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Master thesis

**Let's talk about sex: divorced families, contact with parents and emotional
distress in relation to teenagers' sexual activity**

Emmy Simons, 0601039

Supervisor: Birol Akkuş

“This thesis has been written as a study assignment under the supervision of a Utrecht University teacher. Ethical permission has been granted for this thesis project by the ethics board of the Faculty of Social and Behavioral Sciences, Utrecht University, and the thesis has been assessed by two university teachers. However, the thesis has not undergone a thorough peer-review process so conclusions and findings should be read as such.”

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Abstract

Puberty is a life stage characterized by a massive increase in risky behavior as well as the onset of sexual relationships. While sexual activity in teens may not always be problematic, the increased prevalence of sexually transmitted diseases and unwanted pregnancies during this period shows that a better understanding of the concept is important for preventive and educational implications. The current cross-sectional study examined contact with (step-) parents and emotional distress as contributing factors to the strikingly large differences in sexual intercourse between Dutch teenagers with divorced parents and those with married parents. Regression analyses were performed using data from 6978 high school students from the 2017 Health Behaviour in School-aged Children (HBSC) study. Results showed no effect. However, both a problematic relationship with parents and increased levels of emotional distress were confirmed to be associated with a higher frequency of sexual activity. These effects were particularly strong among girls aged 14 and 15. Interestingly, the (often problematic) relationship with stepparents was not significantly correlated with sexual activity. This study showed that contact with biological parents and emotional distress, especially at ages 14 and 15, should be considered important factors in teen sexual interventions. Future directions are discussed.

Abstract (in Dutch)

De puberteit is een levensfase die wordt gekenmerkt door een enorme toename van risicovol gedrag evenals de start van seksuele relaties. Hoewel seksuele activiteit bij tieners niet altijd problematisch hoeft te zijn, biedt een verhoogde prevalentie van soa's en ongewenste zwangerschappen in deze periode een reden om dit concept beter te begrijpen, in het belang van preventieve en educatieve implicaties. In dit cross-sectionele onderzoek werden 'contact met (stief)ouders' en 'emotionele stress' onderzocht als factoren die bijdragen aan de opvallend grote verschillen in seksuele omgang tussen Nederlandse tieners met gescheiden ouders en tieners met samenwonende ouders. Regressieanalyses werden uitgevoerd op data van 6978 middelbare scholieren uit de Health Behavior in School-aged Children (HBSC) studie uit 2017. Resultaten toonden geen effect. Er werd echter wel bevestigd dat zowel een problematische relatie met ouders als een verhoogde mate van emotionele stress samenhangen met een hogere frequentie van seksuele activiteit. Deze effecten waren vooral sterk bij meisjes van 14 en 15 jaar. Opvallend was dat de (vaak problematische) relatie met stiefouders niet significant correleerde met seksuele activiteit. Deze studie toonde aan dat contact met biologische ouders en emotionele stress, vooral op de leeftijd van 14 en 15, als belangrijke factoren moeten worden beschouwd bij seksuele interventies voor tieners. Verdere implicaties worden besproken.

Introduction

Dutch adolescents who do not live together with both their parents are twice as likely to have sexual intercourse as those who do (Stevens et al., 2018). This is a striking finding from the 2017 Health Behaviour in School-aged Children (HBSC) report, which is an extensive cross-national study of adolescent health and well-being. Engaging in sexual intercourse is a normal step in childhood development, however teenage sex can also have problematic consequences (Graaf et al., 2017). Sexual starters at puberty age are only at the beginning of their cognitive growth spurt (Tieleman, 2015). Their limited knowledge and riskier attitudes towards sex can lead to ill-considered choices. We see this in a spike in inconsistent condom use, sexually transmitted diseases and unwanted pregnancies at this age (Orihuela et al., 2020). Studies have also shown that a remarkable percentage of young people have had negative feelings about having sex too early (Heidmets et al., 2010; Osorio et al., 2012). Given these potential risks of teenage sexual activity, this study aims to further investigate this concept.

Theoretical Substantiation

Puberty is known as a stage where an individual develops from a child to an adult, with their own choices and responsibilities. This period is accompanied by major mental challenges and a huge increase in risk-taking behavior. During this time of great change, communication between teenagers and their parents is highly important (Uytun et al., 2013). However, in the adolescent's attempt to gain independence and to refrain from parental support, this relationship may be put under pressure. Still, especially during this time period it is important that both parties make an effort to maintain the relationship, as it serves as the foundation for the teenager's physical, emotional and social development and well-being (Moreira et al., 2018). Being able to communicate about emotions with parents in a healthy and safe way also appears to be a protective factor against risky behaviors during puberty. Previous research has even shown that a higher-quality relationship between adolescents and their parents, especially between mothers and daughters, may help to protect against early sexual initiation (Nogueira Avelar et al., 2016). Maintaining a healthy parent-child relationship throughout puberty therefore shows to be of great importance. However, in the event of a parental divorce, a teenager's chances of having a healthy parental relationship may come under pressure.

