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**“Keep an Eye on That Teen: The Influence of Parental Monitoring and Impulsivity on  
Dutch Adolescents’ Sexual Debut”**

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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 Behavioural 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.

### Abstract

During adolescence, adolescents start exploring sexual behavior with others, which has implications for sexual health. An early sexual debut can be risky, because it is related to several negative outcomes, such as unwanted pregnancies, STIs and depression. Since sexual development is influenced by parents, the current study aims to answer the question how parental monitoring is related to Dutch adolescents' age at their sexual debut and whether impulsivity mediates this relationship. Data from a Dutch longitudinal cohort study 'The Tracking Adolescents' Individual Lives Survey' (TRAILS) were used, which consists of self-report questionnaires. To examine the relations between parental monitoring, impulsivity and age at sexual debut, three linear regression analyses were performed in a sample of 595 Dutch adolescents, aged between 11 and 18 in which 59.9% were girls, and 40.1% were boys. Additionally, a mediation analysis was conducted to investigate the indirect effect of parental monitoring on age of sexual debut through impulsivity. Results showed that higher levels of parental monitoring and a later sexual debut were positively related, as expected. No relationships were found between parental monitoring and impulsivity, nor between impulsivity and age at sexual debut. Moreover, impulsivity did not explain the relation between parental monitoring and age at sexual debut. This could be due to the fixedness of the trait. Further research could focus more specifically on norms and attitudes on sexual behavior that adolescents learn from their parents.

*Key words:* Sexual Debut, Sexual Initiation, Parental Monitoring, Parental Control, Impulsivity, Adolescence, Sexual Behavior

## Introduction

Although sexual development is a lifelong process that already starts during childhood, adolescence is a particularly salient developmental period in which sexuality is explored and young people start engaging in sexual relationships with others (Oldenhof et al., 2023; Van de Bongardt et al., 2015). A Dutch research found that adolescents start engaging in sexual activity at a later age than previous years (Oldenhof et al., 2023). Based on their findings, in 2023, half of the adolescents in their study reported having engaged in sexual activity at the age of 18.7, whereas in 2012, half of the adolescents reported having had sex at the age of 17.0. This could be viewed as a positive development since an early sexual debut has been found to be related to risky behaviors, such as unsafe sex, substance use and antisocial behavior (Kastbom et al., 2014). Moreover, early sexual initiation has been related to several physical and mental health problems, such as STIs, unwanted pregnancies and depression (Shrestha et al., 2016).

As stated by Bronfenbrenner and Ceci (1994), sexual behavior does not occur in a social vacuum. This means that the social context, including parents and peers, influence adolescents' development of romantic relationships and sexuality (Kotchick et al., 2001; Smetana et al., 2006). During adolescence, more time is spent outside of direct supervision of parents as adolescents spend much time in high school, with their peers, and on other activities in which their parents are not involved (Lionetti et al., 2019). Even though adolescence is characterized by the increasing importance of peers, parents still play an important role in this developmental stage (Cui et al., 2019; Madsen, 2008). In fact, parents can be an important protective factor for adolescents' risky behaviors, such as engaging in sexual activity at an early age (Madsen, 2008; Sieverding et al., 2005). Especially parental monitoring, which refers to actively knowing their children's whereabouts, can be seen as a factor that is related to later sexual debuts in adolescents (Sieverding et al., 2005).

Some research has been conducted on this relation between parental monitoring and adolescents' sexual debut, but little is known about underlying factors. For example, impulsivity could be an important aspect to study in this relation, since impulsivity has been found to be positively related to risky sexual behaviors, including an early sexual debut (Epstein et al., 2014; Khurana et al., 2012). On the other hand, parental monitoring could possibly be a protective factor for impulsivity, by improving self-control and impulse control (Pelhalm et al., 2024). Therefore, the research question that will be answered in this study is: "To what extent does parental monitoring relate to sexual debut in Dutch adolescents, and to what extent does impulsivity explain this relation?"

For public health views, it is important to investigate adolescents' sexual behavior as it has implications for sexual health. Moreover, sexual experimentation early in life lays the groundwork of personal preferences and boundaries, which result in the way in which adolescents shape their romantic relationships and sexual behaviors later in life (De Graaf & Rademakers, 2006; Joyner & Kampa, 2006). This indicates that sexual experimentation has consequences that are persistent even in adulthood, making it an important topic to investigate. By researching possible explanations for the shift towards a later sexual debut in The Netherlands, more knowledge will be provided for health instances as well as parents and families in which a healthy sexual development can be stimulated.

