# CHAPTER 7

## SUMMARY & GENERAL DISCUSSION

## SUMMARY

For a long time, there was a dearth of research on disruptive behavior in girls. Most studies on disruptive behaviors primarily focused on boys, since these kinds of behaviors were thought to be rare among girls. In recent years, a growing body of research demonstrated that 'worrisome' disruptive behavior does occur in girls, even already in childhood (e.g., Hipwell et al., 2002; Odgers et al., 2008). Further, research shows that disruptive behavior in girls has different ages of onset and follows diverse patterns (for a review, see Fontaine, Carbonneau, Vitaro, Barker, & Tremblay, 2009). Moreover, a study that followed disruptive girls into adulthood found that girls with a childhood onset are more likely to have severe problems in adulthood, compared with girls with an adolescent onset (Odgers et al., 2008). From an early intervention perspective, this makes childhood a key developmental period to study girls' disruptive behavior.

Findings have consistently shown that the average prognosis of disruptive girls is most unfavorable (Bardone et al., 1996; Moffitt et al., 2001). Girls' disruptive behavior is characterized by both homotypic continuity (prolonged disruptive behavior) and heterotypical continuity (variation in negative outcomes) through childhood, adolescence and adulthood (Odgers et al., 2008; Pajer, 1998). As a result, in adulthood, a wide array of dysfunctional outcomes has been found, including considerable psychopathology, poor psychosocial functioning, delinquent behavior and early pregnancy (Bardone et al., 1996; Moffitt et al., 2001; Pajer, 1998; Stack, 2003). Detained females in particular are a subgroup of disruptive girls who appear to be at especially risk for poor outcomes later in life, given the severity of the problems (e.g., high rates of substance problems, history of maltreatment, comorbid mental health problems) that are found in this population (Abram et al., 2003; McCabe et al, 2002; Teplin et al., 2002).

Given that disruptive girls are likely to experience various adverse circumstances in adulthood, concerns are raised about the environment in which their children grow up (Jaffee et al., 2006; Zoccolillo et al., 2005). Maternal characteristics such as prenatal substance use, maternal psychopathology, negative parenting behaviors and adverse family demographics are known to negatively contribute to the development of children's disruptive behavior (e.g., Loeber & Stouthamer-Loeber, 1986; Brennan et al., 2003; Patterson et al., 1989; Petitclerc & Tremblay 2009). Moreover, the fact that poor outcomes tend to cluster in mothers with a history of disruptive behavior may increase the probability of detrimental consequences for their offspring. Therefore, the multiplicity of adverse (maternal) conditions on offspring must be considered as important in research on the transmission of disruptive behavior.

In sum, consequences of girls' disruptive behavior may result in poor outcomes for themselves and their offspring. To avoid repetition on the next generation, it is essential to advance knowledge on the course of girls' disruptive behavior and the mechanisms that contribute to the transmission of this behavior. Therefore, the present thesis focuses on the

development of girls' disruptive behavior, their adjustment problems later in life and the transfer of disruptive behavior to their children. The main objectives for this thesis are three-fold. First, to further examine the development of young girls' disruptive behavior. Second, to describe young adult outcomes in an at-risk population of disruptive girls. Third, to study adverse maternal characteristics predicting disruptive behavior in their offspring.

## Summary of the findings

To address the aims of this thesis, several studies were conducted in girls using two different data sets:

- Sample A consists of a community sample of 2,451 inner-city girls in Pittsburgh, who participated in the Pittsburgh Girls Study (PGS) in the USA. The PGS began in 1999 and by using an accelerated longitudinal design; four cohorts (initially assessed at ages 5, 6, 7, and 8) were recruited from all neighborhoods in the city of Pittsburgh (Keenan et al., 2010). The research papers in this thesis utilized data from the first 9 waves of annually collected data, covering girls' ages 6 to 14.
- Sample B consists of a clinical sample of 184 (80.4% of original sample of 229) Dutch detained adolescent females who were re-assessed in young adulthood (mean age = 20.0, SD = 1.4) after a follow-up period of 3.5 and 6.7 years. These females participated in a previous cross-sectional study that recruited detained females from Dutch youth detention centers between 2002 and 2004 (Hamerlynck et al., 2007).