Review of Empirical Studies

It is already well established that parental divorce has a negative impact on children. A large body of research suggests that children from divorced families have lower scores on a range of mental wellbeing indicators (e.g., Lee & McLanahan, 2015). Feelings of loss, anger, sadness, and confusion are common reactions to parental separation. Research has also documented that parental divorce is associated with anxiety, depression and adjustment problems (D'Onofrio & Emery, 2019). The emotional distress associated with a parental divorce may itself pose risks for unsafe sexual behavior, as a number of studies have found that psychological distress, particularly depression, predicts multiple sexual partners, inconsistent condom use and sexually transmitted infections (e.g., Mazzaferro et al., 2006). In addition, teens experiencing psychological distress are more motivated to use sex as a coping mechanism to seek affection, manage negative emotions, boost self-confidence, express anger, and alleviate loneliness (Morrison-Beedy et al., 2017). However, in addition to emotional distress, parental divorce also means that children's safe haven is suddenly split in two, making the parent-child relationship more difficult to establish.

Then when puberty hits, oil may come to the fire. A poor relationship between parent and child is often the result. Their relationship then no longer serves as a protective factor against risky puberal behavior. This is supported by research showing an increased probability of risk behavior in children of divorced parents. A number of studies have shown that children from broken homes are more likely to binge drink, smoke cigarettes, and use substances (Gustavsen et al., 2015; Zeratsion et al., 2014). It has also been shown that children of divorced parents are more likely to have sex than children of married parents, have an earlier age of sexual debut, more frequent sexual activity, an increased risk of pregnancy, and a greater number of sexual partners than children of married parents (Donahue et al., 2010; Zimmer-Gembeck & Helfand, 2008). The HBSC report confirms the higher rates of sexual intercourse among Dutch teens from divorced families (Stevens et al., 2018). Given the potential risks, it is therefore important to investigate the extent to which parental contact and emotional wellbeing influence this relationship highlighted by the 2017 HBSC study.

The Gap

Summarizing the literature, we know that puberty is an emotionally challenging period characterized by risk-taking behavior. At this stage of life, the valuable parent-child relationship comes under pressure. Divorce has a negative impact on the wellbeing of the individual and even more complicates parental communication. This can lead to problems, as emotional

problems and the loss of a healthy parent-child relationship increase the likelihood of a teenager engaging in risky behavior, including unsafe sexual behavior.

The 2017 HBSC report shows that Dutch adolescents from divorced families have almost twice as much sexual intercourse than those from married families, which makes them more vulnerable to risks such as unwanted pregnancy and STIs. The main aim of the current study is to identify the role of emotional distress and contact with (step-)parents in the large differences in sexual intercourse among children of divorced parents compared to those of married parents. A particular area of interest is the role of stepparents. Most of the evidence points to the importance of the motherly role, but we still know extraordinarily little about the role of stepfathers and stepmothers. There is also a paucity of literature linking both the parent-child relationship and mental wellbeing, which makes this study a valuable addition to the existing literature.

The Current Study

As described before, this study attempts to answer the research question: To what extent do emotional distress and the (step-)parent-child relationship contribute to the large differences in sexual intercourse among children of divorced parents compared to those of married parents? First, it is hypothesized that both emotional distress as well as parental contact influence these larger differences. Stepparent contact is also expected to contribute. The absence of emotional and parental problems is also expected to predict the absence of sexual activity in youth. Second, it is hypothesized that emotional distress and the parent-child relationship are correlated. This is also further hypothesized for living in a divided family and the parent-child relationship. Fourth, good communication with parents, especially with the mother is expected to act as a protective factor against risky sexual behavior. This same effect might also apply to stepparents. Thus, a better (step-)parent-child relationship, especially with the (step-)mother, should lead to less frequent rates of sexual intercourse among teenagers. A poor parent-child relationship would predict the opposite. Fifth and finally, emotional distress is expected to correlate with sexual activity.