## **Theoretical Framework**

### **Sexual Debut**

The current study investigates adolescents' sexual debut. Sexual debut refers to the first time that people engage in sexual intercourse and is also referred to as sexual initiation or sexual onset. In western societies, an early sexual debut is typically defined as having sex for the first time before the age of 16 (Shrestha et al., 2016). One's sexual debut can be viewed as something positive, because when feeling ready to engage in sexual activities and doing so, it

can be seen as a transitional step towards maturity (Masters et al., 2008; Ott et al., 2006). Moreover, the development of romantic relationships and intuition of sexual behaviors are normative and salient developmental tasks during adolescence (Van de Bongardt et al., 2015). Sexual experimentation early in life establishes the foundation of personal preferences and boundaries, which result in more mature romantic relationships and sexual behaviors later in life (De Graaf & Rademakers, 2006; Joyner & Kampa, 2006). In contrast to previous research, Shrestha et al. (2016) found that participants with an early sexual debut were able to refuse sex and negotiate condom use with their sexual partners, suggesting an early sexual debut does not have to be considered risky behavior at all times. This is in line with the shift towards a more sex positive approach. Where research on sexuality used to be focused on the risks related to sexual behavior, a shift has occurred during the last decade, in which engagement in sexual behavior is seen as a normative aspect of adolescent development (Van de Bongardt et al., 2015). While acknowledging this more positive approach, sexual activity could still have negative influences on adolescents' health, especially on younger adolescents.

Several studies found that having sex at an earlier age was related to worse health and well-being outcomes in adolescents (Osorio et al., 2017). For example, an early sexual debut is proven to be related to engagement in unsafe sex, and the prevalence of STIs and pregnancies (Shrestha et al., 2016). Moreover, studies suggest that adolescents that have sex at an earlier age are more likely to experience depressive symptoms (Spriggs & Halpern, 2008), behavior problems (Udell et al., 2010) and regretting the age of the initiation of their sexual debut (Cotton et al., 2004). A possible explanation for this is that due to the lack of maturity, it is more difficult to make autonomous decisions (Casey et al., 2008; Patton & Viner, 2007).

## **Parental Monitoring**

In examining the theoretical framework for parental monitoring, it is crucial to understand how parents' awareness and involvement in their children's lives shape behavioral outcomes. Parental monitoring generally refers to accurately knowing the adolescents' whereabouts and activities outside the home (Sieverding et al., 2005). It can be used as an umbrella term, covering a wider variety of parenting practices (Lionetti et al., 2019). For instance, asking their child to reveal information, or relying on information from others such as teachers or neighbors are ways in which parents solicit information about their children and their whereabouts (Stattin & Kerr, 2000; Waizenhofer et al., 2004). It is also possible that parents exercise control over their children, requiring them to disclose information about their leisure activities, friendships and locations (Stattin & Kerr, 2000). The idea behind parental monitoring is that parents who are well-informed about their children's lives and potential issues can actively guide and comfort their children when needed (Keijsers, 2015).

During adolescence, parents have to engage more actively in parental monitoring when they want to know about their children's lives and whereabouts, since adolescents have more secrets for their parents, compared to during childhood (Petronio, 2002). Adolescents strive for more privacy and might feel the need to share less with their parents to gain and preserve their autonomy (Branje et al., 2012; Frijns et al., 2010). This could result in disagreements between children and parents in which adolescents might not want to share everything with their parents that they want to know. Therefore, parental monitoring can be seen as a dyadic process, in which adolescents both shape and react to their parents' monitoring behavior (Pelhalm et al., 2024).

## **The Association between Parental Monitoring and Sexual Debut**

To understand parental monitoring in relation to the timing of sexual debut, it is essential to consider the role of parents in influencing their children's behaviors and decisions.

Specifically, it is important to realize how parental monitoring can influence the age at which adolescents engage in sexual activity. In this regard, parental monitoring has been considered as one of the most crucial protective factors against adolescent problem behaviors (Lionetti et al., 2019). Specifically, parental monitoring reduces adolescents' opportunity to engage in risk behaviors, such as an early sexual debut (Longmore et al., 2009; Sieverding et al., 2015). By restricting certain behaviors, adolescents are less likely to be in situations in which they could have sexual intercourse, which could be related to first engaging in sexual intercourse at a later age (Madsen, 2008; Sieverding et al., 2005). On the other hand, adolescents who spend more time outside their parents' supervision and experience little parental monitoring, are provided with more opportunities to experiment with risky behaviors, such as early sexual behavior (Keijsers, 2015). This idea derives from the criminological theory of opportunity, which states that if one has the opportunity to perform certain delinquent behavior, it is more likely to happen compared to when there is no opportunity to do so (Cohen & Felson, 2010).

The more sex positive approach would state that parental monitoring reflects certain norms about relationships and dating (Madsen, 2008). This could shape the way adolescents think about (romantic) relationships and sex (Madsen, 2008). When parents are more hesitant towards sex, this attitude can be adopted by their children, resulting in a later sexual debut (O'Donnell et al., 2005). Parents who are more sex positive and talk about how to engage safely in sexual behavior, rather than abstaining from it, might set different norms for their children, which could result in an earlier sexual debut. This does not mean it is riskier, but it shows how different parenting approaches could influence adolescent sexual behavior.

