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Research Master Thesis

MSc in Psychology (research) *track* Clinical and Health Psychology

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Faculty of Social and Behavioral Sciences – Leiden University

Date: May 2023

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Acknowledgements

I would like to express my sincere gratitude to my supervisors, W.G.M. Wentholt and Prof.dr. B.M. Elzinga, firsty and especially for providing me the opportunity to take part in this valuable research of RE-PAIR. Their valuable support and guidance throughout the completion of this thesis was much appreciated. Their expertise, encouragement, and insightful feedback have been instrumental in shaping the direction and quality of this research.

I am deeply grateful for the patience, time, and effort my supervisor Wilma devoted to reviewing drafts, providing constructive criticism, and offering valuable suggestions for improvement. Despite some personal hardships that I experienced during the process, her unwavering support, guidance and understanding have been a constant source of motivation and help throughout this challenging process.

Lastly, I want to express my deepest appreciation to my family and friends, but especially my husband Mehmet, for their unwavering support, understanding, and encouragement throughout my academic journey. Their love and belief in me have been my constant pillars of strength.

Without the guidance and support of all the individuals mentioned above, this thesis would not have been possible. Their contributions have undoubtedly enriched the outcome of this research, and for that, I am truly grateful.

Elif Sena Uyanik

Contents

Abstract

Causal beliefs about depression can shape patient behavior and treatment adherence and in the case of adolescent depression, causal beliefs of both depressed adolescents and their parents seem to be of equal importance. In this mixed-method study, we aimed to 1) qualitatively identify the causal beliefs of depression reported by clinically referred adolescents and their parents, and examine the discrepancies between mother-child and father-child pairs and to 2) quantitatively assess the relationship between these discrepancies and adolescent depression severity, and investigate whether this relationship was moderated by the adolescent's attachment security with their parents. As part of the RE-PAIR project, a total of 34 adolescents, 34 mothers, and 26 fathers participated in interviews and completed questionnaires. The interview data was analyzed using thematic analysis in ATLAS.ti, and hierarchical regression analysis in SPSS was conducted to test the moderation hypothesis. The results revealed a total of 12 distinct causal beliefs, centered around *relational issues, stressful family context, and inherent characteristics of the adolescent.* We found high discrepancy levels (i.e. low agreement: 0-54%) between the reports of adolescents and their parents regarding these beliefs. However, these high discrepancies did not significantly relate to the severity of adolescent depression. While this study was the first to examine both adolescent and parental causal beliefs in a discrepancy-depression framework, further research is needed to understand the impact of discrepant perspectives on treatment outcomes and to explore the level of parental insight and understanding (e.g. good communication/ attachment security) for their adolescents' perspective, despite differing views.

Keywords: *adolescent depression, causal beliefs, parent-adolescent discrepancy, attachment security, depression severity.*

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Depression is a common and debilitating psychological disorder among adolescents worldwide, with up to 15.5% estimated lifetime prevalence in the Dutch adolescent population (Ormel, Raven, Van Oort et al., 2015; World Health Organization [WHO], 2022). Depression in adolescence is often associated with significant emotional and social impairments and with serious interferences on academical and relational functioning in adulthood, together with and increased risk of suicide (Birmaher, Ryan, Williamson, & Brent, 1996; Maughan, Collishaw, & Stringaris, 2013; Bursztein, Cendrine, Apter & Alana, 2009). Given the high and long-lasting burden that adolescent depression posits on individuals and their close environment (Maughan, Collishaw, & Stringaris, 2013; Lewinsohn et al., 1998), research into the causal and risk factors of adolescent depression has been an important concern and demand worldwide (WHO, 2022).In this context, it is not only the causal factors that warrant attention but also the causal beliefs held by adolescents themselves, referring to their own perceptions and interpretations of what causes the depression (Nunstedt et al., 2012). Recognizing the significance of causal beliefs, our study seeks to explore and broaden the understanding on the relationship between causal beliefs and adolescent depression.

Role of Causal Beliefs in Adolescent Depression

Recently, the role of causal beliefs about mental health conditions has gained rapid recognition (Midgley et al., 2017; Nunstedt et al., 2012). As such, Brown and colleagues (2007) have shown that the self-regulatory model of illness cognitions (Leventhal et al., 1992), a model based on causal beliefs about illness, can be employed successfully in clinically depressed populations to better understand patient behavior and treatment adherence. In this line, several studies (McCann, Lubman,& Clark, 2012; Wisdom & Green 2004) indicated that differences in causal beliefs that adolescents have about their depression form an important determinant for the likelihood of seeking help and preferences and engagement in treatment (Midgley et al., 2017; Bhui & Bhugra, 2002; Midgley et al., 2017; Nunstedt et al., 2012). This has been confirmed for both adult and adolescent populations (Brown et al., 2007; Midgley et al., 2017) although studies with adolescents have been relatively scarce.

Next to the causal beliefs of adolescents, the causal beliefs of parents about the adolescents' depression are of great importance as well. Parents with lower understanding about depression, such as depression literacy or depression stigma, appear more likely to have negative parental responses and attitudes towards adolescent depressive symptoms (Johnco & Rapee, 2018). Such parental responses are known to influence adolescent emotional functioning and regulation by providing implicit or explicit messages about the unacceptance regarding particular emotions (Morris et al., 2007). Accordingly, such responses could be markers for low quality adolescent-parent attachment styles (Chang et al., 2020) given that adolescents with less secure attachment styles are known to be more

hesitant in communicating about internalizing symptoms as they fear being rejected or invalidated by the parent (Kobak and Bosmans 2019; Kobak et al. 2017). In this context, it seems essential to account for both the adolescent's and the parent's causal beliefs, which might be similar or contrasting. This awareness might be key in shaping a comprehensive understanding and effective strategies for addressing adolescent depression.

Discrepancy in Reporting Between Adolescents and Parents

Despite the importance of parental causal beliefs, many studies point out to the existence of incongruency, a.k.a discrepancy, between parent and adolescent reports on important key aspects related to depression (Laird & De Los Reyes, 201; De Los Reyes, Ohannessian, & Racz, 2018). For example, using a multiple informants design, Baumgartner and colleagues (2020) found that parents and adolescents even report differences on the very existence and severity of depressive symptoms. Similar discrepancies were found in studies on the quality of parenting in relation to adolescents' depression (Hou et al., 2019; Nelemans et al., 2016), in which adolescents often report more depressive symptoms and more negatively about parenting practices compared to their parents.

Discrepancies in Light of Theoretical Perspectives

De Los Reyes & Ohannessian (2016) and Nelemans et al. (2016), one of the pioneers in the field of discrepancy research in relation to adolescent depression, argue that discrepancies can yield valuable information about the reporters and the quality of their relationship. Several theoretical perspectives have been suggested to interpret the meaning of discrepancies in relation to adolescent depression. As such, it is argued that discrepancies reflect underlying problems, such as family stressors, ineffective communication styles, or lack of understanding due to the psychopathology of either the parent or the child (Laird & De Los Reyes 2013; Ohannessian & De Los Reyes 2014). This is in line with attachment theory (Bowlby, 1969) as insecure attachment in adolescence has been theoretically and empirically associated to adolescent depression (Chang et al., 2020; Falgares et al. 2017). Moreover, low parent-adolescent attachment security is characterized with hindrances in open communication and negotiation of goal conflicts between parents and adolescents (Kobak et al. 2017). In line with this, Chang et al. (2020) has shown that the quality of the parent-adolescent attachment styles can influence the level of discrepancies between adolescent-parent reports.

Another common theoretical interpretation of discrepancy reporting is the stage-environment fit theory (Eccles et al. 1993) which argues that large discrepancies between reports of parents and adolescents can be understood from the perspective of developmental 'mismatch' or 'low fit' between the needs of the adolescent and opportunities provided by the parent-adolescent relationship. This mismatch can cause for mistuned communication as the adolescent does not feel understood and experiences low support from parents, subsequently leading to more depressive symptoms (Nelemans et al., 2016*).*

These theoretical perspectives provide a compelling basis to understand the impact of parent-adolescent discrepancies in adolescent depression, but more empirical evidence is needed to draw definitive conclusions. In this line, exploring *discrepancies in causal beliefs*, an area that remains largely unexplored, holds the potential to provide valuable insights into the dynamic interplay among parent-adolescent communication, perceptions, and mental health outcomes.

Discrepancies in Causal Beliefs

In the case of causal beliefs, discrepancies indicate that differences in causal beliefs about the adolescent's depression might lead to different or conflicting ideas and attitudes between parents and adolescents. As such, parents that attribute the causes of the adolescent's depressive symptoms to the characteristics of the child rather than the result of a stressful home environment, would likely adopt different approaches in supporting the adolescent and seeking professional help (Radovic et al., 2015). Following the stage-environment fit model, we can argue that discrepancies between causal beliefs about adolescents' depression might lead to parental responses that do not match with the depressed adolescents' needs and therefore influence adolescent depression severity. This is again also in line with attachment theory on discrepant reporting (Kobak et al., 2017), linking low quality of parent-adolescent attachment security to patterns of unhealthy communication styles which subsequently results in enhanced differences in views on family conflict and feelings of rejection and invalidation from parents by the adolescent (Kobak & Bosmans, 2019).

However, it is worth considering that the potential negative impact of discrepancies in causal beliefs may be mitigated by other moderating factors, such as a healthy parent-adolescent relationship, communication quality or the level of empathy and support provided by the parent, despite differences in views. These factors could potentially act as buffers, minimizing the influence of discrepant beliefs on adolescent depression severity as they are known to be protective parental factors (Hair et al., 2008; Kullberg et al., 2023). Nevertheless, despite the insights offered by these theoretical perspectives, there is a scarcity of empirical studies investigating this phenomenon within the clinical context, highlighting a significant gap in our current understanding.