Research Model

According to the Dutch HBSC report, adolescents who do not live together with both their parents are twice as likely to have sexual intercourse as those who do (Stevens et al., 2018). Living in a household without both parents does not in itself explain this doubled rate of sexual intercourse among teenagers. The parent-child relationship (including those with stepparents)

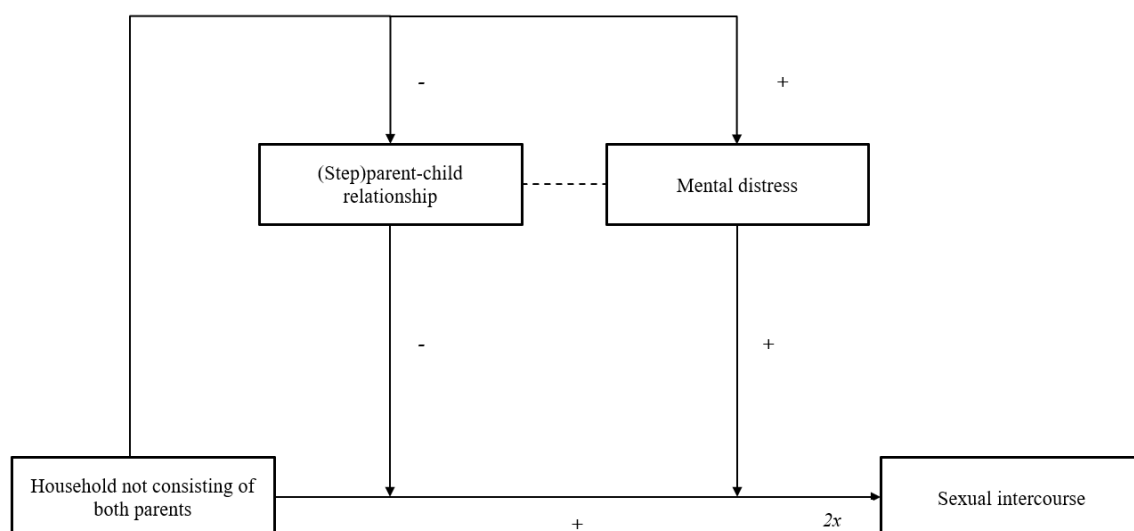
and the mental well-being of teenagers are therefore proposed as moderators, influencing the strength of this large effect.

Divorce is well-known to have a negative impact on the mental well-being of a child. Adding to that, healthy parental communication is seen as the basis for a child's emotional well-being. This is put under pressure when a parental divorce splits the safe haven of children apart. In addition, the relationship between children and their parents becomes even more fragile during puberty. Therefore, a poorer parent-child relationship is often seen in teenagers from divorced families, putting additional stress on the emotional well-being of a child.

Furthermore, puberty is known to cause a huge increase in risky behavior. The parent-child relationship has been shown to protect against this risky behavior. When this relationship is poor, there is no parental protection to mitigate the effects of puberal risk behavior. Finally, it may be that a poorer mental well-being, caused by a parental divorce, leads to more sexual intercourse. Teenagers may increase their sexual risk behavior as a 'nothing to lose principle' or as a search for intimacy and comfort.

Figure 1

Research model



Note. Sexual intercourse in this model means 'have ever had sex'.

Method

Participants and Design

This cross-sectional study used data from 6978 Dutch high school students (48.3% boys and 51.7% girls). The mean age of the sample was 14.69 years (SD = 1.65, range 11.02 - 20.57 years). Participants were attending one of four different levels: preparatory secondary practical vocational education (14.9%), preparatory secondary theoretical vocational education (27.3%), higher general secondary education (25.9%), or pre-university education (31.9%).

The socio-economic status of this population was measured by means of the FAS-scale (Family Affluence Scale). Most teenagers show a moderate level of prosperity within the family. This is illustrated by the fact that almost half of the Dutch teenagers belong to the 'middle' category on the FAS-scale and 41.8% belong to the 'high' category. There is a small group of 9.2% in this sample who have much less access to a reasonable level of affluence.

Procedure

Data for this study was drawn from the Dutch part of the Health Behavior in School-aged Children (HBSC) study. The HBSC-survey takes place every four years among a nationally representative group of students in a large number of countries in Europe, North America and Israel. The digital questionnaires of the fifth edition of the Dutch study were administered in class in the autumn of 2017 by research assistants from the Trimbos Institute. In secondary education, all schools offering regular education at the four average levels were eligible for this study. To ensure a good geographical spread, the distribution of schools in urban and rural areas was taken into account (Stevens et al., 2018). Both parents and students signed an informed consent form prior to the research. The fifth edition of the HBSC study was submitted to the Faculty Ethical Review Committee of the Faculty of Social Sciences of Utrecht University, which approved the conduct of the research. The current study uses the Dutch HBSC data collected in 2017 and has also been accepted by the Ethics Review Board of the Faculty of Social & Behavioral Sciences.