### **Impulsivity**

Building on the established relationship between parental monitoring and sexual debut, impulsivity is considered a variable that is related to both parental monitoring and sexual debut and could be a mediator in this relation. Impulsivity is especially a relevant

concept in adolescence, since this is a developmental stage characterized by risky decision-making and impulsive behavior (Steinberg, 2005). This is due to the gap between emotional and cognitive development and adolescent behavior, meaning that adolescents do not always have the cognitive capacity to think of the consequences before engaging in certain (risky) behaviors (Steinberg, 2005). This gap results in higher levels of sensation seeking, in which adolescents strive for a need to engage in new and complex situations and experiences, and are willing to take risks in order to fulfill this need (Khurana et al., 2012). Levels of the personality trait impulsivity also seem to have an influence on this, as the consequences are often not considered thoroughly before engaging in risky behavior (Khurana et al., 2012). Impulsivity specifically refers to the degree to which one has difficulties in controlling their impulses and in which one acts without considering the consequences of their actions for themselves and others (Stahl et al., 2014). In literature, the concept is also referred to as a lack of impulse control or self-control (Khurana et al., 2012). Although impulsivity is a personality trait and personality traits seem to be quite fixed, research has shown that impulsivity is a trait that can change throughout the lifespan (Quinn & Harden, 2012).

### **The Association between Parental Monitoring and Impulsivity**

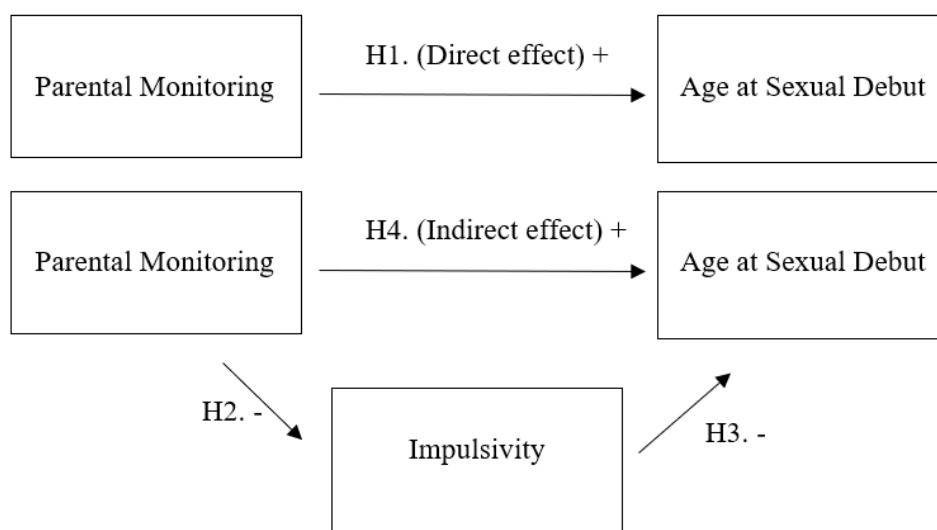
A relevant factor that can be related to changes in impulsivity levels is parental monitoring, although not much research has been conducted on this relation. Nevertheless, other parenting behaviors have been investigated in relation to impulsivity and impulse control, suggesting parents can have an influence on adolescent impulsive behavior and decision making (Pelhalm et al., 2024). For example, parental monitoring can increase children's behavioral control by setting rules and supervising activities. When these rules are broken and parents find out through monitoring, parents can punish their child for performing this misbehavior, which positively influences their child's capacity for self-control (Pelhalm et al., 2024).



Parental monitoring can also be viewed as a form of social control. Hirschi (1969) proposed the Social Control Theory, which is usually used in the field of criminology, explaining delinquent behavior. It states that strong bonds with societal institutions, such as the family lead to higher levels of self-control. Since parental monitoring is related to a strong bond between parents and children due to the improved communication, it would be expected that higher levels of parental monitoring could improve self-control levels. Wills and colleagues (2004) examined the relation between families that are characterized by affection and communication and self-control and found a positive relation, indicating these children had higher levels of self-control compared to those who do not have families characterized by affection and communication. Moreover, children with these affectionate and communicating families were found to have higher levels of behavioral control (Li et al., 2015).

### **The Association between Impulsivity and Sexual Debut**

Something that has been studied is the relation between impulsivity and sexual debut. Research shows that higher levels of impulsivity relate to an earlier sexual debut compared to those who have lower levels of impulsivity (Khurana et al., 2012). Moreover, adolescents who have a tendency to get involved in sensation-seeking are more likely to engage in risky behaviors, including an early sexual debut (Epstein et al., 2014). This could be explained by the Social Cognitive Theory which suggests that a person's capacity to self-regulate influences their behavior (Magnusson et al., 2019). Based on this theory, it could be stated that those with higher levels of impulsivity have more difficulties in regulating their behavior and think less of the consequences, resulting in engaging more quickly in certain risky behaviors such as having sexual intercourse for the first time.

**Figure 1.***Conceptual Model***Hypotheses**

Based on this theoretical framework, it will be hypothesized that parental monitoring is positively related to the age at which their adolescent children have their sexual debut, meaning that adolescents who experience much parental monitoring have their sexual debut at a later age (H1). Additionally, parental monitoring will be negatively related to the levels of impulsivity in their adolescent children (H2). In turn, these lower levels of impulsivity will be negatively related to adolescent's sexual debut (H3). It will be expected that the relation between parental monitoring and sexual debut is partly mediated by impulsivity (H4). The conceptual model is portrayed in Figure 1.