Current Study

The current study aims to investigate adolescent depression by *qualitatively* assessing the personal perceptions of *both* adolescents *and* their parents on the causal beliefs that may play a role in the onset of the depression. To our knowledge, no previous study has undertaken this approach, which we believe could provide a better understanding of adolescent depression and guide the development of more tailored and effective treatments. As such, we aim to build further on the qualitative work by Midgley et al. (2017) and in addition to exploring causal themes, we aim to examine the extent to which parent-adolescent reports are congruent or discrepant and how this discrepancy is related to the severity of the adolescents' depression.

Research Objectives & Hypotheses

The first objective of this study is to (1) examine the perceptions of adolescents and their parents on the causal beliefs of adolescents' depression. Specifically, we aim to answer the following research questions: (1a) "*What do adolescents and their parents report as their causal beliefs on the adolescents' depression?"* and (1b) "*To what extent is there a discrepancy between the reports of adolescents and their parents?".* Given the explorative nature of the research question, no specific hypothesis is generated for this part. However, based on previous literature and preliminary observations on the data (as this was part of a greater study project), we expect the following themes to be reported as possible causal beliefs: characteristics of the child, bewilderment (Midgley, 2017), school (Klaufus et al., 2022), genetics/ heritability (Hankin, 2006), family issues (Hankin, 2006), and stressful life events (Midgley, 2017; Shapero et al., 2014). We also expect that there will be a discrepancy in the reporting of the causal beliefs of depression between adolescents and their parents. This hypothesis is derived from similar multi-informant studies on discrepant parent-adolescent reports on adolescent depressive symptoms (Baumgartner et al., 2022) and parenting (Korelitz & Garber, 2016; Hou et al. 2019) in which reports of adolescent and parents differed substantially. Further, we will explore whether discrepancies are comparable or different for specific themes in causal beliefs.

The second objective of this study is to (2) investigate the relationship between discrepancies in causal beliefs of depression and depression severity in adolescents. The following research questions were formed; (2a) *"Is there a relationship between discrepancies in causal beliefs of depression and depression severity of the adolescent?*" and (2b) *"Does parent-child attachment security moderate the relationship between discrepancies in causal beliefs of depression and adolescent depression severity?".* Based on the stage-environment fit theory (Eccles et al. 1993, further developed by Nelemans et al., 2016) and attachment theory, we expect that there will be a relationship between discrepancies in causal beliefs of depression and depression severity, such that adolescents who present greater discrepancies in causal beliefs with their parents also show more depressive symptoms. We also hypothesize that this relationship will be moderated by the parent-child attachment security, such that the strength of the relationship between discrepant reporting on the causal beliefs of depression and depression severity is stronger in families with relatively lower parent-child attachment security. This is again based on attachment theory (Chang et al., 2020; Kobak & Bosmans, 2019; Falgares et al., 2017).

Methods

Design

This study was carried out as part of a larger study: RE-PAIR (Relations and Emotions in Parent Adolescent Interaction Research). Shortly, RE-PAIR uses a multi-center, multi-method, multi-informant, cross-sectional design to examine the relation between parent-child interactions and

adolescent depression by comparing families with an adolescent with current major depressive disorder (MDD) or dysthymia to families with an adolescent without psychopathology.

Participants

The total sample of RE-PAIR consisted of families with depressed adolescents ($N = 34$) and adolescents without psychopathology ($N = 80$). Our study sample consisted of 34 depressed adolescents (M_{age}= 15.67, SD= 0.24, $Range$=12-17), their mothers ($n=34$) and their fathers ($n=26$). As the focus and preference was on primary caregivers and the inclusion of both parents; adoptive, foster and stepparents (n=3 [4.9%]) were also included as long as they were involved in the upbringing and if adolescent perceived the parent as a primary caregiver. We refer to all these caregivers as 'mothers and fathers" in this study. Demographic characteristics of the sample is presented in Table 1.

Families were included in the study in case: a) the adolescent and at least one of the primary caregivers wanted to participate in the study and both had a good command of the Dutch language, b) adolescent was aged between 11 and 17 years, c) adolescent was living at home with at least one primary caregiver, d) adolescent was going to high school or higher education, e) adolescent has MDD or dysthymia as primary diagnosis. Families were excluded in case: the adolescent presented comorbid disorders; eating disorders / mental retardation / psychoses / addictions (SUD); or the adolescent used antidepressants (eg SSRIs or TCAs), unless the dose was stable. For parents, no other in- or exclusion criteria were specified.

Table 1. *Sociodemographic Characteristics of Participants.*

Characteristics	*n*	*%*
Adolescent Gender (female)	27	79,4%
Adolescent Ethnicitiy (Caucasian)	22	64.7%
Interviewed parents	60	
Mother	34	100%
Father	26	76,5%
Mother Education (higher education [HBO and higher])	18	52.9%
Father Education (higher education)	16	59.3%
Mother Ethnicity (Dutch)	24	70.6%
Father Ethnicity (Dutch)	23	85.2%

Procedure

The complete RE-PAIR study consists of four parts: online questionnaires, a research day at the lab, two weeks of Ecological Momentary Assessment (EMA), and a functional Magnetic Resonance Imaging (fMRI)-scan session. Families with a depressed adolescent were recruited via advertisement and collaborating mental health care facilities. If families were interested in

participation, the adolescent first underwent the K-SADS-PL (Reichert et al., 2002) interview to check for inclusion criteria. Families that met all criteria were invited for a lab visit at Leiden University Treatment and Expertise Centre (LUBEC) at Leiden University. Adolescents and their parents provided written informed consent at the start of the study. For adolescents younger than 16 years of age, both parents with legal custody signed informed consent for participation.

The current study includes part of the online questionnaires (i.e., demographics, depression symptom severity, parent-child attachment security) and part of the data collected during the lab visit. During the lab visit, families performed a variety of tasks, among which a qualitative semi-structured interview. This semi-structured interview, which is the focus of the present study, was carried out with each participating family member individually (further details in the Measures section). All participants received monetary compensation for their participation dependent on completion of study parts and travel expenses were compensated.

Ethics

Ethical approval has been obtained for this study by the Medical Ethical Committee of the Leiden University Medical Center (LUMC) on May 2nd in 2018 (NL62502.058.17). This study was carried out in compliance with the Declaration of Helsinki (64th WMA General Assembly, Fortaleza, Brazil, October 2013), as well as the Medical Scientific Research Act (WMO) and Good Clinical Practice recommendations (GCP).

Measures

Self-perceived Causal Beliefs of Depression

Semi-structured qualitative interview: Adolescents and parents were individually interviewed on self-perceived possible causes (i.e. causal beliefs) of the child's depression (based on Midgley, Ansaldo, & Target, 2014; see 'Qualitative questionnaire for adolescent complaints'). Thematic analysis was used to code the transcribed interview and prepare for output data (Braun & Clarke, 2006). ATLAS.ti (Version 22.0.6.0) was used to code and prepare data for further analysis. Each interview was audio-recorded and transcribed using AmberScript (2022) or verbatim and lasted between 5 to 62 min ($M \approx 30\ min$).

During the interviews, participants were asked about the adolescent's depression, how they experienced the depression and their causal beliefs of the depression. The full list of interview questions can be found in Appendix A. Participants were asked about their causal beliefs by the specific question: "*One of the things we are interested in is what could be a possible cause of depression or gloominess. What do you think could be the cause or causes of your (child's) symptoms? You can name whatever you think.*". We also asked a prompted question in which we provided a list of possible causes for depression, established by previous studies, and asked participants if they

recognized any themes in their own (child's) case. Although participants were only asked in a particular moment about their causal beliefs, the whole interview was read and coded accordingly whenever the participant explicitly mentioned a causal belief and directly linked that statement to the depressive symptoms. Since most participants mentioned causal factors and worsening factors together, our team decided to take both statements as 'causal factors'. The final data for analysis only included one weighting per code, meaning that each thematic causal belief was counted as only one report, even if it was mentioned multiple times by the participant during the interview. For an overview of the coding and decision tree, see 'Qualitative and Statistical Analyses' and Appendix A.

Degree of Discrepancy on the Reported Causal Beliefs of Depression

The 'Jaccard Index' (Jaccard, 1901 in Fletcher & Islam, 2018) was used to establish a 'degree of discrepancy score' between reports of adolescents and parents on the causal beliefs of adolescent's depression. The *degree of discrepancy score* is further explained in the Statistical Analyses section.

Adolescent Depression Severity (self-reported)

Patient Health Questionnaire (*PHQ-9:* Kroenke, Spitzer & Williams et al., 2001) is a 9 item self-administered questionnaire to assess depressive symptoms over the last two weeks and was used to assess depression severity. The items correspond to the nine DSM-IV criteria for depression and are scored as 0 (not at all) to 3 (nearly every day), and are summed to a total continuous score ranging from 0 to 27 (Kroenke & Spitzer, 2002). A score above 10 is suggestive for the presence of depression. PHQ-9 scores cut-off criteria have been determined to represent mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20+) depression symptomatology. Higher scores indicate higher depressive symptoms. The PHQ-9 has been validated for use in primary care (Kroenke et al., 2001) and also validated for a Dutch sample (Lamers, 2008). Internal consistency (Cronbach's alpha) was found to be good ($\alpha = 0.76$).