Measurement Instruments

Dependent variables

To identify sexual activity, secondary school students were asked whether they had ever had sexual intercourse and at what age they had their first sexual contact. The students were asked the following question: *'Have you ever had sexual intercourse (some also call it 'doing it', 'going to bed', or 'having sex')?'* Participants could answer 'yes' or 'no' to this question. If

they answered 'yes' to this question, the follow-up question *'How old were you when you had sexual intercourse (sex) for the first time?' was posed.*

Independent variables

To determine family composition, the participants were asked to indicate which people live in the house where they always or most of the time live. If the participants had another home or family, the same question was asked for this second home. All this information was then aggregated into the dichotomous variable 'complete family'. This variable shows that more than three-quarters of the students live with both of their biological parents. About 1 in 10 teenagers live in a double family situation. These young people live with one parent (and possibly a stepparent) and spend their time with the other parent every weekend or more often. A small proportion (15%) of those individuals have a stepmother and/or a stepfather. Children from single-parent families live with one parent and have no or very little contact with the other parent. Just over 6% of the secondary school students live in a single-parent family.

The parental relationship was assessed by asking participants if they can easily talk to either of their parents if they have a problem. Young people with stepparents were asked to rate their contact with them as well. The response options for this question were: *'very easy'*, *'easy'*, *'difficult'*, *'very difficult'*, *'I don't have / I don't see'*. The four variables were computed into dichotomous variables in which the answer options *'very easy'* and *'easy'* were combined, as well as *'difficult'* and *'very difficult'*. The answer option *'I don't have / I don't see'* was coded as a missing value. An overall mean score of the four variables (or less in the case of no stepmother and/or stepfather) was also calculated.

Lastly, emotional distress was identified using a seven-item scale. This scale was based on items from two highly reliable existing scales; the emotional subscale of the Strengths and Difficulties Questionnaire (SDQ), and the Mental Health Inventory-5 (MHI-5) (Heubeck & Neill, 2000; Muris et al., 2003). The first four items of the emotional distress scale, 'Feeling unhappy', 'Being in a bad mood or irritable', 'Feeling nervous', and 'Difficulty falling asleep' over the last six months, could be rated on a scale of one to five. Answer options were: *'almost every day'*, *'more than once a week'*, *'almost every week'*, *'almost every month'*, and *'almost never or never'*. The other three items, 'Being unhappy, depressed, or in tears', 'Having a headache, stomachache, or nausea' and 'Worrying a lot' over the last six months', could be rated on a scale of one to three. Here, answer options were: *'not true'*, *'a little true'*, and *'certainly true'*. To match all seven of the items, the answer options have been recoded. For the first four items, the answer options *'almost every day'* and *'more than once a week'* were

recoded to '3 – often', the options 'almost every week' and 'almost every month' were recoded to '2 – sometimes', and the option 'almost never or never' was recoded to '1 – rarely'. For the last three items, the answer option 'not true' was recoded to '1 – rarely', the option 'a little true' was recoded to '2 – sometimes', and the option 'certainly true' was recoded to '3 – often'. After recoding, all seven of the scale items shared the same answer options: 1 – rarely, 2 – sometimes, and 3 – often, and were then combined into a new emotional distress scale score. Reliability analysis of this scale showed a highly acceptable internal consistency as evidenced by a Cronbach's alphas of .79. Individual scores on this scale could range from 7-21. The scale was then further constructed into a dichotomous variable in which a score of ≥ 14 indicates abnormal levels of emotional distress. This cutoff score was determined in accordance with the existing cutoff score of the SDQ-scale used in the 2017 HBSC study.

Data Analyses

In order to answer the research questions analyses were conducted using IBM SPSS Statistics for Windows, version 27. First, descriptive analyses were performed. Second, correlation analyses were carried out between the variables. Subsequently, a binary regression analysis was performed controlling for gender, age, and educational level, to examine moderation effects. To further zoom in on effects, a binary logistic regression was performed filtering for age and gender.

