Chapter 7

Summary and Discussion
The aim of this dissertation was to further our understanding of risk factors associated with childhood aggression and the assessment of childhood aggression. To this end, Chapter 2 comprised an overview of meta-analyses and systematic reviews on treatment effectiveness and its moderators for childhood aggression. In addition, Chapter 3 to 5 examined macro-level and micro-level predictors of childhood and adolescent aggression and moderation on the contribution of genetic and environmental factors to individual differences in childhood aggression. Finally, Chapter 6 tested the agreement between different instruments commonly used to assess aggressive behavior. Table 1 briefly describes the aims and highlights of each chapter. The next paragraphs provide a more elaborate summary of each chapter.

The goal of Chapter 2 was to enhance our understanding of treatment effectiveness for childhood aggression. Therefore, Chapter 2 presented a literature synthesis of 72 meta-analyses and systematic reviews that examined effectiveness of treatments for childhood aggression. The study reviewed the characteristics of the meta-analyses and systematic reviews, effect sizes across types of treatments, and effects of various moderators (i.e., participant variables, treatment variables, and methodological variables). Treatments included psychosocial (non-pharmacological) universal prevention, selective prevention, indicated prevention, and intervention. The conclusion was that for universal and selective prevention, effects were mostly absent or small; for indicated prevention and intervention, effects were mostly small to medium. Furthermore, most moderators of treatment effectiveness had no effect in the majority of studies (i.e., child age, child gender, implementation to individuals or groups, person implementing the treatment, different treatment programs, and session related factors or treatment intensity) or mixed effects (i.e., socioeconomic status, type of treatment, informant, research quality). The only two significant moderators comprised of pre-treatment levels of aggression and parental involvement. Treatment effectiveness was higher for children with higher levels of aggression before treatment and when parents were involved in the treatment.

The discussion elaborated on two patterns that emerged within the results and on the implications of those patterns for research and clinical practice. First, the results identified similarities between universal and selective prevention compared to indicated prevention and intervention, respectively. Second, results revealed that based on existing research it is not yet possible to distinguish subgroups of children that would benefit more from treatment for aggression than others. The positive moderating effect of parental involvement on treatment effectiveness for childhood aggression suggests that an opportunity for future research may be to focus more on parental influences as possible moderators of treatment effectiveness. In addition, more systematic research attention for the association between individual factors and treatment effectiveness for childhood aggression would be promising.

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<td>Chapter</td>
<td>Research aim</td>
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<tr>
<td>2</td>
<td>Create an overview of overall treatment effectiveness and its moderators for childhood aggression.</td>
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<td>3</td>
<td>Examine the association between national-level policies for child and adolescent mental health (CAMH) and adolescent mental health.</td>
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<td>4</td>
<td>Predict childhood aggression based on a large sample with a broad set of predictor variables.</td>
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<td>5</td>
<td>Investigate the moderating effect of socioeconomic status (SES) on the genetic architecture of childhood aggressive behavior.</td>
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<td>Assess the agreement between different measures of childhood aggressive behavior.</td>
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To examine the extent to which national-level variables explain variance in aggression, Chapter 3 assessed the association between national-level policies for child and adolescent mental health (CAMH) and individual-level adolescent mental health. Data were from 172,829 adolescents aged eleven to fifteen years, from 30 European countries in the 2013/14 Health Behaviour in School aged Children (HBSC) study. Adolescent mental health indicators comprised aggressive behavior, life satisfaction, and psychosomatic symptoms. Information on national-level policies for CAMH was gathered from renowned statistical institutes and included availability of epidemiological data, the number of CAMH facilities, investment in family benefits, and investment in education. In addition, to ascertain that the association between
behavior in 10-year-old children. Data were from the Netherlands Twin Register (N = 24,277) and the Twin Early Development Study (N = 1,064) from the United Kingdom. Results revealed that TS1 mediated the contribution of genetic and environmental factors to childhood behavior. The contribution of genetic factors was higher, the contribution of environmental factors was lower, and the contribution of both genetic and environmental factors was lower for children from a low SES background compared to children from a high SES background. The contribution of genetic factors was similar across SES status. Multivariate analyses revealed that adolescent aggressive behavior was lower in countries with more CAMH policies even when taking other national-level variables into account. There was no association between CAMH policies and adolescent aggressive behavior. However, it is needed to understand how and why policies for child and adolescent mental health are associated with adolescent mental health and might have different effects for adolescent mental health.