**Methods****Design & Participants**

Results from the current study are based on the sample and data from The Tracking Adolescents' Individual Lives Survey (TRAILS). This is a large multidisciplinary longitudinal cohort study that investigates psychological, social and physical factors that

influence adolescent development ( $N = 2230$ ). Participants were recruited from primary schools in five municipalities in the north of the Netherlands. In total, 135 schools received a letter with detailed information about the study, goals and practical procedures. Of these schools, 122 schools agreed to participate in the TRAILS study. These schools received an introduction letter about the research and brochures to distribute to parents or guardians. When parents agreed to participate in the TRAILS study, an interview was scheduled in which they had to sign an informed consent form (de Winter et al., 2005). Since all children were minors, parents had to give consent for them. Data collection started in 2001 when participating children were between 10 and 12 years old. After 2 to 3 years, follow-up measures were assessed, until the participants were at least 25 years old. Data were collected at schools, in which the adolescents had to fill out a questionnaire, while one or more TRAILS supervisors was/were present in the classroom.

Although TRAILS uses a longitudinal study design, only data collected in wave 3 were used for the current study since not all variables were asked in each wave. In this wave 81.4% of baseline participants took part in the data collection ( $N = 1815$ ). Wave 3 took place between 2005 and 2007, 3.5 to 7.2 years after wave 1 (mean number of months 62.1;  $SD = 7.87$ ; range 42-87) and 0.9 to 4.4 years after wave 2 (mean number of months 32.7;  $SD = 7.07$ ; range 11-53). Participants were excluded when they missed information on the variables age at their sexual debut, impulsivity and/or parental monitoring. Additionally, the sample only included the participants that had experienced sexual intercourse, because participants who had not had their sexual debut yet differed in age and it was unknown at what age they would have their sexual debut. Therefore, the final sample used in this study consisted of 595 participants. Most participants were female (59.9%,  $N = 356$ ), and 239 were male (40.1%) The age of participants ranged from 14 to 18 years old ( $M = 15.94$ ,  $SD = 0.81$ ).

## **Procedure**

TRAILS collected their data in numerous ways, including interviews with parents, physical examinations and surveys for parents, teachers and adolescents. For the current study, all variables that were used were measured through self-report surveys by the adolescents. These self-report surveys were conducted in classrooms, with a TRAILS-supervisor present. The surveys included multiple choice questions in which participants had to tick the box that was most applicable for them. Data were processed anonymously to ensure participants' privacy. Ethical approval for TRAILS was obtained from the Dutch national ethics committee Central Committee on Research Involving Human Subjects (#NL38237.042.11). Written informed consent was obtained from both adolescents (all waves) and their parents (wave 1, 2 and 3) prior to each assessment wave.

TRAILS data is not openly available and to use it, ethical approval from the ethical committee and TRAILS supervisor has to be given. Therefore, a data request form must be submitted, describing the research question(s), relevance and an analytical plan. To ensure participant's privacy and safety, only variables necessary for this research were obtained. The dataset that was used for this research was handled anonymously, since it was not possible to trace answers back to participants. Data were saved in a secured environment provided by Utrecht University and was not distributed to other parties.

## **Measurements**

### ***Sexual Debut***

Sexual debut was measured with the question: "How old were you when you first had sexual intercourse?" The questionnaire elaborated on this item that some people refer to sexual intercourse as 'doing it' 'sleep with' or 'have sex'. Response options were '11 years or younger', '12', '13', '14', '15' or '16 years old' or 'I have never had sexual intercourse'. Most participants reported that they never had sexual intercourse (63,7%,  $N = 1045$ ). To

make conducting analyses possible, a scale variable was created, ranging from 11 years (or younger) to 16 years old. Therefore, those who did not have had sexual intercourse could not be included in the statistical analyses. Some participants were 17 or 18 years old, but options '17' and '18' were not in the survey, which could mean that they might not have reported their age at their sexual debut correctly.

### ***Parental Monitoring***

Parental monitoring was measured with 10 items, developed by TRAILS. Questions were divided into two different categories: paternal control and maternal control. This means that each question was asked two times but specified for 'father' or 'mother'. Both were measured with 5 items with response options 1 (never), 2 (almost never), 3 (sometimes), 4 (often), and 5 ((almost) always). For example, questions were "Do you need your dad's permission to stay out late at night?" and "Does your mother always want you to tell where you are at night, with whom and what you are doing together?".

Since no differences between paternal and maternal control were expected, a new scale was created to combine both variables into one. This scale ranged from 1 to 5, in which the mean scores were used. The final variable 'parental monitoring' therefore consisted of 10 items. Cronbach's  $\alpha = 0.88$ , indicating that this scale was reliable (Bland & Altman, 1997). Participants had to have responded to at least 5 of these items if they contained information on both parents. A mean imputation was used for 17 participants who filled out 6,7,8 or 9 items in which the missing values were replaced by the mean score on the variable, to include them in the sample. 9 participants only included information on one parent, but all of these had filled out all 5 items. Since it is possible that these participants only have one parent, they were included in the analyses.