Results

Before addressing the main research questions of the present study, a number of general remarks are in order. To start, in line with the HBSC'17 report, 18.4% of adolescents in this sample who do not live with both their biological parents reported to be sexually active, compared to 9.7% of adolescents who do live with both their birthparents. Second, descriptive statistics and correlation analysis showed significant gender differences for both the dependent variable and nearly all independent variables. More specifically, boys showed more sexual activity and also showed a slightly lower age of onset of sexual activity compared to girls. Furthermore, girls showed a higher level of mental distress and more often had a difficult relationship with one or more (step)parents compared to boys (see Table 1). Third, significant age correlations emerged for most variables (see Table 2). Spearman's Rho correlation analyses showed a significant positive correlation for emotional distress [$r = .046, p < .01$] and for the total score on contact with parents [$r = .121, p < .01$]. This holds that the older the adolescent, the more likely the emotional and parental problems. Significant age correlations were also found for contact with the father [$r = .112, p < .01$] and contact with the mother [$r = .096, p < .01$]. No significant correlations were found between the dependent variable sexual activity, and contact with stepparents. Socioeconomic status measured as the FAS-score neither showed a significant correlation with the dependent variable and is therefore not considered a confounder. Lastly, logically but noteworthy, age does significantly correlate with the dependent variable. It shows a moderate positive correlation of [$r = .325, p < .01$].

Table 1

Descriptive statistics (valid percentages, mean and standard deviations, and gender differences).

	Total group	Boys	Girls
% had sex ever	11.7	13.3	10.2
Mean age of first sexual activity	14.58 ^a	14.36 ^b	14.84 ^c
% not living with both parents	23.2	22.5	24.0
% abnormal mental distress	12.7	6.9	18.2
% difficult relationship with parents			
With father	18.4	12.3	22.2
With stepfather	43.1	36.8	50.3
With mother	10.2	8.4	11.8
With stepmother	46.6	41.4	52.6

Note. Standard deviations for age of first sexual activity are ^a 1.53, ^b 1.66 and ^c 1.30.

Table 2*Spearman's Rho correlations between all variables of the current study (N = 6978).*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	1.000												
2. Age	.000	1.000											
3. Educational level	.014	.129**	1.000										
4. FAS	-.050**	-.043**	.195**	1.000									
5. Living with both biological parents	-.018	-.045**	.145**	.141**	1.000								
6. Had sex ever	-.049**	.325**	-.035**	-.007	-.111**	1.000							
7. Age of first sexual activity	.134**	.675**	.416**	.048	.019	.	1.000						
8. Emotional distress	.169**	.046**	-.023	-.055**	-.079**	.099**	-.160**	1.000					
9. Contact with parents	.110**	.121**	-.044**	-.102**	-.259**	.130**	-.020	.265**	1.000				
10. Contact with father	.137**	.111**	-.013	-.109**	-.143**	.100**	.009	.246**	.847**	1.000			
11. Contact with stepfather	.136**	.023	.032	-.046	-.043	.031	.007	.186**	.798**	-.253**	1.000		
12. Contact with mother	.056**	.096**	-.016	-.042**	-.075**	.116**	-.079*	.238**	.653**	.437**	.375**	1.000	
13. Contact with stepmother	.112**	.025	.076*	-.082*	-.067*	.001	.098	.143**	.822**	.477**	.510**	.245**	1.000

Note. * $p < .05$; ** $p < .01$. For variables nr. 5 and 6, baseline = no. For variables nr. 8 to 13, baseline = non-problematic.

Moderation of The Studied Relationship

What is the role of emotional distress and (step-)parental contact in the large differences in sexual activity between children of divorced parents compared to those of married parents? To answer this question, a binary logistic regression analysis was conducted with these two variables included as moderators. Results revealed that neither emotional distress nor (step)parental contact had a moderating effect on the relationship between family situation and sexual intercourse (see Table 3 and 4).

The regression analysis did show, as hypothesized, that good contact with parents serves as a 'protective factor' against sexual activity. Good contact with parents leads to 1.8 times less reports of sexual activity [$\beta = .614$, $\text{Exp}(B) = 1.848$, $p = < 0.05$] (see Table 3). Also as hypothesized, this effect was larger for maternal contact [$\beta = .547$, $p = < 0.01$, $\text{Exp}(B) = 1.727$, Nagelkerke $R^2 = .269$], than for paternal contact [$\beta = .415$, $p = < 0.05$, $\text{Exp}(B) = 1.515$, Nagelkerke $R^2 = .266$]. The effect has not been tested for stepparents, as no significant correlation exist for those variables and sexual activity. Furthermore, analyses showed that a higher level of emotional distress is associated with more 2.3 times more reports of sexual activity [$\beta = .830$, $\text{Exp}(B) = 2.294$, $p = < 0.01$] (see Table 4). Lastly, results proved that emotional distress and the parent-child relationship are correlated [$r = -.265$, $p < .01$]. and that the parent-child relation is correlated with living with both biological parents [$r = -.259$, $p < .01$].

