his parents (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996). Since adolescents, the older they get, no longer spontaneously share all their information with parents (Stattin & Kerr, 2000), parents must find a way to stay informed about the whereabouts of their child. They can, for example, ask their children for information, so they know where and with whom their child is spending time (Stattin & Kerr, 2000). Stattin and Kerr (2000) claim parental monitoring can only be effective when the child discloses information voluntarily. These findings reinforce the vital function of parent–adolescent communication.

The importance of parental monitoring is apparent in research about sexual risk behavior of adolescents. Empirical studies show that poorly monitored youths engage more frequently in risky sexual activities (DiClemente, et al., 2001; Li, Stanton, & Feigelman, 2000; Miller et al., 1999). Parental monitoring can thus lower sexual risk behavior among adolescents. In this study it is hypothesized that adolescents who perceive more parental monitoring will display less risky sexual behavior than adolescents who have parents who monitor less.

Gender

De Graaf et al. (2012) found a few gender related differences in adolescents' sexual behavior. For example, 34% of female adolescents use condoms, while only 22% of male adolescents do so. Regarding communication about sexuality, girls seem to communicate more often about sexual topics with their parents than boys (Dilorio, Kelley, & Hockenberry-Eaton, 1999). Girls also seem to communicate more easily with their parents about emotional and sensitive topics (Fivush, Brotman, Buckner, & Goodman, 2004). Regarding parental monitoring, parents ask more questions about the whereabouts of their female adolescents, and therefore have better insight into their lives, than they have about their male children (Stattin & Kerr, 2000). The literature further suggests that female adolescents are more often recipients of sexual instructions than male adolescents, and thus more strongly affected by parental education in relation to their sexual risk behavior (Dilorio et al, 1999). Since girls seem to open up more easily to their parents, it appears that parent-adolescent communication and parental monitoring are more effective for girls.

Gender might moderate the relation between parent-adolescent communication and parental monitoring on the one hand, and sexual risk behavior on the other. A study of Michael and Ben-Zur (2007) found evidence that the role of parents is more important for girls in protecting them from risk behavior whereas the risk behavior of boys was more strongly related to their peers. In terms of sexual risk behavior, a close relationship with parents seems to be more important for girls, as it has a stronger effect on their risk behavior, than for boys. It is hypothesized that the effects of both parent-adolescent communication and parental monitoring on the sexual risk behavior is moderated by gender with a stronger negative effect for female adolescents than for male adolescents.

Level of Education

The second variable that might moderate the effect between parent-adolescent communication and parental monitoring on the one hand, and sexual risk behavior on the other, is the education level of adolescents. Level of education affects the sexual risk behavior of the adolescent as well as the role parents have in the upbringing of their child. First, adolescents with a lower level of education are sexually more active, have less sexual knowledge (De Graaf et al., 2012) and have more sexual partners than more highly educated adolescents (Brugman, Goedhard, Vogels, & Van Zessen, 1995). Second, the effect of education level on parental monitoring has not yet been studied, but research does indicate

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that adolescents with a lower level of education communicate less with their parents when they are struggling with something than more highly educated adolescents do (Zeijl, Van Den Eeckhout, Ter Bogt, & Vollebergh, 2007).

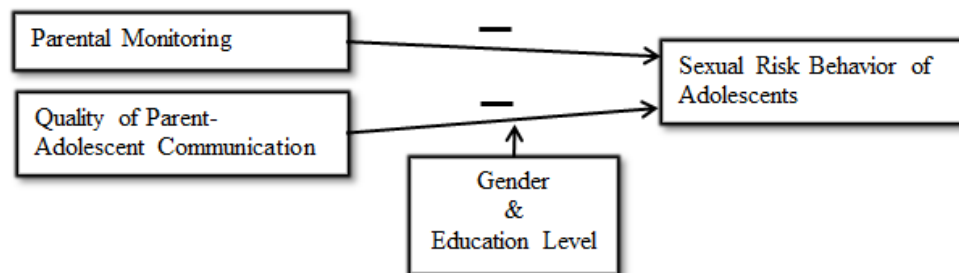
Little research has been done to explain the differences in education level of adolescents in relation to their sexual risk behavior. Schrijvers, Schuit and Schuit (2010) point out that less educated adolescents are more strongly connected with their peers than with their parents. Based on this information one can assume that the role of parents has a stronger effect for adolescents with a higher level of education. Research further indicates that because less educated adolescents more often have behavior problems, their parents struggle more with the monitoring of their children (Schrijvers, Schuit & Schuit, 2010). For that reason this study assumes that when parents monitor, this has less effect on the risk behavior of less educated adolescents than of more highly educated adolescents. It is thus hypothesized that the effects of both parent-adolescent communication and parental monitoring on sexual risk behavior are moderated by the level of education with a stronger negative effect for more highly educated adolescents than for less educated adolescents.