### ***Impulsivity***

To measure impulsivity, a scale was developed from the self-report Revised NEO Personality Inventory questionnaire (NEO-PI-R) by Costa & McCrae (1992). This is a large questionnaire in which various personality traits are measured. Since this study is solely interested in impulsivity, a subscale was created to measure this construct. This scale consists of 8 items that had to be rated on a Likert scale with 1 (totally disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (totally agree). Items included “I barely give in to my impulses” and “Sometimes I do things on a whim that I regret later”. Four items had to be recoded. A mean score was developed, with 1 being the lowest score on impulsivity and 5 the highest. Two items correlated negatively with the scale and were therefore removed, meaning that there were 6 items left measuring impulsivity. After removing these items, Cronbach’s  $\alpha$  was 0.53, which is not that reliable, according to the guidelines by Bland and Altman (1997). At least 3 of the items had to be filled out to be included in the sample. For 21 participants who filled out 3, 4 or 5 items, a mean imputation was used.

### **Covariates**

In all analyses, age and gender were considered as control variables. Gender was considered a covariate due to the sexual double standard, in which it is found to be more acceptable for boys to engage in sexual behavior, compared to girls. Research has shown that boys are earlier with their sexual debut compared to girls (Madkour et al., 2010). Also, it is likely that girls experience more parental monitoring as parents are more protective for girls. Moreover, boys were found to be more impulsive than girls, which could influence the results (Shulman et al., 2015). Age was also considered a covariate, since it is more likely that when becoming older, sexual behavior takes place. It is also logical to assume that younger adolescents experience more parental monitoring, as they transition slowly into adulthood.

Moreover, age and impulsivity are related, as impulsivity levels tend to decrease over time in adolescents (Steinberg, 2005).

## **Data Analysis**

For conducting the statistical analyses, open-source statistics program JASP was used. Before analyzing, the data were prepared for analyses. First, incomplete responses were excluded from the dataset. Second, descriptive statistics were obtained from the current sample (see Table 1). Since parental monitoring and impulsivity were measured on a scale, reliability analyses were performed to determine the Cronbach's alphas ( $\alpha$ ) of these scales.

To investigate the relations between 1) parental monitoring and age at sexual debut, 2) parental monitoring and impulsivity, and 3) impulsivity and age at sexual debut, three separate linear regressions were carried out. This allows to investigate these relations without controlling for the other variable, which would be the case in a mediation analysis. A mediation analysis was carried out afterwards to investigate the indirect effect of parental monitoring on sexual debut, through impulsivity. In all analyses, age and gender were considered as covariates. A significance level of  $p < .05$  was used. Before the analyses were conducted, it was checked whether the assumptions were met. Linearity and homoscedasticity were checked by creating plots of residuals versus predicted values and showed no violation. Cook's Distance was used to detect outliers. Values above 1 would indicate an outlier, but none were found. No violation was found for the assumption of multicollinearity, as no VIF values were above 10. Histograms were created to check the normality of residuals and showed no violations.

## **Results**

### **Descriptive Statistics and Correlations**

Means and standard deviations of the adolescents participating in the current study for age, age at sexual debut, parental monitoring and impulsivity are displayed in Table 1 ( $N =$

595). For sexual debut, the minimum score adolescents could give was 11, but this could also refer to younger than 11 years. Table 2 presents the correlations between the variables. For interpretation of the correlations, the classification by Evans (1996) was used, in which considers correlations under .39 weak, correlations between .40 and .59 moderate, and correlations above .60 strong. A positive, yet small relation was found between parental monitoring and sexual debut. This means that higher levels of parental monitoring are related to an older age at adolescents' sexual debut. No correlations were found between impulsivity and sexual debut, or for impulsivity and parental monitoring. Age was significantly positively correlated with age at sexual debut and negatively to parental monitoring, although this relation was small. This indicates that higher levels of parental monitoring are related to a younger age of the adolescent child. Age at sexual debut and gender were negatively related, meaning that being a boy was related to an earlier sexual debut. A strong correlation was found between gender and parental monitoring, indicating that being a boy was related to lower levels of parental monitoring. Finally, a small significant negative correlation was observed between gender and impulsivity, in which being a boy was related to lower levels in impulsivity.

**Table 1.**

*Descriptive Statistics of the Variables*

|                           | Min | Max | Mean  | SD   |
|---------------------------|-----|-----|-------|------|
| Age                       | 12  | 18  | 15.94 | 0.81 |
| Age at Sexual Debut       | 11  | 16  | 14.60 | 1.11 |
| Parental Monitoring (1-5) | 1   | 5   | 3.01  | 0.93 |
| Impulsivity (1-5)         | 1   | 5   | 2.59  | 0.54 |



**Table 2.***Pearson's Correlations of the Variables*

|                        | 1     | 2      | 3     | 4   |
|------------------------|-------|--------|-------|-----|
| 1. Age at Sexual Debut |       |        |       |     |
| 2. Parental Monitoring | .13*  |        |       |     |
| 3. Impulsivity         | -.02  | -.01   |       |     |
| 4. Age                 | .31** | -.08*  | -.03  |     |
| 5. Gender <sup>a</sup> | -.10* | -.61** | -.08* | .02 |

<sup>a</sup> 0 = boys, 1 = girls.