Quality of Parent-Adolescent Attachment Security

We used a shortened version of an adolescent report of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) to assess the attachment security per parent-adolescent dyad. While the original IPPA has 25 statements, the IPPA-V consists of 12 statements (items) per parent with 3 subscales: quality of communication, degree of trust in the parent, and alienation in parent-child contact. The items (e.g., *"I can count on my mother when I need to get something off my chest"*) are rated on a five-point Likert scale (0 = almost never, 4 = almost always).The IPPA-V is scored by reverse-scoring the negatively worded items and then summing the response values in each section. Higher scores indicate better attachment security between parent-adolescent. This scale has been validated (Raja, McGee & Stanton, 1992) and in this study, internal

consistency for this scale was found to be good with Cronbach's alpha for adolescent reports on mother-adolescent AS ($\alpha = 0.86$) and for father-adolescent AS ($\alpha = 0.84$).

Qualitative and Statistical Analyses

This study used a combination of qualitative and quantitative analysis methods. Qualitative analyses were performed using ATLAS.ti (Version 22.0.6.0) and by manually calculation of the discrepancy scores. For the quantitative analyses, IBM SPSS Statistics (Version 29) was used.

Research Question 1a

Data from the interviews were examined using thematic analysis (Braun & Clarke, 2006) which included 5 key steps: becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining themes, and writing up the results.

The analysis was conducted via ATLAS.ti (Version 22.0.6.0) software for coding and preparation of the data. The analysis process started with a research assistant reading three interviews and selecting relevant fragments, which were then discussed during intervision meetings with the research team to identify themes. This process was repeated by two other assistants to check for consistency. Additional interviews were read to update the themes, and a provisional coding tree was created based on previous steps. Six students from the research team were trained on the coding tree and ATLAS software, and the transcripts were coded in two rounds to reach consensus on ambiguities and refine the coding tree. For the final round, one new student was trained again and all interviews were thoroughly checked for inconsistencies. The findings were discussed during intervision meetings with the research team and final decisions were made regarding the coding tree. Nine transcripts were double coded with the graduate researcher to ensure reliability of coding. The coding process was iterative, and the graduate researcher and student(s) continually checked for the need to adjust the coding tree.

Research Question 1b

This research question consists of two parts: a) the establishment of a 'discrepancy score' and b) the exploration of this discrepancy score on a sample and family level.

The *discrepancy scores* were calculated for mothers and fathers separately based on the number of overlapping themes and subthemes between their reports and their child. We used the Jaccard Index (Jaccard, 1901) to establish a formula for the *degree of discrepancy score* between the reports of adolescents (A) and their parents (P= mother/ father). Simply put, the formula refers to the total number of *overlapping* reported causal beliefs (n(A) + n(P)) between adolescent and parent, divided by the *total number of reported causal beliefs* by both the adolescent and their parent (n(A) + n(P)). One minus this overlap score produces the discrepancy score. Higher scores indicate more discrepancy

in reports between adolescents and parents. This score was later used as the independent variable DISC in the quantitative analysis to predict depression severity (PHQ-9).

$$\text{Degree of discrepancy} = \left(1 - \frac{(n(A \cap P))}{n(A) + n(P)}\right) x \, 100$$

The *overlap* between reports of causal beliefs was done by assigning a score of 1 to main themes that overlapped and +1 to each overlapping subtheme. If there was no overlap, the score was 0. Both main- and subthemes were included in the scoring in order to acknowledge the parent's understanding of the causal beliefs. This is important since it can show that the parent is aware of a problem related to the adolescent's depression (main theme, e.g. school), but her specific report (subtheme, e.g. bullying instead of performance pressure) might not match that of the adolescent.

Next to this, using ATLAS.ti (Version 22.0.6.0), we also examined whether discrepancies were comparable or different for specific causal beliefs and explored the average discrepancy scores across families and the areas of disagreement within families.

Research Question 2a & 2b

We conducted hierarchical regression analyses in SPSS separately for mother-child and father-child pairs to examine the relationship between discrepancy scores (DISC) and depression severity (PHQ-9), and to determine whether parent-child attachment security (IPPA) moderated this relationship. The hierarchical regression analysis was conducted in three steps, with gender and age of the adolescent entered as covariates in the first step and the main effect of DISC and IPPA entered in the second step. The final step tested the moderation effect by adding the interaction of main effects (DISC x IPPA) in the model. In order to account for multicollinearity and better interpretability, we used mean-centered predictor variables in all steps (Schielzeth, 2010). To examine the moderation effects of attachment security (IPPA) more closely, simple slope analyses (Aiken & West, 1991) were conducted by plotting the regression equation of the dependent variable depression severity (PHQ-9) against the predictor variable discrepancy score of parents (DISC) for three levels of attachment security (IPPA). The levels of IPPA were determined by the guidelines of Aiken and West (1991) and were: low (1 standard deviation below the mean), average (mean), and high (1 standard deviation above the mean). Assumptions for hierarchical regression analysis were tested prior to modeling via examining the variable distributions and bivariate associations.

Results

1. Qualitative Analyses

1.1 Research Question 1a - Thematic Analysis of Causal Beliefs

Based on the results of our thematic analysis, we identified 12 main themes among the interviews regarding causal beliefs on depression of adolescents and their parents: *characteristics of*

the child, social issues, stressful family context, school, intergenerational factors, stressful life event, chronic stress in context outside of the family, puberty, bewilderment, cumulative effect, media use, and experienced lack of support and understanding. Several subthemes emerged from these main themes as well, all of which are presented in *Table 2*. Overall, our findings indicated that *characteristics of the child, stressful family context, social issues, stressful life events, school and intergenerational factors* were the most frequently mentioned causes for depression among adolescents as well as parents. These most mentioned main – and subthemes with several emerging patterns from our findings are discussed below. For better illustration of the themes, we also included selected quotes from parents and adolescents involved in our study, using pseudonyms for anonymity.

It is important to note here that, although the interview covered both unprompted and prompted questions (see *Appendix A*), these themes were created using only the unprompted interview questions. Essentially, these open-ended questions allowed participants to freely express their own knowledge and experiences regarding their causal beliefs without any prompts guiding their responses. Nonetheless, *Table 2* provides a comprehensive frequency count of reported causal beliefs in response to both unprompted and prompted questions.

Table 2. *Thematic categories with subthemes across adolescents and parents*

Themes and subthemes	Number of times reported per participant group		
	Adolescents (*n* = 34)	Mothers (*n* = 34)	Fathers (*n* = 26)
Characteristics of the child	**21**	**62**	**39**
Being different	2 (5.9%)	6 (17.6%)	5 (19.2%)
Biochemical imbalance	0	2 (5.9%)	0
Other Psychopathology	4 (11.8%)	15 (44.1%)	5 (19.2%)
Internalizing symptoms (character)	13 (38.2%)	24 (70.6%)	19 (73.1%)
Negative self-image	3 (8.8%)	14 (41.2%)	10 (38.5%)
Self-care	0	4 (11.8%)	1 (3.8%)
Social issues	**28**	**39**	**30**
Lack of (fulfilling) friendships	9 (26.5%)	13 (38.2%)	10 (38.5%)
Being bullied	8 (23.5%)	15 (44.1%)	8 (30.8%)
Problematic social relations	12 (35.3%)	14 (41.2%)	13 (50%)
Bad influence from friends	3 (8.8%)	6 (17.6%)	4 (15.4%)
Stressful family context	**28**	**38**	**28**
Absence of family member	**2** (5.9%)	3 (8.8%)	1 (3.8%)
Placement outside of core family	0	1 (2.9%)	1 (3.8%)
Problematic sibling relationship	1 (2.9%)	2 (5.9%)	1 (3.8%)
Problematic parent-child relationship	8 (23.5%)	14 (41.2%)	6 (23.1%)
Psychopathology within family	0	4 (11.8%)	2 (7.7%)
Divorce	10 (29.4%)	9 (26.5%)	8 (30.8%)
Stressful family atmosphere	9 (26.5%)	13 (38.2%)	9 (34.6%)
Illness within family	3 (8.8%)	3 (8.8%)	4 (15.4%)
School	**26**	**36**	**21**
General	8 (23.5%)	8 (23.5%)	7 (26.9%)
Lack of enjoyment in school	4 (11.8%)	5 (14.7%)	3 (11.5%)
Performance	8 (23.5%)	7 (20.6%)	5 (19.2%)
Pressure to perform	5 (14.7%)	12 (35.3%)	4 (15.4%)
Problems with teachers/ supervisors	0	4 (11.8%)	0
Changes in school/class/internship	4 (11.8%)	4 (11.8%)	3 (11.5%)
Intergenerational factors	**15**	**23**	**21**

Heredity/genetics	11 (32.4%)	14 (41.2%)	12 (46.2%)
Familial	10 (29.4%)	13 (38.2%)	14 (53.8%)
Stressful life event	**20**	**20**	**18**
Single event in family context	4 (11.8%)	5 (14.7%)	2 (7.7%)
Single event in social context	6 (17.6%)	5 (14.7%)	4 (15.4%)
Unspecified significant event	3 (8.8%)	2 (5.9%)	2 (7.7%)
Death within family	8 (23.5%)	7 (20.6%)	6 (23.1%)
Death outside of family	3 (8.8%)	2 (5.9%)	5 (19.2%)
Chronic stress in context outside of the family	**9**	**16**	**11**
COVID	7 (20.6%)	7 (20.6%)	4 (15.4%)
Physical Health	1 (2.9%)	6 (17.6%)	5 (19.2%)
Other	1 (2.9%)	3 (8.8%)	2 (7.7%)
Puberty	**3**	**18**	**10**
Hormones	0	8 (23.5%)	3 (11.5%)
Searching for identitiy	0	3 (8.8%)	3 (11.5%)
Life phase	2 (5.9%)	9 (26.5%)	5 (19.2%)
Searching for social place	1 (2.9%)	1 (2.9%)	1 (3.8%)
Bewilderment	**12 (35.3%)**	**9 (26.5%)**	**6 (23.1%)**
Cumulative Effect	**9 (26.5%)**	**5 (14.7%)**	**4 (15.4%)**
Media use	**2**	**5**	**9**
Other	2 (5.9%)	3 (8.8%)	6 (23.1%)
Comparison	0	4 (11.8%)	4 (15.4%)
Experienced lack of support and understanding	**1 (2.9%)**	**7 (20.6%)**	**1 (3.8%)**

Note. Table 2 summarizes main themes (causal beliefs) and their related subthemes from the interviews. The bold numbers represent the total sum of each main theme's subthemes. The percentages show the proportion of adolescents or parents (mothers/fathers) who reported each subtheme. For example, if 'negative self-image' is reported by 8.8% of adolescents, it means that 8.8% of the adolescent sample mentioned this subtheme.