The Present Study

The present cross-sectional study aims to test six hypotheses (Figure 1). First the main effects of both the quality of parent-adolescent communication and parental monitoring on the sexual risk behavior of adolescents are tested. The expectation is that both main effects are negatively associated with the sexual risk behavior of adolescents (hypotheses 1 & 2). Gender and school level are expected to moderate the strength of these relationships. The expectation is a stronger negative relationship between the quality of parent-adolescent communication and sexual risk behavior among females and more highly educated adolescents (hypotheses 3 & 4). A negative relationship between parental monitoring and sexual risk behavior is also expected to be stronger for females and more highly educated adolescents (hypotheses 5 & 6).

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Figure 1. Conceptual model of the relationships between parental monitoring, quality of parent-adolescent communication, gender, school level and the sexual risk behavior of adolescents.



Method

Research Design and Procedure

The current study used data from the Dutch Health Behavior in School-aged Children (HBSC) database. Data were collected during the school year of 2009-2010 according to the protocol of the international HBSC study (Currie, Gabhainn, Godeau, & International HBSC Network Coordinating Committee, 2009). Through random sampling a representative sample of adolescents in higher education was selected. In total, 162 secondary schools were approached and 68 secondary schools were willing to participate (48%). The main reason that 98 schools did not participate was because they were already involved in other research studies (36%). Parents were informed by means of a letter. School based survey questionnaires were administered during class hours. During the completion of the questionnaires, a research assistant was present to answer possible questions and to guarantee the confidentiality of the answers. The main reason for non-participation by students was absence from the classroom due to illness (Van Dorsselaer et al., 2010). Questions related to health, behavior, risks and life circumstances were asked. "All questions in HBSC are subject to validation studies and piloting at national and international levels, with the outcomes of these studies often being published" (Roberts, et al. 2009, p. 2).

Participants

A total of 5,719 adolescents participated in the Dutch HBSC study. The main focus of the study was the sexual risk behavior of adolescents, so only sexually active adolescents (627) were selected for the research sample. The indicator of sexual activity was based on the respondent's report of ever having had sexual intercourse. Gender was almost equally divided (52.3% boys). The age of respondents ranged from 12 to 18 years ($M= 15.05$, $SD= 1.05$). The majority of the respondents (97.7%) reported they were born in the Netherlands and live together with both of their parents (69.4%). About a third (33.7%) of the adolescents were in higher education, and two-thirds (66.3%) in lower levels of education.

Measures

Sexual risk behavior was measured to give insight in the participants' sexual behavior. The respondents received three response options about their sexual behavior, 1= *I have never had sex*, 2= *I have had sex but unsafe* and 3= *I have had sex and safe*. As

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described previously, all respondents who did not have sexual intercourse were not taken into account in the analysis. The sexually active respondents were further asked to specify which form of contraception they had used. All combinations of contraception were possible. However, since not all contraceptives are equally safe, it was coded that the use of birth control pill or a condom are safe (=0), while using another type of contraceptive (spermicide, withdrawal or other method) or no contraceptive was considered as sexually risky (=1).

Quality of parent-adolescent communication was measured by the following question: “How easy is it for you to talk with the following persons?” For each parent the respondent could answer with a four-point Likert scale ranging from 0 (*really easy*) to 4 (*really difficult*). The answers for both parents were taken into account together. There was also the option ‘*do not have/do not see*’ which in this analysis was considered as missing. A high score on this scale means a higher quality of parent-adolescent communication.

Parental monitoring was measured with three items. (1) “Before you go home, do your parents want to know with whom or where you will go?” (2) “Do you need permission from your parents to go out in the evening?” and (3) “When you go out in the evening, do your parents want to know afterwards with whom or where you went?” The respondents could respond on a three-point Likert scale ranging from 1 (*never*) to 3 (*always*). Responses were summed, with higher scores indicating higher levels of parental monitoring. (Cronbach’s alpha = .74).

Education level was measured by asking the respondents which school level they are in. This variable was recoded into a dichotomous variable, indicating vmbo-b, vmbo-t as low education (=1) and havo, havo/vwo, vwo as high education (=0).