This final chapter summarizes the results of the studies presented in this thesis, and will be followed by a general discussion.

In chapter two, the prevalence and stability of girls' disruptive behavior in childhood was investigated among girls from sample A. Results demonstrated remarkable similar mean levels of disruptive behavior across ages 7 and 12. Girls' disruptive behavior was predominantly defined by oppositional behaviors and less by conduct disorder behaviors. By means of generalized estimating equation analyses we found that various maternal risk factors predicted girls' disruptive behavior, even when controlled for girls' earlier disruptive behavior. Some maternal factors were operative early in life (e.g., prenatal nicotine use, mothers' history of conduct problems) and these effects tended to persist over time, while other factors had their impact at a later time point (maternal alcohol use, harsh punishment). Prenatal nicotine use, maternal depression, mothers' history of conduct problems, and low maternal warmth explained unique variance in multivariate models. Further, analyses of the relationship between maternal psychopathology and parenting behaviors, demonstrated that the effects of maternal depression and mothers' history of conduct problems on girls' disruptive behavior were partially mediated by adverse parenting behaviors.

The findings in chapter three indicated that both maternal risk and promotive factors play a role in the prediction of disruptive behavior among girls of sample A. Moreover, both fixed (i.e., mothers history of conduct problems) and potentially malleable dynamic factors (i.e., prenatal nicotine use, maternal warmth) explained unique variance. Multivariate results including the most important independent maternal factors, showed that maternal warmth reduced girls' disruptive behavior even in the presence of several maternal risk factors and when accounting for girls' earlier disruptive behavior. In line with the cumulative risk hypothesis, findings further demonstrated that an increase of maternal risk factors heightened the probability of girls' disruptive behavior disorders (DBD). Also, the higher the number of promotive factors the lower the chance of DBD. In addition, results confirmed that mothers with a history of conduct problems had a higher risk of their daughters developing disruptive behavior. These girls were exposed to more risk factors and fewer promotive factors compared to daughters of mothers without a history of conduct problems.

Chapter four used sample A and identified distinct trajectories of girls' childhood disruptive behavior. Four trajectories with relatively stable courses were distinguished, which indicated 1) low (37.9%), 2) medium-low (46.1%), 3) medium-high (13.2%) and 4) high levels of disruptive behavior (2.8%). These trajectory groups were compared on early adolescent outcomes. Because the proportion of girls with high levels of disruptive behavior was relatively small, and to be able to draw inferences about the risk of adjustment problems in early adolescence, the medium-high and high groups were combined for these analyses. Girls with the highest levels of disruptive behavior in childhood were at increased risk for nearly all of the examined adjustment problems (i.e., depression, self-harm, nicotine use, illegal substance use, interpersonal aggression, early sexual behavior, risky sexual behavior, peer delinquency, low academic achievement). Moreover, adjustment problems in early adolescence were disproportionately accumulated in girls with the highest levels of childhood disruptive behavior.

Chapter five describes the young adult outcomes of previously detained young women from sample B. Findings indicated that over half of the detained girls had mental health problems in young adulthood (59%), and a substantial proportion had comorbid mental health problems (41.5%). Moreover, two out of five had developed a borderline personality disorder (BPD) and/or an antisocial personality disorder (APD). Almost all detained females had multiple adjustment problems in young adulthood including socioeconomic disadvantages (i.e., financial problems, low educational achievement, no school or job attainment, public assistance), delinquent behavior, a history of violent intimate relationships, and young motherhood. Detained girls who developed BPD and/or APD in young adulthood had increased levels of adjustment problems compared to girls with only axis-1 problems and girls without mental health problems in young adulthood. Finally, results demonstrated that

diversity within adverse outcomes could be predicted by females' problems behavior during detention.