Characteristics of the Child. We found that adolescents and their parents often attributed the development of depression to certain characteristics or traits of the adolescent. Here, we identified several subthemes within the main theme of 'characteristics of the child', including internalizing symptoms (character), negative self-image (e.g. inferiority complex), other psychopathology (i.e. PTSD, addictions), self-care (i.e. unhealthy eating/sleeping), being different (i.e. non-binary), and biochemical imbalance (i.e. lack of certain hormones). These traits were reported as being particularly persisting across situations and were perceived as potential causal or contributing factors to the development of depression, confirming previous literature as well (Midgley, 2017).

Within this category, the subtheme 'internalizing symptoms (character)' was the most mentioned among adolescents, mothers and fathers. This subtheme referred to internalizing cognitions and (negative) schemas associated with depression and included several traits of the child; such as being melancholic, having a sensitive nature, being a ruminator or a perfectionist and were linked to the onset of depression. . As such, a mother described: (coded as 'internalizing symptoms/character', parent of Bart, 18)*"I think it has to do with character; that he's not very resilient, he's so vulnerable … And I think he suffers because of that, since he can't regulate the emotions well and can't handle disappointment well. And I think that hits him very hard, the way that he is so sensitive."*

The subtheme, 'negative self-image' was also mentioned frequently, especially by parents, and referred to the general image the adolescent had of themselves or specific aspects of themselves. As such, low self-esteem and inferiority complex were often linked to depressive symptoms: *"I think the*

problems with [child] are much more in the sphere of how he looks at himself. That he doesn't see his own talents. He thinks very low of himself. So his self-esteem is very low. He doesn't believe in himself. He doesn't believe he can do things and that has a lot of influence on how he treats himself and others. So all those statements of " I can't do anything, I'm worthless, I'll never succeed, my whole future is ruined, I'd better die.".. That's one set of problems that he sees in himself." (coded as 'negative self-image', parent of Paul, 13).

Social Issues. This theme refers to social issues that may contribute to the onset of depression in adolescents and included the subthemes: lack of fulfilling friendships, being bullied, problematic social relations, and bad influence from friends. Social issues ranked high in the list for mentioned causal beliefs. More specifically, experienced rejection and lack of (fulfilling) relationships were adolescent's most mentioned concerns and often linked to the cause of their depressive mood. One adolescent (Valerie, 13) reported :" *I think I often feel alone. I don't know why I feel alone, but I think I'm also just shy around other people, so I kind of sit in my own world or something ... Since childhood I felt a bit lonely.*"

Being bullied was also identified as an important causal belief of depression according to most participants, and this theme was often co-occurring with a negative self-image. One adolescent mentioned bullying as the 'start of all': *"I think that it [the depression] started with the bullying, which caused me to build up a wall and a lot of distrust [towards everything]."* (coded as 'being bullied', Kelly, ,14).

Stressful Family Context. The theme 'stressful family context' refers to situations that create a stressful environment within the family and household that may contribute to the onset of depression in adolescents. This theme included several subthemes: absence of a family member, placement outside of core family, problematic sibling relationship, problematic parent-child relationship, parental separation/divorce, psychopathology within the family, stressful family atmosphere, and illness within family.

Adolescents and parents mentioned that family issues or conflicts, such as arguments between parents or problems with siblings, were a contributing factor to the adolescent's depression. They described a sense of stress or tension within the family environment and perceived this as potentially exacerbating to the adolescent's depression. As such, one adolescent reported (coded as 'problematic parent-child relationship):" *I think the home situation especially [is a cause]. Because you are there the most of your daily life which has the most influence on you. I think that, because sometimes things go really bad at home with my mother. Very often we have quarrels and very often irritations towards each other, differences in opinions...".* (Lily, 14)

The subthemes *problematic parent-child relationship*, next to *divorce* and *stressful family atmosphere* were the most frequently mentioned by both adolescents and by parents as a causal belief

of the depression. This included concrete behavior of the parent affecting the child or aspects that play a role in the relationship and interaction between parent and child, such as arguments between parent and child or feeling unheard or unseen by a parent. One mother mentioned the following: "*Well, she grew up in a family where there was a lot of fighting... I would call it mental domestic violence… That happened daily at one point…till she rang the bell and said that she couldn't take it anymore.. So I think [my daughter] might be traumatized.*" (coded as 'problematic parent-child relationship' and 'stressful family atmosphere', parent of Mia, 16).

It is important to note that while (sub)themes are as specific as possible, some (sub)themes cover a range of situations. In the case of 'problematic parent-child relationship', this subtheme includes instances of conflicts between adolescents and their parents, as well as instances of emotional/physical abuse and neglect to varying degrees.

School. The theme of 'School' refers to difficulties or challenges related to school that may have contributed to the onset of depression in adolescents and refers to statements that are specifically related to school, including situational factors such as problems with teachers but also person-related factors such as focus on performance or perfectionism. The subthemes within the school theme include 'general school stress, poor grades/performance, pressure to perform well in school, problems with teachers, lack of support or guidance, lack of enjoyment of school, and changes in school/class'.

Poor school performance and pressure to perform well at school were frequently mentioned as causal or strengthening factors for depression both among adolescents and their parents. Most adolescents linked their problems in school to feeling overwhelmed or stressed by school-related issues and perceived these as potential triggers or exacerbators of their depression. An adolescent boy mentioned the following (coded as 'pressure to perform') :"*Well, things weren't going well at school, and I wasn't feeling well back then either. With all those teachers after me and my mother after me, my grandma after me... Then [it] just got too much for me and then I ended up in such a mood when you just say "yes, I just don't care anymore".* (Romy, 13). This was an interesting finding, given the limited attention in previous literature regarding the impact of school-related stressors on adolescent depression.

Intergenerational Factors. One of the emerging themes of the thematic analysis was 'intergenerational factors', which refers to the influence of family traits and genetics on the development of adolescent depression. Many participants mentioned this as a possible cause for the adolescents' depression. The subthemes that emerged under this overarching theme were 'familial' and 'genetics/heredity'. This theme was scored when participants explicitly mentioned that the cause of the adolescent's depression was related to characteristics/problems of family members or was seen as hereditary. One adolescent explained his views of the underlying causes of depression as follows: (coded as 'genetics') "*Heredity could play a role, because both my parents are not very assertive*

either. And so I've never stood up for myself and I'm quick to believe things other people say about me. Especially bad things they say about me." (Bente, 17).

As such, some adolescents and parents were aware of the biomedical model of depression (Andreasen, 1985) and spoke on the possibility of intergenerational factors of their depressive mood, although they did not always specify what the exact intergenerational factor (i.e., genetic or social learning) was. Some participants also found familiarities within the (extended) family resembling the adolescents' situation and mood and attributed this to a more social learning/ familiarity principle related to depressive mood and coping. In some cases, participants linked both family traits and genetics as potential causes of the adolescent's depression, implying a complex interplay between these two factors. As such, a father reported : (coded as 'familial' and 'genetics/heredity'); "*Of course on the one hand it is the things that you go through and on the other hand what your genes are...I think both might play a role. The mother has had some depressive symptoms in her life. So maybe it's a bit in the genes, so to speak.*" (parent of Alex, 14).

Stressful Life Events. Stressful life events were identified as an impactful contributor to depressive symptoms among the study participants. These events included one-time occurrences within the family context (the death of a loved one or moving), as well as events outside of the family and within the broader social or school context (traumatic sexual assault), death outside of the family but also 'significant events' that where mentioned but unspecified during the interview.

Adolescents described feeling overwhelmed or unable to cope with these events and saw them as potential triggers of their depression. As one adolescent puts it : "*The second divorce (of my mother), it just went completely wrong. And well, not only between them, actually with me [as well], because of that divorce and because my father went to prison, those make me feel that way [depressive].*" (Emma, 16).

Some participants mentioned experiencing a single, impactful event that had a lasting impact on their emotional well-being, while others described a series of stressors that seemed to accumulate over time. Almost a quarter of all adolescent participant experienced a death within the family , including death of pets, and indicated this to be related to their depressive symptoms. This finding aligns with previous research demonstrating the impact of life events on the development and maintenance of depression (Shapero et al., 2014), as one adolescent puts it (coded as 'death within the family' and 'cumulative effect'): " *At the same time my dad had passed away, my grandpa had passed away, my grandma also half a year later... Yes, it was a bit too much altogether.*" (Michelle, 13).