Control variables. Research has shown that the older the adolescent gets, the higher the chance is that the adolescent is sexually active (Graaf et al., 2012). Other research has found that adolescents from two-parent families report having a lower level of sexual experience than adolescents who live in a single-parent family (Young, Lensen, Olsen, & Cundick, 1991). Therefore, gender and the family composition of the adolescent were included as covariates in this analysis. Both are coded as dichotomous variables. Boys and living in a single-parent situation are the reference categories.

Data Analysis

Data analyses were conducted using SPSS Statistics version 21. A significance level of $p = < .05$ was used to test whether the relations are significant. After coding all variables

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the dataset was checked for missing values. For each variable this was less than 8%, so 'exclude cases listwise' was used during the analysis. The data did not contain extreme values. First, descriptive statistics were obtained and analyzed regarding the control variables (age and family situation), independent variables (communication and parental monitoring), moderators (gender and education level) and the dependent variable (sexual risk behavior). A Chi-Square test for independence was conducted to compare the scores of boys and girls for their family situation, education level and sexual risk behavior. The assumption of Chi-Square concerning the minimum expected cell frequency was not violated because 0 cells (0.0 %) counted less than 5 (Palland, 2013).

Relationships between all variables were investigated using Spearman and Pearson correlation coefficients. For the Pearson correlations preliminary analyses were performed to ensure the assumptions of linearity, normality and homoscedasticity. None of these assumptions were violated (Field, 2013). Spearman correlations were used for the non-parametric variables as they violated the parametric assumption of normality. To prevent errors in statistical inference, the continuous variables were centred.

Subsequently, a hierarchical bivariate logistic regression was conducted. First the assumptions belonging to this test were checked. The continuous variables were tested if they were linearly related to the log of the dependent variable. In block 1, all control variables were included. In block 2, the main effects (communication and parental monitoring) were added to examine the first two research questions. Next, to examine the interactions, interaction variables were computed with the centred variables. To examine the third and fourth research questions about the moderating effect of gender, both interaction terms (gender*communication and gender*parental monitoring) were included in block 3. In block 4 the other interaction terms (education level*parental monitoring and education level*communication) were included to examine the final two research questions. A significant interaction effect indicates that the effect of the one independent variable depends on the level of the other independent variable.

Results

Descriptive Statistics

Table 1 depicts the means and standard deviations for the control, independent and dependent variables. The overall mean of parental monitoring was 3.63 ($SD = 1.02$) which is a rather high mean. The overall mean of communication 3.06 ($SD = .79$) is also rather high on a scale from 1 to 4.

Table 1.

Descriptive Statistics of the Control, Independent and Dependent Variables

Variable	N	Mean (SD)	Minimum	Maximum
Age	627	15.05 (1.05)	12.00	18.00
Monitoring	614	3.63 (1.02)	1.00	5.00
Communication	612	3.06 (.79)	1.00	4.00
Variable	N	%	Minimum	Maximum
Family Situation	615		0	1.00
Single Parent (%)		28.7%		
Gender	627		0	1.00
Male (%)		52.3%		
School Level	627		0	1.00
Low (%)		66.3%		
Sexual Risk Behavior	578		0	1.00
Low (%)		34.8%		

A Chi-Square test for independence was used to explore the relationships between the categorical variables (family situation, gender, education level and sexual risk behavior). The test indicated no significant association between gender and level of education, $X^2(1) = .01$, $p = .92$. Additionally, no significant association was found between gender and family situation, $X^2(1) = .65$, $p = .42$. However, a significant association between gender and sexual risk behavior was found, $X^2(1) = 12.69$, $p < .001$. The percentage of engagement in sexual risk behavior was higher for males (34.9%) than for females (27.3%).

Correlations between the Control, Independent and Dependent Variables

Correlation coefficients between all relevant variables are reported in Table 2. The main results are a positive correlation between adolescents' level of education, family situation and gender with monitoring. More highly educated adolescents report more parental monitoring ($r = .18$, $p < .001$), this indicates that adolescents report being more strongly

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monitored by their parents when they are more highly educated. Family situation is also significantly correlated with a higher amount of parental monitoring ($r = .10, p < .05$) which means that parents from a two-parent family monitor their adolescents more strongly than single parent families. Furthermore, gender is significantly positively correlated to monitoring ($r = .23, p < .001$), which means girls receive more parental monitoring than boys. Gender is also negatively related to communication ($r = -.21, p < .001$) and sexual risk behavior ($r = -.15, p < .001$). This means girls engage in risky behavior less than boys. Additionally, the results show that the quality of communication between girls and parents is lower than the quality of communication between boys and parents. However, it should be noted that all coefficients fluctuate between .10 and .23, therefore all these significant correlations can be considered weak (Field, 2009).