Note. \*  $p < .05$ . \*\*  $p < .001$ .

**Main Effects**

To test the effect of parental monitoring on sexual debut, a linear regression analysis was performed. As Table 3 shows, a positive relation between parental monitoring and sexual debut was found ( $F = 41.41, p < .001$ ). These results are in line with H1. This model explains 12.3% of the variance in adolescent's sexual debut ( $R^2 = 0.123$ ).

**Table 3.***Results of a Linear Regression Analysis on Age at Sexual Debut*

| Variable            | $\beta$ | SE   | 95% CI |       |
|---------------------|---------|------|--------|-------|
|                     |         |      | LL     | UL    |
| Parental Monitoring | .14**   | 0.05 | 0.08   | 0.26  |
| Age                 | .33**   | 0.05 | 0.35   | 0.56  |
| Gender              | -.09*   | 0.09 | -0.38  | -0.03 |

Note. \*  $p < .05$ . \*\*  $p < .001$ .

It was expected in H2 that parental monitoring would be related to lower levels of impulsivity. Results of a linear regression on this relation are presented in Table 4. In contrast

to the hypothesis, no relation between parental monitoring and impulsivity was found ( $F = 0.38, p = .836$ ).  $R^2$  was .001, indicating only 1 percent of the variance of impulsivity could be explained by this model.

**Table 4.**

*Results of a Linear Regression Analysis on Impulsivity*

| Variable            | $\beta$ | SE   | 95% CI |         |
|---------------------|---------|------|--------|---------|
|                     |         |      | LL     | UL      |
| Parental Monitoring | -.02    | 0.02 | -0.06  | 0.04    |
| Age                 | -.03    | 0.03 | -0.08  | 0.03    |
| Gender              | -.08*   | 0.05 | -0.38  | < -0.01 |

*Note.* \*  $p < .05$ . \*\*  $p < .001$ .

**Table 5.**

*Results of a Linear Regression Analysis on Age at Sexual Debut*

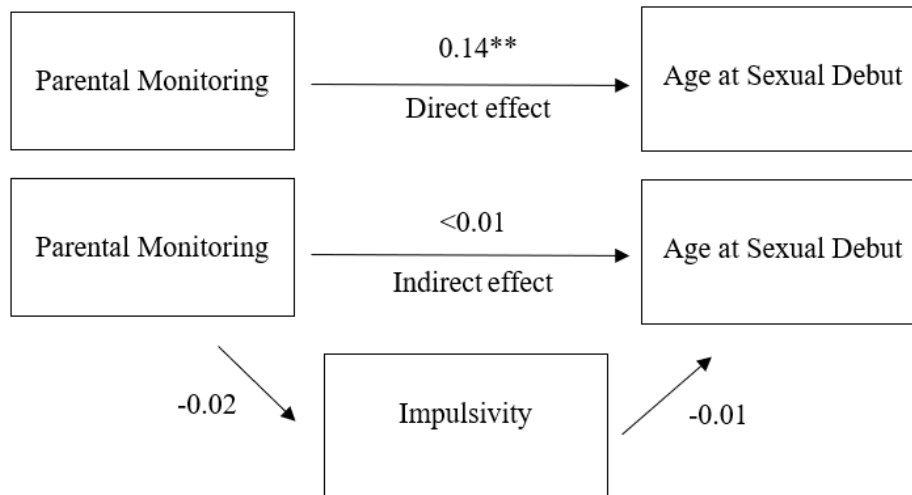
| Variable    | $\beta$ | SE   | 95% CI |       |
|-------------|---------|------|--------|-------|
|             |         |      | LL     | UL    |
| Impulsivity | -.02    | 0.08 | -0.19  | 0.12  |
| Age         | .31**   | 0.05 | 0.33   | 0.53  |
| Gender      | -.11*   | 0.09 | -0.42  | -0.07 |

*Note.* \*  $p < .05$ . \*\*  $p < .001$ .

To investigate the relation between impulsivity and age at sexual debut, a third linear regression was performed. As shown in Table 5, no relation was found between the two variables ( $F = 32.08, p = .847$ ). This is in contrast with H3, which expected a negative relation. This model explains 9.8% of the variance on sexual debut ( $R^2 = .098$ ).

**Figure 2.**

Standardized regression coefficients for the relationship between parental monitoring, impulsivity, and age at sexual debut, controlled for age and gender.



Note. \*\* $p < 0.001$

### The Mediating Role of Impulsivity

An additional analysis was performed to examine the predicted mediating role of adolescent impulsivity. Results are portrayed in Figure 2. Relations between the variables vary slightly, since in this mediation model, results are controlled for the other variable. As shown in the figure, no indirect effect of parental monitoring was found on sexual debut, through impulsivity ( $p = .769$ ,  $CI = <-0.01 - <0.01$ ). This is not in line with H4.