Age and Gender Specific Results

As sexual activity is highly correlated with age and gender, additional analyses were conducted. Again, no moderating effect was found, however binary logistic regression analyses did show large effects at the ages of 14 and 15 years. Contact with parents had a large effect on the sexual activity of girls both at the age of 14 [$\beta = 2.436$, $p = < 0.01$, $\text{Exp}(B) = 11.422$, Nagelkerke $R^2 = .128$] and at age 15 [$\beta = 1.849$, $p = < 0.01$, $\text{Exp}(B) = 6.353$ $R^2 = .130$]. Emotional distress showed a significant effect on the sexual activity for boys at 15 years [$\beta = 1.587$, $p = < 0.01$, $\text{Exp}(B) = 4.889$, Nagelkerke $R^2 = .166$]. It also showed a significant effect for girls at the age of 14 [$\beta = 1.536$, $p = < 0.01$, $\text{Exp}(B) = 4.647$, Nagelkerke $R^2 = .115$]. These age and gender specific results suggest 14 and 15 are crucial ages when it comes the role of emotional distress and parental contact in sexual activity.

Table 3

Binary regression analysis of contact with parents as a predictor and moderator of sexual activity

	Sexual activity		
	β	<i>Exp (B)</i>	<i>p</i>
Step 1:			
Gender	-.375	.687	.00**
Age	.793	2.210	.00**
Educational level	-.403	.669	.00**
Step 2:			
Contact with parents	.614	1.848	.00**
Step 3:			
Living with both biological parents	-.556	.573	.00**
Contactparents*Completefamily	.265	1.303	.30

Note. * $p < .05$; ** $p < .0$. Nagelkerke $R^2 = .267$. Df = 6, $p < 0.01$

Table 4

Binary regression analysis of emotional distress as a predictor and moderator of sexual activity

	Sexual activity		
	β	<i>Exp (B)</i>	<i>p</i>
Step 1:			
Gender	-.437	.646	.00**
Age	.807	2.241	.00**
Educational level	-.410	.664	.00**
Step 2:			
Emotional distress	.830	2.294	.00**
Step 3:			
Living with both biological parents	-.526	.591	.00**
Emdis*Completefamily	-.052	.949	.81

Note. * $p < .05$; ** $p < .0$. Nagelkerke $R^2 = .271$. Df = 6, $p < 0.01$

Discussion (1536 words)

Teens who do not live with both of their biological parents in one household, are twice as likely to be sexually active. The present study aimed to investigate if (and how) this may be related to their relationships with their parents, both biological and stepparents, and their mental wellbeing. Rejecting the first hypothesis, no interaction effect for emotional distress and contact with parents was found for this relation. Nevertheless, more in-dept analyses showed that contact with biological parents has a particularly strong effect on girls aged 14 and 15. This also applies to emotional distress for boys at age 15 and girls at the age of 14, making this age an important target for interventions. These and additional findings, as well as their implications, are discussed in the following paragraphs.

Emotional distress and parental contact in general

Consistent with previous research, correlation analyzes on the 2017 HBSC data showed that as teens get older, they experience more emotional and parental problems. This is linked to the major hormonal and social changes during puberty, and the increase in risk factors which make young people less emotionally stable and self-confident, and cause more stress (Looze et al., 2014; WHO, 2021). In this phase of life, the need for more autonomy and independence arises, as a result of which young people distance themselves from their parents (Swanson et al., 2010). As hypothesized by hypothesis 2, parental contact and emotional distress were negatively correlated. This means that emotional distress is related to a more problematic relationship with (step)parents. This is in line with the theory that many adolescents in puberty criticize their parents as a result of their increased cognitive abilities, which creates conflict in the attempt to distance from them (Tieleman, 2015). Furthermore, with regard to gender, girls showed more psychological complaints and more often had a difficult relationship with one or more (step)parents than boys. However, looking at the bigger picture, girls are not necessarily worse off than boys. These differences are very much depended on the subject studied. According to the 2017 HBSC report, girls do indeed report more emotional problems, less support from their fathers and less exercise than boys, but they for example also show fewer behavioral problems and eat healthier than boys (Stevens et al., 2018). Finally, in line with the third hypothesis, not living with both parents is correlated with a more problematic parent-child relationship. This is in line with the theory of the splitting of the safe home port that was put forward earlier. To sum this up, as teens get older, they experience more emotional and parental problems. The relation with parents is correlated with emotional distress as well as with the familial situation. Further, girls experience more emotional and parental problems than boys.