The characteristics of detained females from sample B who have become mothers in young adulthood were studied in chapter six. Findings demonstrated that a substantial proportion became mother at a young age (28.3%) while they were characterized by poor circumstances. For example, most of the previously detained young mothers used substances during pregnancy (e.g., nicotine and alcohol), and were further characterized by adverse demographics (e.g., financial problems, low educational achievement), substantial mental health problems (e.g., depression, BPD and/or APD) and a history of violent intimate relationships. Further, about half had committed a crime in the past year. Detained females who became a mother functioned worse on various young adult conditions (such as poor educational attainment, receiving public assistance) compared to detained females without a child in young adulthood, even when accounted for preexisting problems measured at detainment, their age and the time after detention. However, detained females who became mother were less often substance dependent in young adulthood compared to those without a child.

## GENERAL DISCUSSION

This thesis demonstrates that girls' disruptive behavior has far-reaching consequences for themselves and the generation to come. Findings indicate that disruptive girls often continue their deviant behavior after childhood and that a proportion develops multiple coexisting adjustment problems through adolescence and adulthood. These adversities strongly interfere with girls' normative development as for example shown by their poor academic achievement, substance use, and multiple mental health problems. Moreover, when disruptive girls become mothers, their children are exposed to their various detrimental circumstances. Consequently, these children are at higher risk to also develop disruptive behavior. Thus, girls' disruptive behavior appears to be transmitted from mothers with a history of disruptive behavior to their offspring, which as a result may sustain a negative vicious circle across subsequent generations.

### Development of girls' disruptive behavior

This thesis expands current knowledge on girls' disruptive behavior in several ways. Findings in chapter two indicate homotypic continuity of girls' disruptive behavior. Disruptive behavior was already present at a young age in the lives of many girls and the mean level of this behavior was stable through childhood. These findings were consistent with the prior research that described that disruptive behavior is expected to peak in the first years of a child's life, followed by slight decrease through childhood (Tremblay et al., 2010). It is important to realize that the relatively low mean levels of disruptive behavior indicate that

such behavior is not common among young girls. However, the fact that an early compared to a later onset of girls' childhood disruptive behavior predicted detrimental outcomes later in life (Odgers et al., 2008), underlined the need to further examine the small group of girls who display disruptive behavior at an early age.

For that reason, this thesis also paid attention to variations in disruptive behavior among young disruptive girls. Results in chapter four demonstrated diversity in the severity of girls' disruptive behavior. Girls who exhibited no or low levels of disruptive behavior were distinguished from girls displaying higher levels of disruptive behavior. Previous studies consistently showed heterotypical continuity in girls' disruptive behavior by finding that a large proportion exhibits multiple adaptation problems in adulthood (Bardone et al., 1996; Odgers et al., 2008). This study expanded on this topic by showing that girls who display childhood disruptive behavior were at elevated risk for several adaptation problems that accumulated already in early adolescence (e.g., depression, illegal substance use, risky sexual behavior, and lower academic achievements). These results support the hypothesis that early disruptive behavior escalates, diversifies and increasingly interferes with normal development, with accumulating negative consequences across the years (Masten et al., 2005). Thus, early disruptive behavior in girls is not common, but appears to be relatively stable, and predicts serious adaptation problems already in early adolescence. Therefore, childhood is an important time-point to target girls who display disruptive behavior for intervention programs in order to prevent escalation and spillover effects to other life domains such as school and risky behaviors.

Studies in this thesis further underlined how worrisome the consequences of disruptive behavior can be in an at risk group of detained adolescent females. Previous research indicated that detained adolescent females suffered from several adversities such as high rates of mental health problems, substance abuse and a history of trauma exposure (Abram et al., 2003; Dixon et al., 2005; McCabe et al., 2002). The findings in chapter five expand on the limited knowledge on this subgroup by showing that detained females experience pervasive malfunctioning on multiple outcomes in young adulthood. Besides co-occurring mental health problems, previously detained females had extensive adjustment problems. Moreover, results in chapter six showed that a substantial proportion became mother at an early age, and their offspring was exposed to various detrimental environmental factors.