Table 2.
Spearman and Pearson Correlations of all Variables (N = 547)

Measure	1	2	3	4	5	6	7
1. Age	-						
2. Family situation ^{Single}	.11**	-					
3. Education level ^{Low}	.16**	.11**	-				
4. Gender ^{Male}	-0.05	-0.03	0	-			
5. Communication	<u>-0.03</u>	0.05	-0.05	-.21**	-		
6. Monitoring	<u>-0.02</u>	.09*	.18**	.23**	<u>-0.05</u>	-	
7. Sexual risk behavior	-.10*	0.06	0.05	-.15**	-0.03	-0.06	-

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

Note. Underscored values are Pearson correlations

Relationships of Parental Monitoring and Communication with Sexual Risk Behavior and moderation by Gender and Education Level

A hierarchical binary logistic regression (Table 3) was performed to assess the impact of the control variables, independent variables and interactions on the likelihood that adolescents are involved in sexual risk behavior. First, the relation between the control variables (age and family situation) and sexual risk behavior was examined (block 1). This block was found statistically significant, $X^2(2, N = 547) = 14.48, p = .001$. It explained between 2.6% (Cox and Snell R square) and 3.6% (Nagelkerke R squared) of the explained variance in sexual risk behavior, and correctly classified 62.7% of all cases. The first block shows that only age is statistically significantly related to sexual risk behavior ($OR = .74, p = .001$). That is, older adolescents have a lower chance of engaging in sexual risk behavior.

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The second block contained the control variables and both main predictors (communication and parental monitoring). Adding the main predictors resulted in a minor increase of the Chi-Square, $X^2 (4, N = 547) = 19.37, p = .001$. The explained variation in sexual risk behavior ranged from 3.5% (Cox and Snell R Square) and 4.7% (Nagelkerke R squared), and correctly classified 63.4% of all cases. The main predictor, parental monitoring, is significantly related to the outcome of the model ($OR = .84, p = .047$). This odds ratio indicates that adolescents who reported being strongly monitored by their parents were less involved in sexual risk behavior than adolescents who reported being less monitored by their parents. Quality of communication was not significantly related to sexual risk behavior ($OR = .88, p = .29$). The interactions between gender x communication and gender x parental monitoring were included in the third model. This block was statistically significant, $X^2 (6, N = 547) = 22.56, p = .001$. Neither interaction was found to be statistically significant. Lastly both interactions education level x communication and education level x parental monitoring were included in block 4. This full model was statistically significant, $X^2 (8, N = 547) = 23.92, p = <.001$ and explained between 4.3% (Cox and Snell R Square) and 5.8% (Nagelkerke R squared) of the variance. Of all cases, 63.6% were correctly classified by this model. Both interactions were found to be not statistically significant.

Table 3.

Hierarchical Binary Logistic Regression Analysis Predicting Sexual Risk Behavior from Parental Monitoring and Communication, Interactions by Gender and Education Level, Controlled for Age and Family Situation

	OR	B (SE)	p	95% CI for OR	
				Lower	Upper
Step 1.					
Age	0.74	-.30 (.09)	0	0.62	0.88
Family Situation ^{Single}	1.46	.38 (.20)	0.14	1	2.14
Step 2.					
Parental Monitoring	0.84	-.18 (.10)	0.04	.70	1.00
Communication	0.88	-.12 (.12)	0.29	.70	1.11
Step 3.					
Gender ^{Male}	0.56	-.0116	0.01	0.38	0.84
Gender*Monitoring	1.16	1.15 (.19)	0.44	0.8	1.67
Gender*Communication	1.01	.01 (.25)	0.96	0.63	1.64
Step 4.					
Education Level ^{Low}	1.42	.35 (.21)	0.1	0.93	2.15
Education Level*Monitoring	0.89	-.12 (.21)	0.56	0.59	1.34
Education Level*Communication	0.95	-.05 (.26)	0.85	0.57	1.58

Note: $R^2 = 0.8$ (Hosmer & Lemeshow), 0.6 (Cox & Snell), 0.8 (Nagelkerke)
Model $X^2 (6) = 33.56, p = <.01$.