1.2 Research Question 1b - Discrepancies in Causal Beliefs Between Adolescents and Parents

Here, we examined the extent of the discrepancy between the causal beliefs of adolescents and their parents on the sample- and family-level (e.g. within and between families). Consistent with our hypotheses, there was indeed a clear presentation of differences between reports of adolescents and

parents among families, as well as within families. Differences *within* families were captured using the *discrepancy scores*, which are visualized in *Figure 1*.
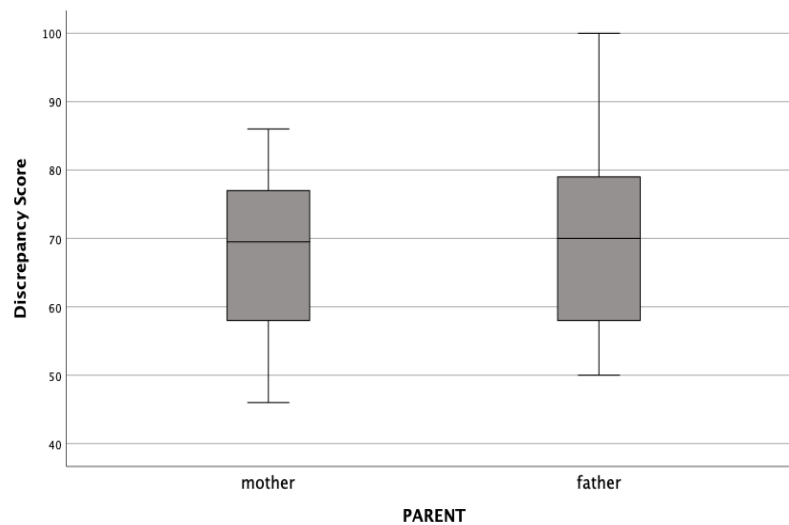

Figure 1. Frequency boxplot presenting the discrepancy scores for mothers (left) and fathers (right).

The results revealed that discrepancy scores were overall high across all parents, with fathers ($M = 70.15$ *, SD* = 2.58, *range* = [46, 86]) scoring slightly higher than mothers ($M = 68.12$ *, SD* = 1.91, *range* = [50, 100]). A paired sample t-test revealed that scores of mothers and fathers did not differ significantly from each other ($t(25) = -1.113$, $p = 0.138$). Moreover, the discrepancy scores showed a relatively normal distribution with the majority of the scores above 50, indicating that parents and adolescent differed substantially in their causal beliefs and the agreement was overall low.

In order to gain a more comprehensive understanding on how parents and adolescents differ in their causal beliefs, we also conducted an analysis in ATLAS.ti to determine if the discrepancies varied across the main themes (i.e., the mentioned causes), which is presented in Table 3. The table demonstrates the percentage of families (including mother-child and father-child reports) that show an agreement in reports on each main theme. Our findings revealed substantial variations in discrepancies among the themes, meaning that the that the agreement between parents and adolescents was not consistent across all themes. Themes such as 'social issues' and 'characteristics of the child' showed the highest level of agreement within families, with 49% and 43% of families having similar causal beliefs regarding these problems relating to the adolescent's depression. On the other hand, main themes such as 'puberty' and 'media usage' showed minimal agreement (7% and 4% respectively) and only corresponded with one parent. In such cases, we also found that the extent of agreement also differed between mothers and fathers. While adolescents rarely mentioned puberty as a factor in their depression, parents, particularly mothers, placed a substantial emphasis on hormonal imbalances and the challenges of this life phase contributing to the onset of depression. On the other hand, more

fathers than mothers tended to focus on negative effects of media use, such as social media
comparison and high screen time/gaming on depression.

Table 3. *Level of agreement within families across main themes*

	Agreement of mother-child reports within families ($n = 34$)	Agreement of father-child reports within families ($n = 26$)	Total time the theme is mentioned
Social issues	28%	21%	63
Characteristics of the Child	24%	19%	70
Intergenerational	22%	21%	53
School	26%	17%	54
Stressful Family Context	25%	16%	56
Chronic Stresful context	23%	17%	30
Social Life event	25%	14%	51
Bewilderment	19%	7%	27
Media	0	7%	14
Cumulative Effect	6%	0	18
Puberty	4%	0	26
Exp. lack of support	0	0	9

Note. This table demonstrates the level (%) of agreement within families (*n*=34) across the main themes. Agreement within families refers to the sum of the level of agreement of mother-child and father-child pairs.

The low agreement rate was also closely related to the frequency of themes mentioned. It is
noteworthy that adolescents mentioned significantly fewer causal beliefs of depression than their
parents: mothers and fathers reported on average 17 and 15 (sub)themes per person respectively, while
adolescents mentioned on average 10 (sub)themes. The higher agreement between mother-child
reports compared to father-child reports may partly be explained by the higher average number of
causal beliefs of mothers than fathers (see *Table 3*). Additionally, the higher number of reported causal
beliefs by mothers aligns with previous literature, which suggests that mothers generally have better
insight and are more involved in the child's psycho-social development than fathers (Day & Padilla-
Walker, 2009). Nevertheless, our findings showed that per parent-child report, the agreement was
overall low indicating high discrepancies.

2. Quantitative Analyses - Research Question 2a & 2b : The (moderated) Relationship between Discrepancy Scores and Depression Severity.

Preliminary Analyses

Assumptions for normality, linearity and homoscedasticity were met, as assessed by visual
inspection of the residual plots and Q-Q plots. There were no influential outliers as Cook's *d* values
were < 1 and residual statistics in the acceptable range between -3 and 3. Multicollinearity was neither
a problem with the predictor variables, which was checked by the variance inflation factor (VIF) < 10
(Fox, 1991). Furthermore, the Durbin Watson statistic was 2.032 for mothers and 1.777 for fathers,

indicating independence of residuals. Shapiro-Wilk tests showed that discrepancy scores (DISC) and attachment security (IPPA) were normally distributed as all *p*-values were above 0.05.

An a priori power analyses with power set to 0.8, α set to 0.05, and medium effect sizes of $F^2 = 0.15$ indicated a requisite sample size of 68, two times higher our actual sample size of 34 for mother-child pairs and 26 for father-child pairs. According to the G*Power estimate, we did not have enough participants in order the reach the desired power and detect a true effect. The rule of thumb, 20 cases per variable (Cohen, 1988), was also not met, thus results should be interpreted with caution.

Table 4 presents descriptive statistics and bivariate correlations for all variables of mother-child and father-child pairs. Paired sample t-test results showed no significant differences between mothers and fathers on DISC ($t(25) = -1.113$, $p = 0.138$) nor IPPA ($t(25) = 2.017$, $p = 0.06$. Remarkably, the correlations between PHQ-9 and DISC produced no significant results, with mother discrepancy ($r = -.004$, $p = .491$) and father discrepancy ($r = .287$, $p = 0.078$) both not significantly correlated with adolescent depression severity.

Table 4. *Pearson correlations and means, standard deviations and ranges for all regression variables.*

Variables	1	2	3	4	5	M	SD	Min	Max
Mother- Child									
1. Depression Severity PHQ-9	–	-.004	-.109	-.094	.115	21.04	4.07	9	27
2. Discrepancy Score (DISC)	-.004	–	-.046	.023	-.127	68.12	11.15	46	86
3. Attachment Security (IPPA)	-.109	-.046	–	-.032	-.237	36.21	6.71	24	48
4. Age	-.094	.023	-.032	–	-.14 1	15.67	1.51	12.65	18.09
5. Gender	.115	-.127	-.237	-.141	–	79.4 % female			
Father- Child									
1. Depression Severity PHQ-9	–	.287	-.136	-.073	.102	16.88	5.64	12	27
2. Discrepancy Score (DISC)	.287	–	-.153	.109	-.320	70.15	13.15	50	100
3. Attachment Security (IPPA)	-.136	-.153	–	.204	-.114	33.69	6.57	20	44
4. Age	-.073	.109	.204	–	.017	15.39	0.28	12.65	17.82
5. Gender	.102	-.320	-.114	.017	–	80.8% female			

Note. [*] *p*<.05 ; [**] *p*<.01 ; [***] *p*<.001: no *p* values are mentioned in the tables as all p-values were above the criterium of p > 0.05 and thus not significant. Statistics of the bivariate correlations are separately mentioned in text.

Hierarchical Regression Analyses

We performed a hierarchical regression analysis to test our hypothesis on the relationship between discrepancy scores and depression severity, moderated by attachment security. The results of the hierarchical regression analyses for mother-child and father-child pairs are presented in *Table 5*. No statistically significant results were captured within any of the regression models. Results of neither Model 1, 2 or 3 supported our hypotheses, indicating that in our sample, the relationship between DISC, IPPA and PHQ-9 was not established. Our hypothesis regarding the moderating effects of IPPA was also not confirmed as the addition of the interaction effect (IPPAxDISC) to the prediction of depression severity did not lead to a significant increase in model fit for mothers ($\Delta R_M^2 = .001$, $F_M(1, 28) = .022$, $p = .883$) nor for fathers ($\Delta R_F^2 = .057$, $F_F(1, 20) = 1.372$, $p = .255$).