Emotional distress and parental contact related to sexual activity

In line with the fourth hypothesis, a good relation with parents in general was confirmed to serve as a ‘protective factor’ against sexual activity. Also as hypothesized, this effect was greater for maternal contact as for paternal contact. Several theories have already explained that good contact with parents, especially with the mother, forms the basis for the physical, emotional and social development and well-being of teenagers, and protects them against risky behavior (e.g., Moreira et al., 2017; Nogueira Avelar et al., 2016). The present research confirms these theories. Maintaining the parent-child relationship during puberty is therefore highly conducive to healthy sexual development. Further, as far as we know, this is the first study that investigated the role of stepparents in youth’s sexual activity. The quality of the relationship with stepparents does not seem to play a significant role in youth’s sexual activity, even though almost half of the participants rated their relationship with their stepparent(s) as problematic. This suggests that the quality of the relationship with stepparents (bad or good), does not significantly affect a teen’s sexual activity. According to Bowlby’s attachment-theory, the quality of early parent–child relationships is likely to shape individuals’ expectations of attachment security in later intimate relationships (Bowlby, 1977). A large proportion of stepparents enter a teen's life later on, which may explain why the relationship with them no longer can influence sexual activity. In line with the fifth and last hypothesis, the study shows that higher levels of emotional distress are associated with more sexual activity as well as with an earlier age of onset. This is also in line with previous studies explaining that sexual activity is sometimes used in teens as a coping or following a ‘nothing to lose principle’ (Morrison-Beedy et al., 2017).

Summing this up, a good relation with the biological parents, especially with the mother, serves as a ‘protective factor’ against sexual activity and its risks in teenagers. The (often problematic) relationship with stepparents is not significantly associated with sexual activity in teenagers. Further, emotional distress is related to the reports of more and earlier sexual activity.

Strengths and limitations

The strengths of the present study are that it examines factors contributing to sexual activity based on cross-sectional data from a large, representative sample of adolescents in the Netherlands. In addition, advanced analyzes were performed by zooming in on gender and age. To the best of our knowledge, this study is unique in the Netherlands. Also, only a handful of international studies have looked into the effects of step-parental contact on teenager's sexual

activity. This study therefore provides new, relevant and detailed information that is useful for interventions.

Despite these strengths, a few limitations are in order. To start, in the absence of an existing scale for emotional distress, a new scale for this variable was constructed based on several existing items of the HBSC questionnaire. Besides that, the potential confounder socio-economic status was measured by the FAS-score, that asks about concrete possessions (such as number of cars, computers), characteristics of the house (own bedroom, number of bathrooms and having a dishwasher) and the number of times the family went on holiday in the past year instead of the more commonly applied dimensions of socio-economic status, which are income or wealth, education, and occupation (Adler et al., 1994). Second, this study only used adolescent self-reports, which may possibly have led to biases. However, other approaches such as the reports from parents would not be feasible for the variables used in this study. Third, this study shows a cross-sectional design. The international HBSC survey is repeated every four years to measure trends in youth. However, the survey is not repeated with the same participants. Therefore, no temporal relationships between sexual activity and determinants could be established, as both were examined at the same time. Fourth and finally, it is important to note that the underlying motivation for sexual activity is complex and varies from person to person. It is not suggested that parental contact, family situation and emotional stress are the only mechanisms predicting sexual activity in teens. It is very likely that other factors such as peers, culture and personality are also involved in this process. It is therefore important that future research examines the relative importance of a wide range of processes that can predict individual differences in sexual activity.

Conclusions and implications

Compared to their European peers, Dutch youths are on average healthy and very happy. Since 2001, they have been in the top 3 in terms of well-being. In addition, they have been reporting high levels of social support from both peers and their parents (Stevens et al., 2018). Knowing this, interventions may seem of less high importance. However, this does not apply to all young people in the Netherlands. As in most countries in Europe, there is social inequality in health and happiness in the Netherlands. By studying for all themes to what extent there are differences based on age, sex, education level, etc. risk groups are accurately mapped. The current study in its part also contributed to the identification of risk groups. Scientific implications of this study are that girls aged 14 and 15 that have a problematic relationship with parents and/or show high levels of mental distress are at a high risk for engaging in potentially

risky sexual activity. Furthermore, this research confirmed that with regard to parental contact, the role of the mother is highly important. Good paternal contact also appeared to be a protective factor against risky sexual activity. Stepparents play no significant role.