Results in chapter five suggest that formerly detained females show mental health problems into young adulthood. High prevalence rates of (comorbid) mental health problems were found to be in concordance with the rates found during detention (Abram et al, 2003; Hamerlynck et al., 2007; Teplin et al., 2002), and much higher compared to those in the general population (Copeland et al., 2009; Grant et al., 2004). Results further showed that formerly detained females had multiple adjustment problems in young adulthood, including socioeconomic disadvantages and delinquent behavior. Also, previously detained females'

mental health problems were negatively related to their general functioning. Especially, previously detained young women who had developed a personality disorder (BPD an/or APD) were among the most handicapped with regard to mental health and adjustment problems. This indicates the need for prevention and treatment programs to target detained adolescent females who are at risk to develop a personality disorder. This may have the potential to lower detained girls' disability in young adulthood.

Findings on this sample further demonstrated that motherhood had a negative impact on previously detained females' young adult lives (see chapter six). Several conditions were more unfavorable compared to previously detained females without a child. For example, previously detained mothers less often had a high school diploma, were more often in receipt of public assistance, and experienced a higher rate of depression. Findings confirm the notion that early childbearing puts a strain on young females' transition into adulthood (Jaffee et al., 2002). Future studies should follow up previously detained females later in life to investigate whether these differences continue to exist when compared with previously detained females who begin childbearing at a later age.

### Transmission of girls' disruptive behavior to the next generation

Children of mothers with a history of disruptive behavior are likely to grow up under multiple adverse conditions that are known to contribute to the intergenerational transmission of disruptive behavior. Findings in chapter three demonstrate that daughters of mothers with a history of disruptive behavior were exposed to higher levels of accumulated risk (e.g., prenatal nicotine use, low maternal education, harsh punishment), and lower levels of promotive factors (e.g., maternal warmth, consistent discipline). As a result, these girls were at higher risk to develop disruptive behavior compared to daughters of mothers without a history of disruptive behavior. As found in research on boy samples (e.g., Farrington et al., 2008; van der Laan et al., 2010), the probability of girls' disruptive behavior disorders (DBD) accelerated when the sum of cumulative risk increased. Also, results demonstrated that by raising levels of promotive factors, the impact of risk effects on girls' disruptive behavior could be lowered. Thus, cumulative effects are of significance considering treatment of girls' disruptive behavior. However, it is important to realize that each maternal risk and promotive effect may account for a different degree of variance in disruptive behavior. Moreover, specific variables may interact together or magnify the impact of each other (Kerns, Siemer, & Bremariu, 2011). Therefore, it would be valuable to further research specific interactions between risk and promotive factors to better understand the transmission mechanisms of girls' disruptive behavior across generations.

Another important aspect in the transmission of girls' disruptive behavior is that maternal risk factors are active at different time points on children's development. Chapter 3 demonstrates that besides later risk factors (such as parenting behaviors), very early maternal

risks (i.e., prenatal nicotine use) already played an important role in the development of girls' disruptive behavior. However, most prevention programs are currently directed at parenting skills, and knowledge on early maternal risk factors is thus far underused in public health approaches to reduce girls' disruptive behavior. The findings in this thesis support the suggestion that interventions on adverse maternal characteristics need to begin at or even before conception (Zoccolillo, Paquette, & Tremblay, 2005). Families of mothers with a history of disruptive behavior could serve as a marker of at risk families, which can be targeted for early prevention programs.