### Discussion

The aim of the current research was to investigate the relation between parental monitoring and adolescents' age at their sexual debut and how impulsivity influences this relation, distinguishing from previous research. Specifically, to answer the question to what extent parental monitoring and sexual debut are related and to what extent this relation is explained by impulsivity, it looked at the mediating role of impulsivity. Results showed that higher levels of parental monitoring were related to a later sexual debut in Dutch adolescents.

However, no relations between parental monitoring and impulsivity were found, nor between impulsivity and sexual debut. Additionally, no mediation effect was found.

Results from the current study are in line with H1, showing that higher levels of parental monitoring and a later sexual debut were related. This specifically means that adolescents who experience more parental monitoring reported to have had sexual intercourse for the first time at a later age compared to adolescents who reported to experience less parental monitoring. An explanation for this based on existing literature is that parental monitoring would give adolescents less opportunities to be in risky situations, such as in which sexual behavior could take place (Keijsers, 2015; Longmore et al., 2009; Madsen, 2008; Sieverding et al., 2015). This idea derives from the criminological opportunity theory, in which an opportunity invites adolescents to engage in certain behaviors (Cohen & Felson, 2010). Additionally, parental monitoring could reflect certain norms about relationships and sex, which could influence the way adolescents think about engaging in (romantic) relationships and sexual behavior (Madsen, 2008). These attitudes could in turn influence their behavior. However, the current study used a cross-sectional design and should be interpreted as such, so no conclusions can be drawn on the direction of this relation, since this method does not allow to examine causal effects. Previous research did find causal effects of parental monitoring on a later age at which adolescents have their sexual debut (e.g. Lionetti et al., 2019). This is in line with the current research, which states that there is a positive relation between the two concepts.

The direct effect of parental monitoring on impulsivity also was measured. No relation was found, which was in contrast with H2. It was expected that higher levels of parental monitoring would be related to lower levels of impulsivity due to an improvement in impulse control and self-control based on research by Pelhalm and colleagues (2024). The social control theory would suggest that parental monitoring is a form of social control that

strengthens adolescents' bonds to societal institutions, such as the family (Hirschi, 1969). These stronger bonds would then affect adolescents' levels of self-control. With current results in mind, it should be critically evaluated whether parental monitoring can indeed be viewed as a form of social control. It could be possible that the variety within parental monitoring is too broad, with big differences between parental awareness about their children's activities, compared to actively controlling their behavior (Stattin & Kerr, 2000). This could have influenced the results.

Results also showed no relation between impulsivity and sexual debut, in contrast to H3. Previous research did find that lower levels of impulsivity were related to a later sexual debut, as demonstrated by Khurana and colleagues (2012). This was explained by the fact that these adolescents were less likely to engage in sensation-seeking behaviors, such as sexual intercourse. A possible explanation for this was that in the shift toward viewing sex during adolescence as normative, rather than a form of risky behavior, theories explaining risky behavior do not apply to the age of one's sexual debut.

Furthermore, current results do not support the claim made by the social cognitive theory that lower levels of impulsivity would lead to better self-regulation (Magnusson et al., 2019). It could be the case that impulsivity was not measured in the most optimal way, which would also explain that H2 is not supported by the current research. The reliability of the scale of impulsivity was questionable since it was not above the satisfactory value of .61 (Bland & Altman, 1997), even after removing items that correlated negatively with the scale. This means that the items measuring impulsivity showed questionable or poor inter-relatedness to each other. More specifically, it could mean that some items measured do not represent the intended construct. This could have influenced the results negatively, by not including the right construct in the analyses.

When examining the relation between parental monitoring and sexual debut through impulsivity, no effect was found. This contrasted with H4, which assumed that this relation was partly explained by impulsivity. It could be due to the way impulsivity was measured, as mentioned before. Another possible explanation for this could be that impulsivity is quite stable and not that changeable, and that genetic and biological factors are too strong for parental monitoring to influence this character trait (DeYoung & Rueter, 2010). Since parental monitoring and a later sexual debut were related, further research could investigate other pathways through which this relation can be explained, for example through communication and setting norms (Madsen, 2008; Wills et al., 2004). This reflects on attitudes towards sexual behavior, which are more changeable than characteristics as impulsivity.

### **Strengths and Limitations**

Since the current research used existing data, data were collected with other research questions in mind. This could mean that the constructs used in this research were not measured in the most optimal way. For example, impulsivity was measured with eight items that were not strongly correlated with each other, which makes it questionable whether it really measured impulsivity. Moreover, all variables were measured in the same wave, which would only allow for a cross-sectional design of the current study. This is still an appropriate research design to investigate relations, yet nothing can be concluded about the direction of the relations. Therefore, some scholars argue that this method is not as appropriate for mediation analyses compared to longitudinal designs (Rohrer et al., 2022). Longitudinal research can show direction of relations, and show causality, which could strengthen the interpretation of a mediation analysis and show whether parental monitoring predicts a later sexual debut.