Table 5. *Hierarchical regression Analysis for predicting Adolescent's Depression Severity*

Mother-Child					Father-Child				
Variable	β	SE β	B	*p*		β	SE β	B	*p*
Step 1 [$F(2,31) = 0.307$, $p = .738$] $R^2 = .019$					**Step 1** [$F(2,23) = .188$, $p = .830$] $R^2 = .016$				
Constant		9.242	22.996	.018*	Constant		9.238	23.461	.018*
Age	-.079	.563	-.248	.662	Age	-.075	.589	-.213	.722
Gender	.104	2.078	1.204	.567	Gender	.104	2.097	1.051	.621
Step 2 [$F(4,29) = .205$, $p = .934$] $R^2 = .027$ $\Delta R^2 = .008$					**Step 2** [$F(4, 21) = .631$, $p = .631$] $R^2 = .107$ $\Delta R^2 = .091$				
Constant		9.737	23.525	.022*	Constant		9.367	22.342	.027*
Age	-.086	.588	-.269	.651	Age	-.055	.601	-.158	.795
Gender	.081	2.248	.936	.680	Gender	.138	2.136	1.399	.520
Discrepancy score	-.002	.083	-.001	.992	Discrepancy score	.285	.065	.089	.188
Attachment security	-.093	.137	-.066	.635	Attachment security	-.123	.132	-.076	.568
Step 3 [$F(5,28) = .163$, $p = .974$] $R^2 = .028$ $\Delta R^2 = .001$					**Step 3** [$F(5,20) = .788$, $p = .571$] $R^2 = .165$ $\Delta R^2 = .057$				
Constant		10.173	23.869	.026*	Constant		9.662	25.471	.016*
Age	-.094	.623	-.295	.640	Age	-.149	.638	-.426	.512
Gender	.084	2.303	.976	.675	Gender	.269	2.400	2.723	.270
Discrepancy score	0.00	.085	0.000	.999	Discrepancy score	.159	.073	.049	.506
Attachment security	-.097	.141	-.069	.630	Attachment security	-.185	.135	-.115	.405
Discrepancy x Attachment security	-.030	.017	-.003	.883	Discrepancy x Attachment security	-.337	.015	-.018	.255

Note. * $p<.05$; ** $p<.01$; *** $p<.001$. Significance tests were two-tailed.

To gain further insight into the data, the interaction effect was graphed and interpreted using Aiken and West's (1991) procedures with simple slope lines for discrepancy scores (DISC) and

depression severity plotted at three levels (-1 *SD*, mean, +1 *SD*) of attachment security (IPPA) for mother-and father-child pairs (see *Figure 3*). To visualize this interaction effect accordingly, the moderation analysis was repeated using Hayes' PROCESS macro (Hayes, 2015). Interestingly, visual inspection of the plots showed signs of a potential moderation effect, as the slopes differed substantially for the three levels of mother-child attachment security. Higher levels of attachment security (+1*SD*) exhibited a negative correlation between DISC and depression severity, whereas the relationship was positive for the 'low' levels of IPPA. Accordingly, this suggests that the relationship between discrepancy scores, attachment security and depression severity may be more complex than what was captured by the hierarchical regression analysis.
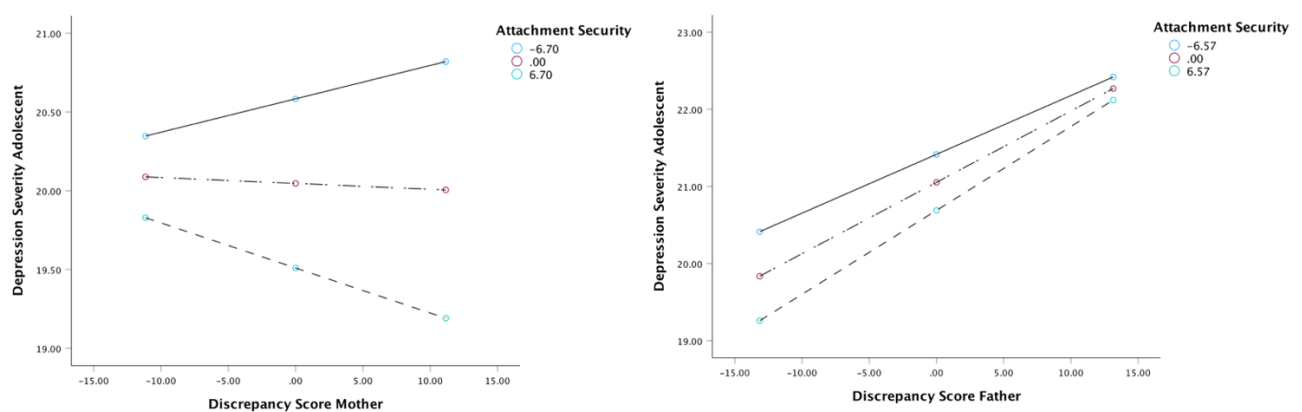

Figure 3. Effect of Discrepancy scores on Adolescent Depression Severity at three levels (low, moderate, high) of Attachment Security for mother-child (left) and father-child (right) pairs.
Note: Discrepancy scores were mean-centered and therefore x-axis values represent residuals above and below the mean.

Exploratory Analyses

We conducted the moderation analysis again with attachment security as a categorical variable (low, moderate, high levels of attachment security). This exploratory analysis was done to examine the effect of IPPA more closely since the moderation plots with three levels of IPPA provided support for a possible moderation effect. We used the Hayes' PROCESS macro (Hayes, 2015), as this can handle categorical data better, e.g. dummy coding and perform bootstraps. The full model of gender, age, discrepancy scores, (categorical) attachment security and the interaction effect to predict depression severity was not statistically significant, neither for mother-child ($R_M^2 = 0.205$, $F_M (7, 26) = .957$, $p = .482$), nor for father-child pairs ($R_F^2 = .418 =$, $F_F (7,18) = 1.843$, $p = 0.140$). This indicates that within our study, the relationship between DISC, (categorical) IPPA and PHQ-9 is also not established.

Finally, we also conducted an independent samples t-test to examine the difference on depression severity between the group of adolescents of which both parents participated in the study ($M = 21.04$, $SD = 4.07$, $n = 26$) and the group of which the father did not participate ($M = 16.88$, $SD = 5.64$, $n =$

8). The two-tailed t-test with unequal variances revealed a non-significant difference between the two groups (t(9.36) = -1.937, p = 0.083).

Discussion

In this study, we used a mix of qualitative and quantitative approaches with the aim of exploring the following; 1) qualitatively identify the causal beliefs of (clinically referred) adolescent's depression as reported by adolescents themselves and by their parents, and examine the discrepancies between the reports of mother-child and father-child pairs, and 2) quantitatively assess the relation between these discrepancies and adolescent's depression severity, and examine whether this relationship is moderated by adolescent's attachment security with the parents. The findings and implications per hypothesis are discussed below.

Thematic Causal Beliefs and Within-Family Discrepancies

The first research question had no specific hypotheses as it was mainly of explorative nature. However, our expectation that causal beliefs of adolescents and parents would show a discrepancy was supported. Firstly, our thematic analysis successfully revealed 12 main themes regarding causal beliefs on adolescent's depression reported by adolescents and their parents (in order of reporting frequency): characteristics of the child, social issues, stressful family context, school, intergenerational factors, stressful life event, chronic stress in context outside of the family, puberty, bewilderment, cumulative effect, media use, and experienced lack of support and understanding. These findings were in line with previous literature on depression etiology and similar studies on causal beliefs (Midgley et al, 2017; Hankin et al., 2006; Shapero et al., 2014; Klaufus et al., 2022). Secondly, a comparison between reports of parents and adolescents on their causal beliefs revealed that discrepancies were overall high, with both mother-child and father-child discrepancy levels around 70%, with mother-child levels slightly lower. This finding indicated that the agreement between parents and adolescents was very low, and as expected, the perspectives between parents and adolescent on the causal beliefs differed greatly. Moreover, we found a variation in the level of agreement among themes, such that the frequently mentioned themes such as social issues and characteristics of the child had higher agreement levels among families in comparison to themes such as puberty or media usage. Nevertheless, the agreement between parent-child reports were overall low, with mother-child agreement ranging between 0%-28% and father-child agreement ranging between 0%-21% among themes. The higher agreement rate between mother-child reports might be explained partly by the fact that mothers reported on average more themes compared to fathers. Additionally, the higher number of reported causal beliefs by mothers aligns with previous literature, which suggests that mothers generally have better insight and are more involved in the child's psycho-social development than fathers (Day & Padilla-Walker, 2009).

We found that the primary causal beliefs for adolescents' depression (by adolescent reports) were centered around relational issues and stress within the family context. As such, most interviewed adolescents linked their depression to problems within the social context such as a pressure to fit in a group or getting rejected. This aligns with previous literature that social relationships play a vital role during adolescence, and problems in this area can cause significant distress for young people (Shapero et al., 2014). This was also the theme which showed the highest agreement rate among father-child and mother-child reports. Stress within the family context, such as family conflict or divorce was also reported frequently and showed relatively higher agreement among families.

Next to environmental factors, the majority of parents reported a causal link between the characteristics of their child, such as negative self-image and internalizing symptoms to depression. Adolescents also frequently reported this theme and even blamed themselves for their depressive feelings by attributing their own characteristics to their depressive symptoms. Consistent with the cognitive dissonance model (Cooper, 2007), this inner conflict and high tendency to show guilt, could be recognized as vulnerability factors for the development of depression. However, these characteristics often overlap with depression symptomatology, making it challenging to discern whether they existed before the onset of depression. Nevertheless, these findings fit well within the network theory of depression, which proposes that symptoms (e.g. also causal factors) interact with each other in complex dynamical systems by reciprocally reinforcing or even precipitating one another within a network (Fried, 2017).