Transmission of disruptive behavior from previously detained young mothers to their offspring appears likely given the compellingly poor circumstances of these young mothers that were found (see chapter 6). In some cases, extreme conditions of previously detained young mothers resulted in loss of custody of their child for a period of time. For example, an alarmingly high proportion of the mothers had exposed their offspring to substances while pregnant (i.e., nicotine, alcohol, or drugs). In addition, over half had experienced a violent intimate relationship. Researchers suggest that antisocial women are prone to a violent relationship because of a phenomenon called assortative mating (Moffitt et al., 2001), which implies that females and males with an antisocial history are likely to affiliate with similar others. Thus, next to adverse maternal characteristics, their offspring may be exposed to additional detrimental factors of their fathers. Further, a worrisome combination of motherhood and mental health problems was found. A proportion of the mothers was depressed or had a BPD, and these mental problems in mothers are associated with less emotional availability, less sensitivity and lowered consistent parenting (Goodman & Gotlib, 1999; Stepp, Pilkonis, Hipwell, & Levine, 2011).

Overall, results on previously detained females stress their vulnerable state in young adulthood. In combination with the substantial medical and social service expenses for these young women and their offspring who are also at high risk to develop disruptive behavior, this intergenerational pattern is a major public health concern in need of programmatic attention. Interventions are needed to break a cycle of adversity and produce better life outcomes for these young females and the next generation of children.

## Limitations

Several limitation of the studies presented in this thesis should be considered when interpreting the results. First, important variables that could have explained the variation in girls' disruptive behavior and detained females' outcomes in young adulthood were not examined in this thesis. For example, cognitive capacity has been found an important predictor of delinquent and disruptive behavior (Loeber et al., 2012). Also, maternal characteristics that appeared to be important in previous research with regard to the transmission of disruptive behavior to offspring were not assessed in this thesis, such as perceived parenting stress (Thornberry,

Freeman-Gallant, & Lovegrove, 2009) and attachments dynamics between mother and child (Madigan, Moran, Schuengel, Pederson, & Otten, 2007). Furthermore, we did not investigate paternal characteristics that contribute to girls' development of disruptive behavior, nor did we examine differences between maternal and paternal transmission of disruptive behavior to their daughters while this may be important. Prior research has demonstrated for example that parenting styles of mothers and fathers were differently linked to their daughters' disruptive behavior (Hoeve, Dubas, Gerris, van der Laan, & Smeenk, 2011). Also, in this thesis we focused on environmental factors, while prior studies have demonstrated the importance of genetic factors. For example, Bornovalova and colleagues (2010) found a highly heritable liability for the transmission of disruptive behavior from mother with a history of disruptive behavior to preadolescent children. Second, when studying girls' disruptive behavior, it may be important to also include disruptive behaviors that are suggested to be relevant to females such as relational or indirect aggression (e.g., Crick & Zahn-Waxler, 2003). Third, we examined cumulative effects in both samples. However, we did not account for the possibility that independent variables accounted for different degrees of variance in outcomes. Moreover, specific variables may interact together or magnify the impact of each other (Kerns et al., 2011). Nonetheless the limitations, our results demonstrate that examining cumulative effects has a clear additional value in studies on girls' disruptive behavior. Fourth, in the studies on Dutch detained females that were followed into young adulthood, subjects' ages ranged from 16 and 24 years. It is plausible to assume that this variation in subjects' ages has influenced the results. For example, it is likely that age is associated with a longer average period of follow-up after detention. This may have affected the levels of adjustment outcomes that were found in this thesis, such as the prevalence of motherhood, delinquency rates after detention, and the proportions of subjects with financial debts. However, by controlling for age, and time after detention we have attempted to strongly reduce the likelihood that these individual differences account for the results.

## Implications for clinical practice

In general, findings of this thesis underline that girls' disruptive behavior co-occurs with several adversities and wide-ranging costs for girls themselves, their offspring and society. Investment in prevention and intervention programs could have important consequences for both the concurrent and later wellbeing of disruptive girls and future generations. Results of this thesis suggest ways in which we might be able to break the cycle of adversity and produce better life outcomes for the next generation of children.