Discussion

The aim of the present study was to examine the relationships between parental monitoring and the quality of communication and sexual risk behavior, and to test whether these associations are moderated by gender and education level. Findings indicated that parental monitoring is related to the sexual risk behavior of adolescents, whereas the quality of communication is not. Furthermore, no interaction effects were found, meaning that gender and level of education have no moderating effect on the relationship between quality of communication and sexual risk behavior nor on the relationship between parental monitoring and sexual risk behavior.

Communication and Sexual Risk Behavior

Against expectations, no significant relationship; between the quality of parent-adolescent communication and sexual risk behavior of adolescents was found. Having the feeling of being able to talk easily with parents in general does not seem to affect the risky behavior of adolescents in sexual activities. Three possible explanations can be posed to understand the lack of relationship between quality of communication and adolescents' risk behavior.

A first explanation for the contradiction in findings can lie in the bonding between adolescents and parents. Quality of communication often goes hand in hand with a good relationship between people, as Finkenauer et al. (2002) indicated that when parents and their children have a good relationship with each other, parents are more approachable when their child wants to talk, for instance about sexual topics. When there is strong bonding between adolescents and parents, their attitude towards each other is more open and they talk more frequently with each other (Martino et al., 2008; Whitaker, Miller, May, & Levin, 1999). Only when this connection exists between parents and child, are parents more approachable when their child wants to talk about sensitive topics (De Neef & Van Dijk, 2010). A qualitative parent-child relationship may be a prerequisite to enable effective parent-child communication about sex. Yet, in the current study only the quality of general communication, and not the parent-child relationship, was investigated. Therefore, the level of bonding between parent and adolescent while investigating the role of communication on sexual risk behavior of adolescents is an important factor to take into account.

A second explanation may be found in the research of Byers & Sears (2012). They

argue that parents find talking about sexuality a complicated issue because they are confronted with their child's emerging sexuality and involvement in romantic relationships (Byers & Sears, 2012). So even though adolescents have the feeling that they can talk to their parents in general, and perhaps want to talk about sexual topics, this does not contribute to their sexual health because of the complexity of the topic and reluctance of parents and adolescents to bring up this topic.

Furthermore, no specific questions were included in this research about the topics adolescents communicate with their parents, and several studies (Jaccard, Dittus, & Gordon, 1998; Whitaker & Miller, 2000) state that the absence of these particular questions can be the reason why no relation is found between communication with parents and the sexual risk behavior of adolescents. Whitaker and Miller (2000) explain that using a general measure of communication ignores particular topics, while these topics can be determining in whether parent-adolescent communication is related to the sexual risk behavior of adolescents.

Parental Monitoring and Sexual Risk Behavior

Being more strongly monitored by parents lowers the risk of engagement in sexual risk behavior of adolescents. This finding is in line with this study's second hypothesis and several empirical studies that indicate that parental monitoring is crucial in reducing the risk behavior of adolescents in general (Wang et al., 2013), and specifically sexual risk behavior (DiClemente, et al., 2001; Huebner & Howell, 2003; Miller et al., 1999; Rodgers, 1999; Stattin & Kerr, 2000). Thus, having parents who strongly monitor their adolescents, decreases the chance of being involved in sexual risk behavior.

An explanation for why monitoring is found to be significant can be that the operationalization of monitoring can give different results in regard to sexual risk behavior. Stattin and Kerr (2000) explain that knowing about the whereabouts of your child can be achieved through *parental control*, *child disclosure* and *parental solicitation*. This study measured monitoring by asking if the parents applied rules or imposed restrictions to restrict the freedom of their children. This measure can be considered as a form of parental control; wanting to know where and with whom the child hangs out. The current findings indicate that for sexual risk behavior the quality of parent-child communication is less important, whereas restricting adolescents' opportunities to be involved in sexual risk behavior is most relevant. Thus, in this study only the parental monitoring as parental control is found to be related to the sexual risk behavior of adolescents. However, one can assume that all types of monitoring

play a role in reducing the sexual risk behavior of adolescents since studies found evidence that monitoring in general reduces the involvement in all types of risk behavior, such as antisocial behavior and alcohol use as well as sexual risk behavior (DiClemente, 2001; Li et al., 2000).