Chapter 4 focused on identifying more proximal predictors for childhood aggression. In this chapter, data were analyzed from the Child and Adolescent Television Exposure Study (CATE). The sample size was 262,277 children. To identify a model to predict childhood aggression, a novel combined approach was used, which was psychometrically streamlined across multiple international cohorts including CAUS, NDR, and NTR. The results of the analysis showed that childhood aggression was predicted by four factors: (1) child's physical aggression, (2) child's prosocial behaviors, (3) child's externalizing behavior, (4) child's physical and emotional abuse. These results are consistent with previous findings from other studies.

Chapter 5 examined the contribution of genetic and environmental factors to childhood aggression. The contribution of genetic factors was higher, the contribution of environmental factors was lower, and the contribution of both genetic and environmental factors was lower for children from a low SES background compared to children from a high SES background. The contribution of genetic factors was similar across SES status. Multivariate analyses revealed that adolescent aggressive behavior was lower in countries with more CAMH policies even when taking other national-level variables into account. There was no association between CAMH policies and adolescent aggressive behavior. However, it is needed to understand how and why policies for child and adolescent mental health are associated with adolescent mental health and might have different effects for adolescent mental health.
yielded higher agreement (e.g., moderate to strong) than clinical cut-off scores. Genetic correlations among twins were higher than among non-twins, suggesting that genetic factors play a role in the development of aggressive behavior. The findings are consistent with previous studies that have shown a strong genetic component in the development of aggression.

The study also highlighted the importance of environmental factors. Children with a history of severe stress or trauma were more likely to engage in aggressive behavior, regardless of their genetic predispositions. This finding underscores the need for early intervention programs that address both genetic and environmental factors in the prevention and treatment of aggression.

Additionally, the study found that children with a history of aggression were more likely to have difficulties in academic performance and social functioning. This suggests that interventions aimed at improving academic achievement and social skills may be effective in reducing aggressive behavior.

In conclusion, the study provides valuable insights into the genetic and environmental factors that contribute to aggressive behavior in children. These findings can inform the development of targeted interventions that are effective in reducing aggression and improving overall well-being.

Further research is needed to understand the complex interplay between genetic and environmental factors in the development of aggression. Additionally, more research is needed to explore the long-term effects of interventions aimed at reducing aggression.

Prior research suggests that treatments that solely focus on the patient's emotional and behavioral health, in which children are not involved, possibly affect their outcomes. Therefore, the study emphasizes the importance of involving children in the treatment process to ensure better outcomes.
Chapter 2 provided a more comprehensive picture of the drivers and consequences of child aggression. The findings suggest that a variety of factors, including family dynamics, social environment, and individual characteristics, contribute to the development of aggressive behavior in children. The results from Chapter 5 indicated that the shared environment contributes more strongly to individual differences in child aggression than do nonshared environmental factors. This finding is consistent with previous research indicating that parents play a critical role in shaping children's behavior.

In Chapter 6, the focus was on the role of genetic factors in the development of aggression. The results from this analysis suggested that genetic factors may contribute significantly to the variance in children's aggression. Genetic factors were found to be more important in predicting aggression in children with a history of severe aggression compared to those with a history of mild aggression.

Overall, the findings from Chapters 2 to 6 provide a robust framework for understanding the complex interplay between genetic and environmental factors in the development of child aggression. These results have important implications for the development of interventions designed to prevent and treat aggression in children.
influence disappears in adolescence (Fornsh et al., 2016; Weselek et al., 2017). It would be useful to examine whether these differences are attributable to the different samples or the measurement of different constructs.


general conclusion

The results from Chapter 3 to Chapter 6 need to be interpreted as cross-sectional. The results are not causal, however, future longitudinal research may reveal the direction of effect, such as whether the predictors in Chapter 3 and Chapter 4 are a cause of an effect or a higher developmental trajectory. Additionally, the predictors in Chapter 3 and Chapter 4 are measured at different time points and may reflect different aspects of development. For instance, the predictors in Chapter 3 may be related to early development, while the predictors in Chapter 4 may be related to later development.

In conclusion, the findings suggest that a dimensional approach to the assessment of childhood aggression is promising in distinguishing subtypes of childhood aggression. The approach may allow for a more nuanced understanding of the factors that contribute to childhood aggression, and may provide new insights into effective prevention and intervention strategies.