Our findings showed that in general, the focus of interventions for disruptive girls should not be on single but on multiple factors. Results show that both young disruptive girls and detained females had multiple coexisting adjustment problems later in life. Further, findings suggest that the aim of interventions should be to be both eliminate risk and enhance

promotive factors. These effects were demonstrated to counterbalance in the prediction of disruptive behavior in childhood girls. Thus, any risk factor that can be reduced (e.g., harsh punishment) can make a difference in the reduction of girls' disruptive behavior. In addition, it may pay off to stimulate promotive effects to prevent disruptive behavior (e.g., maternal warmth), even in the presence of multiple risks or non-malleable risk factors (such as having a mother with a history of disruptive behavior).

With regard to the timing of intervention, results presented in this thesis demonstrated that prevention programs should ideally start during pregnancy or even prior to conception, in order to reduce transfer of adversities from mothers to their children. Most interventions on child's disruptive behavior start later and are directed at parenting factors, while important very early risk factors were distinguished during pregnancy and the first years after birth. To illustrate this: prenatal substance use was found to be associated with girls' disruptive behavior, and is known to damage the unborn child already before birth (Brennan, Grekin, & Mednick, 2003). Also, mothers' provision of a responsive parenting style, such as maternal warmth, is known to play a vital role in the development of secure attachment already during the early years of life (Bowlby, 1951; Madigan et al., 2007). This has been supported by results reported in this thesis indicating that maternal warmth appeared to be capable of reducing daughters' disruptive behavior, even in the presence of several other significant adversities such as found in high-risk families (e.g., low maternal education, household receipt of public assistance). Therefore it may be valuable to add this constructive parenting style to early preventing approaches of girls' disruptive behavior in families at risk.

Research on effective interventions has indicated a couple of programs that focus on the mothers' health and well-being that have proved to be effective in changing life outcomes for the mothers and improving the environment they provide for their children (Seitz & Apfel, 1999). For example, the Nurse-Family Partnership program educates young mothers in at-risk families on the consequences of their adverse (parenting) behaviors for their selves and their offspring, and how to improve this (Olds, 2008). Long-term effects of this program are promising for children born to high-risk mothers. It has for example demonstrated to be successful in reducing the proportion of children entering the justice system, and underlines the potential for longer-term cost savings among high-risk youth (Eckenrode et al., 2010; Olds et al., 1998). 'Voorzorg' is a Dutch intervention based on The Nurse-Family Partnership program (Kooijman, 2005a, 2005b). The effectiveness of this program in the Netherlands is currently studied and the first results demonstrates that young mothers smoked less often both while pregnant and after childbirth, and the level of relational violence lowered more compared to a control group (which received care as usual) (de Graaf, 2005).

Findings in this thesis also indicated that girls with increased levels of disruptive behavior at age 6 are likely to do so at age 12. Consistent with the notion that early disruptive behavior causes a snowball effect (Masten & Cicchetti, 2010), we found that girls with

high levels of childhood disruptive behavior had a wide range of adverse outcomes in early adolescence (e.g., depression, illegal substance use, risky sexsual behavior, and lower academic achievement). Emerging adjustment problems may enhance the continuity of disruptive behavior and other adjustment problems throughout adolescence and are likely to prohibit girls from the development of normative social and psychological skills needed for adulthood. Therefore, girls who display disruptive behavior in childhood should be targeted for prevention programs, as this provides an opportunity to prevent them from an escalating course through adolescence and adulthood. The Earlscourt Girls Connection program is a noteworthy intervention, as this is a gender-sensitive program for disruptive girls between ages 6 and 12 (Pepler, Walsh, & Levene, 2004).