Interestingly, and different from previous literature, we found a significant emphasis on school related problems, such as the pressure to perform to be linked to the depressive symptoms of the adolescent, which also had a relatively high agreement among mother-child and father-child reports. This theme was frequently mentioned as a contributing stressor intensifying the adolescent's depressed mood, rather than a direct causes of depression. This observation again aligns with the interconnectedness proposed in the network theory of depression (Fried, 2017), suggesting that multiple stressors may interact and mutually reinforce depressive symptoms. While depressive symptoms are already commonly associated with poor academic performance (Lewinsohn, 1998), we found that poor performances and a pressure to perform can also be considered as one of the strengthening factors in depression, potentially serving as a predictor. As such, this insight highlights the importance of acknowledging the influence of school-related stressors (i.e. pressure to preform, performance anxiety) on adolescent depression in future studies, an area that has been underexplored in earlier research.

One possible explanation for the high discrepancy scores observed in our study is related to our sample characteristics. Hypothetically, one can argue that adolescents (and their families) in therapy will have greater awareness of various aspects of depression and reach a consensus on the root causes of depression, for instance due to the use cognitive restructuring. However, a larger part of our clinical sample had only recently received a diagnosis and was in the primary stages of therapy, which

may have contributed to the lack of consensus between parents and adolescents. Nonetheless, we perceive this as a strength of our study since evaluating the causal beliefs at this stage can offer insights into the initial beliefs and approaches of both parents and adolescents before a reformulation in therapy.

Nevertheless, the findings and the 'degree of discrepancy' in this study should be interpreted with caution as it was an exploratory approach to a new concept in the field of discrepancy research. One could argue that the discrepancy score may not have been exhaustive enough, and criticize the accuracy of the measure in terms of its validity and reliability. Moreover, it is uncertain whether complete agreement between parents and adolescents would predict better outcomes, or whether it is preferred by adolescents. As such, some studies suggest that a certain level of agreement may suffice, as discrepancies rather than agreement between parent-child might be the norm (De Los Reyes et al., 2012; Hughes & Gullone, 2010). Furthermore, it should be noted that we did not use a specific cut-off point for discrepancy scores in this study, but instead used relative measures from the sample to categorize discrepancies as low and high.

Moreover, despite the pioneering approach, these findings were limited as we did not include interview questions assessing how adolescents perceive these discrepancies and whether they expect any differences between their own reports and parent's reports on causal beliefs and vice versa for the parents. This aspect could not be given enough emphasis in the study given the limited scope and resources, though it would aid the understanding and provide more meaning to the parent-adolescent discrepancies in future research. As such, next to than examining differences in individual perspectives on causal beliefs, we believe that understanding also whether a parent can appreciate and empathize with an adolescent's perspective, despite having divergent views, may provide more fruitful findings. This understanding could be key in navigating the differences in perceptions regarding depression and its causes, potentially offering valuable guidance for future studies and interventions.

Depression Severity not Predicted by Parent-Adolescent Discrepancies

Contrary to our second hypothesis, discrepancy in causal beliefs did not predict depression severity of the adolescent, neither for mother-child nor for father-child pairs. The current results did also not support the expected moderation effect of attachment security. Nevertheless, inspection of the interaction plots suggested a more intricate relationship between discrepancy scores, attachment security, and depression severity than the statistical test results. Such that, the mother-child plot showed signs that higher levels of attachment security was associated with a negative correlation between discrepancy scores and depression severity, whereas a positive relationship emerged at lower levels of attachment security. However, these observations were not substantiated by the hierarchical regression analyses nor the exploratory analyses using attachment security as a categorical variable. Also, this observation might be attributable to the highly zoomed-in scale that was presented.

More interestingly, our results did neither show any significant relationship between attachment security and depression severity, although this would be expected given previous clinical and theoretical evidence (Spruit et al., 2020). Though not significant, it seems important to note that findings are different for mother-child compared to fathers-child pairs, with continually an emphasis on mother-child relationship. As such, the thematic analysis revealed relatively higher agreement scores (lower discrepancies) for mother-child pairs and the potential moderation effect in the plots was only visible for mother-child-pairs. These findings align with existing literature, which underscores the importance of maternal factors, over paternal ones, in relation to child mental health. Accordingly, it appears that the mental health of the mother in particular, significantly contributes to variances in parent-child discrepancies (Hughes & Gullone, 2010).

Several possible explanations may account for the lack of significant findings in this study. First and foremost, the limited sample size might have reduced the statistical power to detect significant effects, thus impeding the identification of meaningful relationships between the variables. This might explain the findings from the visual inspection of plots as well. Future research employing larger sample sizes is recommended to address this limitation and potentially uncover significant associations that might have been obscured in this study.

Second, there is naturally the possibility of no actual relationship between parent-adolescent discrepancies and depression severity. However, the relationship may be more intricate than we initially explored and hidden confounders or different underlying mechanisms could be obscuring the true effect. As such, in this study design we did not account for other potentially influential factors (confounders) that could have contributed to the relationship between parent-adolescent discrepancies and depression severity. For instance, family conflict, poor family functioning and parental depression and stress are factors known for influencing and (partly) explaining the variance in discrepancies in other multi-informant studies (Hughes & Gullone, 2010; Vacaru, Beijers, & de Weerth, 2022). The depression of the parent, specifically the mother's depression has been shown continually to be associated with discrepancies in parent-child reports of depression severity as it can introduce bias in reporting. Moreover, child-related factors such as the adolescent's age, race, clinical status, and family intactness are also significantly related to the level of discrepancies (Korelitz & Garber, 2016). These confounders or other contextual factors might be critical in understanding the interplay between discrepancies, attachment security, and depression severity. It is recommended that future research incorporates these additional factors to provide a more comprehensive understanding of the underlying mechanisms.

Another methodological aspect and recommendation for future studies is related to the inclusion of parental reports on the severity of adolescent's depression rather than only using self-reported measures by the adolescent. Previous studies already pointed out that parents and adolescents often show discrepancies on the very existence and severity of internalizing symptoms (Baumgartner et al., 2020). Future studies could include this measure as well and examine whether discrepancies in

causal beliefs are associated to discrepancies in depression severity. This would aid our understanding on the discrepancies in causal beliefs and examine whether the discrepancies have an underlying mechanism associated to depression stigma or depression literacy (Johnco & Rapee, 2018).

Limitations

Several limitations of our study must be acknowledged as well. First, the use of the IPPA-V questionnaire, a shortened version of the IPPA, may not have sufficiently covered all facets of attachment security, thereby potentially limiting a more comprehensive understanding of attachment styles and behaviors. Previous literature has noted that attachment styles, e.g. either anxious or avoidant, might present internalizing problems differently (Brumariu and Kerns, 2010). In this study we did not take that into account, nor did we focus on the different dimensions of the IPPA, e.g. alienation, communication and trust. Future research should consider utilizing the full IPPA or alternative measures of parent-child attachment including attachment styles.

Another limitation concerns our methodology. The use of a sub + main themes approach for discrepancy scores may have introduced unnecessary complexity, possibly hindering the detection of significant outcomes. Future research could consider adopting a more simple (main themes only) approach or streamlined analytical approaches such as polynomial regression analyses used for discrepancies as advised by Laird & De Los Reyes (2012).

Conclusion

The present study aimed to investigate the associations between parent-adolescent discrepancies in perceptions of the causes (i.e. causal beliefs) of the adolescent's depression and depression severity, as well as exploring the potential moderating role of attachment security in this relationship. Central to the reported causal beliefs were relational issues, stressful family context, and inherent characteristics of the adolescent. Significant discrepancies in causal beliefs between parents and adolescents were observed. Despite the initial hypotheses, the findings did not reveal significant associations between parent-adolescent discrepancy levels and depression severity, nor did they indicate significant moderation effects of attachment security. Nevertheless, this exploratory study was one of the first to examine discrepancies in reports of causal beliefs by both adolescents and parents and also the first to hypothesize a link between discrepancies and adolescent depression severity. The importance of our study lies in its potential to provide valuable insights for clinical practice by examining *both* parents' and adolescents' causal beliefs of depression. This approach allowed us to gain a more comprehensive understanding of the role of family dynamics within families with a depressed adolescent. However, the complexity of these relationships, as indicated by the visual inspection of interaction plots and the potential influence of the limitations, underscores the need for further investigation. Future studies should consider using larger samples, incorporate additional potential confounding factors, examine these results next to parent-child discrepancies of depression

symptomology, and benefit from different methodologies. This will ultimately contribute to a more nuanced understanding of how discrepancies in parent-adolescent relationships may influence adolescent depression and inform potential interventions to promote mental health in this population.

Finally, these findings also offer useful clinical implications. Firstly, the importance of acknowledging and addressing potential discrepancies in parent-adolescent causal beliefs about depression in practice is highlighted. While these discrepancies may not directly correlate with depression severity, their existence can signal communication gaps or lack of mutual understanding, potentially hindering effective management and treatment of adolescent depression in families. As such, by gaining a deeper understanding of these dynamics, mental health professionals could be better equipped to navigate and mediate these differences, promoting a more empathetic and unified approach to managing adolescent depression. This could involve specific therapeutic strategies that aim to reduce discrepancies and improve communication, such as family-focused therapy or interventions that enhance parental empathy and understanding.