Lack of Moderation

The previously discussed relationships between parental monitoring and parent-child communication did not differ between boys and girls, nor between adolescents in low versus high levels of education. Literature gave the impression a gender difference could be found since girls seem to open up more easily to their parents (Fivush, 2004) and participate in less sexual risk behavior (De Graaf et al., 2012). However, the impact of parental monitoring and communication is not found to be different for boys and girls in relation to their sexual risk behavior. These results do not seem to be in line with the study of Michael and Ben-Zur (2007) who demonstrated that the role of parents (i.e. less control) decreases the sexual risk behavior of girls, since boys were more strongly affected by the influence of peers on their behavior. It is known that girls talk more easily about sensitive topics such as sex than boys (Dilorio et al., 1999; Fivush et al., 2004). It is then plausible that sexual-specific parenting practices, such as communication about sex, indeed differ for boys and girls, but that general parenting practices are not differentially related to whether or not adolescents are involved in sexual risk behavior. Thus, the role of parental monitoring and communication in adolescents' risky sexual behavior is similar for boys and girls.

Regarding adolescents' level of education, no differential relations were found. Little is known to explain why no difference is found in adolescents' sexual risk behavior in relation to their education level, since limited research has been done about possible explanations. Literature implied that less educated adolescents engage in more sexual risk behavior (Brugman et al, 1995; De Graaf et al., 2012) and communicate less with their parents than adolescents with a higher level of education (Zeijl et al., 2007). Based on this information and the study of Schrijvers et al. (2010) who indicated that parents struggle more with the monitoring of less educated adolescents since they more often have behavior problems, it was assumed that both communication and parental monitoring were of less importance for less educated adolescents than for more highly educated adolescents. However, no difference is found between adolescents with higher or lower levels of education in relation to the role of parental monitoring and communication in adolescents'

sexual risk behavior. In sum, current findings indicate that, irrespective of gender and level of education, higher levels of parental monitoring can reduce the risk of getting involved in sexual risk behavior among youth.

Strengths and Limitations

The present study has several strengths. Instead of focussing on sex-specific communication, this study is the first to investigate the role of how easily adolescents believe they can talk with their parents in general in relation to their sexual risk behavior. Further, a nationally large sample is used, so the findings are representative for the youth population of the Netherlands. However, results should be interpreted with an understanding of the study's limitations.

First, the cross-sectional nature of this study examined the plausibility of the hypothesized relations between communication, monitoring and sexual risk behavior, but it did not test causality. However, it makes sense to use these predictors since Wang et al. (2013) found causal relations between the role of parents and the risk behavior of adolescents. Second, only one question with several sub-questions measured the sexual risk behavior. This created misunderstanding in the interpretation of the question(s). Some respondents gave responses based on their first sexual experience, while others responded based on their last sexual experience. This made the coding of this variable difficult and resulted in a binary variable. This makes the findings of this study less accurate. Future studies should specify in more detail how they measure sexual risk behavior, and perhaps look at a linear scale since not all sexual risk behavior is equally risky. Further, this study only assessed one concept of monitoring. Future studies should include the different aspects involved in monitoring, such as disclosure and parental solicitation when doing research about parental monitoring. Furthermore, no questions were asked about which topics parents and adolescents can easily discuss with each other. It is possible that specific topics may have different relationships with parent-adolescent communication and parental monitoring. For that reason, future research can benefit by asking which topics adolescents do and do not communicate about with their parents. Finally only sexually active participants are used in this study. Further research would be required to explore and compare adolescents who are sexually active with adolescents who are not in order to get better insight in the role parents have on their behavior.

Implications

This study contributes to previous studies about the relation between parental monitoring and parent-adolescent communication and the sexual risk behavior of adolescents. In conclusion, the present study shows that the quality of communication is not related to sexual risk behavior, whereas parental monitoring is significantly related to the sexual risk behavior of adolescents. These relations do not differ for boys and girls or less and more educated adolescents.

Based on these results, implications should be considered. The question arises whether it is necessary for adolescents to have the feeling of being able to talk to their parents if they need them since it does not contribute to the prevention of adolescents sexual risk behavior. The present findings urge a reconsideration about the role of communication between parents and adolescents and recommend a more specific approach when doing research about the role of communication in the sexual risk behavior of adolescents. Future research should take into account not only the quality of communication, but also the quantity of communication and which topics adolescents communicate about with their parents. Since a significant relation is found only between parental monitoring and sexual risk behavior within the present study, current findings seem to suggest that family interventions specifically should focus on parental monitoring in relation to the prevention of adolescents sexual risk behavior. In conclusion, parents do not need to have a strong quality of communication with their children to prevent them from sexual risk behavior; as long as parents know where they “hang out” and with whom, their children have a higher likelihood of remaining safe.

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