With regard to detained females, predictive findings of this study highlight the importance of screening during detention, as it was possible to identify detained females at risk for adverse outcomes in young adulthood. A substantial group of detained females developed BPD and/or APD, and findings showed that they had the most mental health and adjustment problems in young adulthood. Therefore, this subgroup requires tailored and continued mental health care. Dialectical Behavioral Therapy for Adolescents is an example of a promising intervention for adolescent females at risk for developing such a personality disorder (DBT-A; Miller, Rathus, & Linehan, 2007). 'Surfen op emoties' is a Dutch intervention based on DBT-A (De Bruin, Koudstaal, & Muller, 2013). This may also be a successful treatment for detained females who are at risk to develop BPD and or APD. However, such programs require stability in the clients. This is often lacking in detained females because they are often transferred to another juvenile institution or return to high-risk environments in the community. It would be valuable to examine the effectiveness of such a treatment in a sample of detained females. In addition, programs for detained females should not be limited to the duration of their detention, but should be extended to include the transition into adulthood. Given ongoing mental health problems, substance use, and socio-economical disadvantages documented in this thesis, formerly detained females need long-term support. Further, because previously detained females often have a multiplicity of problems, re-entry programs should not limit their focus to a single domain. This was supported by research on an effective multi-modal intervention for adjudicated girls that demonstrated beneficial effects and suggest that interventions need to include various risk domains (MTFC; Chamberlaine, Leve, & DeGarmo, 2007). Multi-dimensional Treatment Foster Care program is a notable effective alternative to youth detainment, which demonstrated effects for preventing delinquency and reducing early pregnancy in adjudicated girls (Chamberlaine, Leve, & DeGarmo, 2007; Kerr, Leve, & Chamberlaine, 2009).

Early motherhood for detained adolescent females may set the stage for continued mental health and adjustment problems for the mothers and their children. Society costs are likely to be high due to heavy use of social and mental health services. It is therefore

important to explore preventive interventions that meet the needs of previously detained young mothers and their children. Preventing detained females' risky sexual behaviors by interventions designed to make healthy choices may decrease abortion rates and unplanned early pregnancy (Bennett & Assefi, 2005; Harden, Brunton, Fletcher, & Oakley, 2009). To reduce intergenerational transmission of disruptive behavior to the next generation, it would be important to actively support families of previously detained young mothers. Young previously detained mothers and their offspring may also benefit from The Nurse-Family Partnership program (Olds et al., 1998).

## Directions for further research

The aim of this thesis was to expand on girls' disruptive behavior and the transfer of this behavior to the next generation. In the light of this topic, several recommendations for future research can be made. Further follow-up into adolescence in young adulthood of girls is needed to expand existing literature. For example, the following issues need further consideration: clues for the early identification of girls who are at risk for ongoing difficulties, prevalence rates of disruptive behavior through childhood and adolescence, different trajectories of disruptive behavior into adulthood, and disruptive girls' characteristics that predict young motherhood.

Next, in this thesis we have focused on within-gender differences, while it may also be important to expand on between-gender differences in future research. Large mixed gender samples are needed to study mechanisms that explain the gender paradox in the development of disruptive behavior. For example, questions that remain unanswered regard to why gender differences in prevalence of disruptive behavior exist, and why disruptive females are associated with a broader range of coexisting problems compared to disruptive males.

A further recommendation relates to the fact that studies on effective intervention programs for girls' disruptive behavior are scarce and a large group of disruptive girls does not receive treatment (Hipwell & Loeber, 2006). Most existing interventions for children and adolescents are designed for males, while (groups of) disruptive girls have specific needs. For example, our results on detained adolescent females demonstrated that diversity within their mental health and adjustment outcomes in young adulthood could be predicted. This provides important targets for the development of treatment for this group at risk. More research is needed to design and implement gender appropriate interventions for disruptive girls. This is a research opportunity of the greatest importance.

Last, the literature on detained females is relatively limited, and especially studies using a multiple-outcome approach. Therefore, our results on previously detained young females need replication in other samples of detained females. Furthermore this group needs to be followed further in life, to examine the stability of previously detained females' dysfunctional

characteristics. Also, more detailed research is needed to unravel detained females' pathways to specific mental disorders and adjustment problems. By studying the early development of previously detained females' children, their parenting skills, and the family context they provide to their offspring, important information on the mechanisms that explain the transmission of disruptive behavior onto their offspring could be generated.