While sexual activity in teens may not always be problematic, increased prevalence of sexually transmitted diseases and unwanted pregnancies in this phase, still makes interventions of high importance, to ensure that teens make sensible, well-considered decisions regarding sexual intercourse. Example interventions would aim to provide comprehensive sexual education to teenagers, focusing both on the ‘fun’ part, as well as on the risks and precautions of sexual intercourse. Interventions for mental health promotion and prevention should focus on strengthening emotion regulation, reinforcing alternatives to risky behaviors, building resilience to face difficult situations and adversity, and promoting supportive social environments and social networks (WHO, 2021). These types of programs require a low-threshold, multi-level approach with different delivery platforms – e.g. social media, health or social care institutions, high schools or the community – and different strategies to reach adolescents, especially those that are most vulnerable. The current study identified adolescents aged 14 and 15 as a vulnerable risk group for risky sexual activity. The proposed exemplar interventions should therefore target this group, and focus on emotional well-being and parental contact.

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Appendix 1

The large part of this research includes factors that focus on psychology and pedagogics. Divorce and the splitting up of the home basis has a large effect on the mental wellbeing. Different psychological principles are involved here such as coping, activating cognitive schemas (about what love means to you), dealing with negative emotions and anxiety, seeking comfort, and accepting the divorce. The cognitive development during puberty can also be viewed through the loop of psychology. In addition, the parent-child relationship is one that can be viewed from a pedagogical perspective. Parental communication has been proven to be of great importance, as it is the basis of good psychological health in children. Parenting styles with their corresponding levels of warmth and responsiveness explain in what way children become attached to their parents.

Thus, psychological and pedagogical perspectives both are sufficient to explain the different parts of the theory. However, there is a large overarching perspective that is important to understand the context of the research model: the socio-ecological perspective. In short, the current study seeks to find how not having your parents live together in one home, influences individual development. It should however be noted that every individual is unique, and therefore also responds differently to parental divorce. According to the famous socio-ecological model of Bronfenbrenner, the development of a child is influenced by the (quality of the) environments in which the child lives or participates and the extent and nature of the interactions between these environments (Bronfenbrenner, 1992). Therefore, several environmental influences, have different effects on the divorce impact. A worsened parent-child relationship, ongoing discord between former spouses, loss of emotional support, economic hardship, and an increase in other negative life events, such as moving, are all factors that reinforce the negative impact of parental divorce on children. Nevertheless, protective factors for children also exist, and include active coping skills, support from family and friends, and access to therapeutic interventions (Amato, 2000). All these factors influence individual development from different environmental levels.

To conclude, psychological and pedagogical perspectives can both explain the causes and effects of emotional wellbeing and parent-child interaction on their own. However, it is also important to zoom out and look at the larger social-ecological perspective, to gain further understanding of the dynamic interrelations among various personal and environmental factors.

Appendix 2

Utrecht, 2023

This letter constitutes formal confirmation of the fact that the data from the Utrecht University Master Youth Studies 2022-2023 have been made available to Emmy Simons of Utrecht University.

These data will not be made available to others, and the data may be used only for analysis and reporting on topics for the thesis, about which agreement has been reached with Birol Akkuş. Emmy Simons will receive access to the data from the dataset in order to answer the following research questions within the framework of the thesis:

Research question:

Which factors contribute to the large differences in sexual intercourse for children of divorced parents compared to those with married parents?

The following variables will be used:

Dependent variable: sexual activity

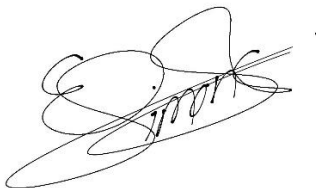
Independent variables: parent-child relationship, wellbeing

Other variables: family situation, gender, age, family welfare, and educational level.

No report based on the data from the project entitled HBSC 2017 will be made public, unless permission has been obtained in advance from the Project Coordinator for the HBSC 2017.

After the expiration of this contract, dated June 30th 2023 Emmy Simons shall delete the HBSC 2017 data.

Dates and signature: 01/27/2023



Name of student: Emmy Simons

Name of Project Coordinator:

ETHICAL APPROVAL

Study: Early sexual initiation in youths with divorced parents

Principal investigator: E.M.C. Simons

Supervisor: Birol Akkus

The study is approved by the Ethical Review Board of the Faculty of Social and Behavioural Sciences of Utrecht University. The approval is based on the documents sent by the researchers as requested in the form of the Ethics committee and filed under number 22-2250. The approval is valid through 30 June 2023. The approval of the Ethical Review Board concerns ethical aspects, as well as data management and privacy issues (including the GDPR). It should be noticed that any changes in the research design oblige a renewed review by the Ethical Review Board.

Yours sincerely,

Peter van der Heijden, Ph.D.
Chair

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