Due to the complexity of the sample and research question, it was not possible to include the adolescents that had never had sex. Since age differed per adolescent who had not had sex, this group could not be considered as one. Therefore, results cannot be generalized to all Dutch adolescents since the sample only existed of adolescents who had had sex before the age of 17. This group could differ from the group that did not have sexual experiences, possibly because their puberty started earlier, or were more mature compared to their peers, engaging in ‘adult-like’ behaviors such as having sex. This indicates that the results should be interpreted carefully.

However, this study contributes to the social science field by providing a comprehensive interdisciplinary view on parental practices, character traits and adolescent behavior. The current study uses theories from different disciplines which give a broader vision of underlying patterns between the relations investigated. For example, some theories that are typically used for explaining delinquent behavior were used to explain the relation with other risky behaviors, such as an early sexual debut as suggested by some scholars, which is something that has not been done often before. This study tries to incorporate the sex positive approach as well, indicating sex is normative for adolescents. By integrating these different perspectives, a broader understanding can be created about parental monitoring and sexual behavior, as it is quite nuanced, and many factors play a role, such as attitudes and norms.

### **Implications**

It was found that higher levels of parental monitoring and a later sexual debut were related, implicating that adolescents’ relationship with parents and sexual behavior have an interplay. This research suggests that this is due to the opportunities adolescents get or do not get to engage in sexual behavior, as well as through certain norms and rules their parents set.

Moreover, impulsivity was found not to be related with parental monitoring and age at sexual debut, which could mean that it is a rather fixed trait, that is not easily changeable.

Future research could further examine the underlying pathways of parental monitoring, such as attitudes towards relationships and sex. Moreover, qualitative research could show how adolescents feel about parental monitoring and how it affects their daily life decision making and/or their sexual behavior which would give some interesting findings. This would allow to see whether they think their parents have an influence on this or would give insights on other reasoning why adolescents do or do not engage in sexual behavior.

### **Conclusion**

In short, the current research supports previous findings on the relation between parental monitoring and sexual debut in adolescents, in which higher levels of parental monitoring and a later sexual debut are related. Impulsivity does not mediate this relationship, as initially hypothesized. Although not all hypotheses were supported, results showed the significance of parents in adolescents' sexual development, making them an important stakeholder in promoting sexual health in adolescents. Although sex is a normative part of adolescent development, to protect them from the possible negative consequences of a too early sexual debut, parents should keep an eye on that teen!



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## **Appendix I.**

### **Reflection on Interdisciplinarity**

This master's thesis can be viewed as interdisciplinary research since it touches upon different disciplines within the social science field, such as (developmental) psychology, and criminology. For instance, it investigates parent-child relationships by examining the concept of parental monitoring, taking on a developmental psychological approach in which parents influence the changes adolescents go through. Change is central in this approach. The current research stresses the importance of families and parents on a part of adolescent development, sexual development in this case. It looks at the trait impulsivity, which is particularly high among adolescents due to the cognitive development that takes place in this developmental stage. Sexual development is also something that is developed quickly in adolescence and is a big transformation compared to childhood, making it an important topic to investigate through a developmental psychological point of view.

While explaining the relation between parental monitoring and sexual debut, a theory that is most often used in criminology was used, the theory of opportunity (Cohen & Felson, 2010). Usually, this theory is used to illustrate the relation between opportunity and delinquent behavior, but as seen in the current research, it is also possible to apply this to other forms of (risky) behavior, such as engaging in sexual activity. Another criminological theory was used to examine the relation between parental monitoring and impulsivity, the Social Control Theory (Hirschi, 1969), indicating that parental monitoring can be viewed as a form of social control that would diminish impulsivity levels. Criminological theories are often designed to explain and form a framework to understanding risk factors for (delinquent) behaviors. However, understanding risk factors for non-delinquent risky behaviors, such as sexual initiation is also important and therefore, criminological theories could identify the underlying mechanisms as well. As some scholars state, sexual intercourse at an early age can



be seen as risky and want to investigate what influences and contributes to this behavior in order to make policy to prevent adolescents from the possible negative consequences.

Besides the criminological theories used, a more psychological view was used as well, by including the variable impulsivity as partly explanatory factor between the relation between parental monitoring and sexual debut. This perspective indicated that sexual debut is influenced by parental monitoring, through psychological factors such as the personality trait impulsivity. This was explained by the psychological social cognitive theory that emphasized the cognitive processes that occur during adolescence which influence adolescent behavior (Magnusson et al., 2019). Especially the relation between impulsivity and age at sexual debut is investigated through a psychological lens since it was investigated how an individual's characteristics would influence their own behavior.

By using different disciplines, a more comprehensive view of the existing literature can be given. Integrating different perspectives allows to critically examine relationships between two or more variables and the underlying mechanisms and pathways, especially in adolescent behavior. It is useful to include multiple perspectives in the current study, since adolescent development is a broad topic in which many developmental changes occur. For example, this development is influenced by individual character traits, such as impulsivity, but also by the environments, such as the parents. Peers also play an important role in the sexual development of adolescents, either on risky behaviors, as well as on attitudes and opportunities adolescents have.