Secondly, the prominence of school-related stressors and problematic relational factors in our findings emphasizes the importance of integrating a comprehensive approach to address these external factors in managing adolescent depression. Clinicians should not only focus on the individual adolescent but also consider the wider socio-academic context they operate in, including promoting initiatives to enhance academic support structures or facilitating discussions to alleviate academic pressures.

To conclude, while further research is needed, this study highlights the significance to take into account both adolescent's and parent's causal beliefs, alongside the wider socio-academic context, in tailoring robust and effective strategies to address adolescent depression.

APPENDIX A

a. Interview questions for adolescents (adjusted version for parents)

1. What did you think of today?

2. To what extent do the conversations you had with your parents today occur in everyday life? Are the conversations at home just like today's conversations?

3. How did you feel about seeing the conversation with your parent again?

4. In this study we would like to get an idea of how sadenss/depressive complaints affect young people's lives. That's why we want to ask you some questions about this: When do you think your complaints started?

5. Have you had several depressive episodes? If not, have you had several periods of low mood?

6. Have you (previously) followed treatments for these complaints? And yes, how often and what kind of treatment?

7. (unprompted question) One of the things we are interested in is what could be a possible cause of depression or gloominess. What do you think could be the cause or causes of your complaints? You can name whatever you think.

8. (prompted question) Some possible causes have already emerged from previous research, namely: [show CAUSE CARD]. If you see this in front of you now, do you see one or more things that might also be a cause for you?

a. Being a victim of something, experienced a stressful event

b. Few friends, being rejected by others

c. School problems

d. Family related problems, divorce, loss/illness of a loved one

e. Physical pain, illness

f. Something that is in you such as your character or your genes / heredity

9. What do you think your parents see as a possible cause or causes of your complaints?

10. You came to our research via the GGZ.

a. Have you been in treatment since the diagnostic interview?

i. [IF YES]: Is that still going on?

ii. How many sessions have you had?

iii. What kind of treatment?

iv. Individually or also together with your parents?

b. Are you currently taking any medication?

i. [IF YES]: What kind of medication, how often per day and in what dosages do you use it?

11. Thanks for answering the questions! You have done a lot of different things and tasks today. Do you have any tips or feedback for us to improve this day?

b.   coding tree
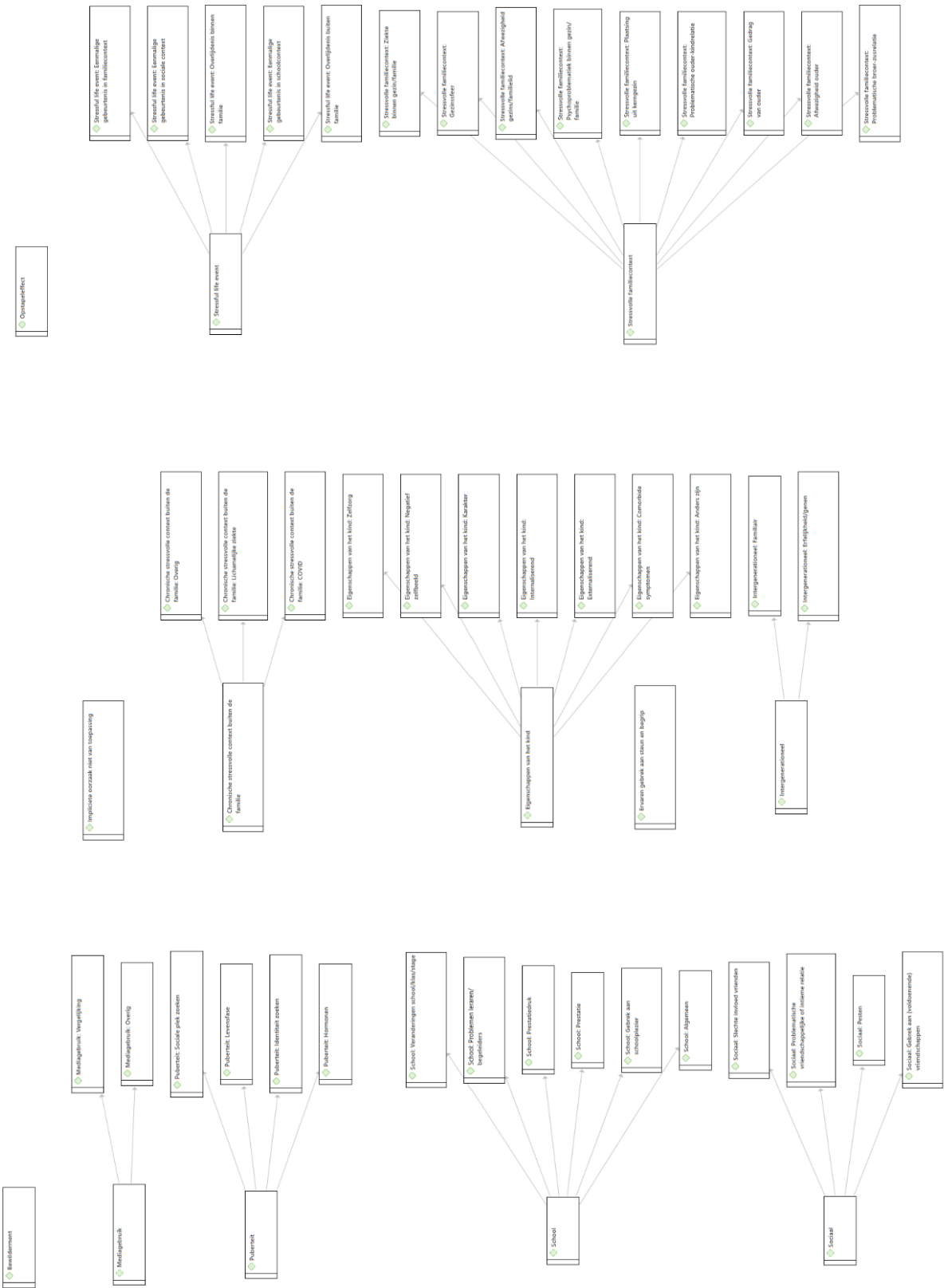
References

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. Sage.

AmberScript. (2021). AmberScript transcription and translation software. Retrieved from https://www.amberscript.com/

Armsden, G. C., McCauley, E., Greenberg, M. T., Burke, P. M., & Mitchell, J. R. (1990). Parent and peer attachment in early adolescent depression. *Journal of Abnormal Child Psychology*, *18*(6), 683-697. https://doi.org/10.1007/bf01342754

Baines, T., & Wittkowski, A. (2012). A systematic review of the literature exploring illness perceptions in mental health utilising the self-regulation model. *Journal of Clinical Psychology in Medical Settings*, *20*(3), 263-274. https://doi.org/10.1007/s10880-012-9337-9

Baumgartner, N., Häberling, I., Emery, S., Strumberger, M., Nalani, K., Erb, S., Bachmann, S., Wöckel, L., Müller-Knapp, U., Rhiner, B., Contin-Waldvogel, B., Schmeck, K., Walitza, S., & Berger, G. (2020). When parents and children disagree: Informant discrepancies in reports of depressive symptoms in clinical interviews. *Journal of Affective Disorders*, *272*, 223-230. https://doi.org/10.1016/j.jad.2020.04.008

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models Usinglme4. *Journal of Statistical Software*, *67*(1). https://doi.org/10.18637/jss.v067.i01

Bowlby, J. (1969). Attachment and Loss, Vol. 1: Attachment. Attachment and Loss. New York: Basic Books.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brown, C., Battista, D. R., Sereika, S. M., Bruehlman, R. D., Dunbar-Jacob, J., & Thase, M. E. (2007). Primary care patients' personal illness models for depression: Relationship to coping behavior and functional disability. *General Hospital Psychiatry*, *29*(6), 492-500. https://doi.org/10.1016/j.genhosppsych.2007.07.007

Brumariu, L. E., & Kerns, K. A. (2010). Parent–child attachment and internalizing symptoms in childhood and adolescence: A review of empirical findings and future directions. *Development and Psychopathology*, *22*(1), 177-203. https://doi.org/10.1017/s0954579409990344

Bhui, K., & Bhugra, D. (2002). Explanatory models for mental distress: Implications for clinical practice and research. *British Journal of Psychiatry*, *181*(1), 6-7. https://doi.org/10.1192/bjp.181.1.6

Cooper, J. (2007). Cognitive dissonance: Fifty years of a classic theory. Los Angeles: Sage Publications.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Chang, C. J., Ohannessian, C. M., Krauthamer Ewing, E. S., Kobak, R., Diamond, G. S., & Herres, J. (2019). Attachment and parent-adolescent discrepancies in reports of family functioning among suicidal adolescents. *Journal of Child and Family Studies*, *29*(1), 227-236. https://doi.org/10.1007/s10826-019-01566-7

Day, R. D., & Padilla-Walker, L. M. (2009). Mother and father connectedness and involvement during early adolescence. *Journal of Family Psychology, 23(6),* 900–904. https://doi.org/10.1037/a0016438

De Los Reyes, A., Ohannessian, C. M., & Racz, S. J. (2018). Discrepancies between adolescent and parent reports about family relationships. *Child Development Perspectives*, *13*(1), 53-58. https://doi.org/10.1111/cdep.12306

Fried, E. (2017). Moving forward: How depression heterogeneity hinders progress in treatment and research. *Expert Review of Neurotherapeutics*, *17*(5), 423-425. https://doi.org/10.1080/14737175.2017.1307737

Falgares, G., Marchetti, D., De Santis, S., Carrozzino, D., Kopala-Sibley, D. C., Fulcheri, M., & Verrocchio, M. C. (2017). Attachment styles and suicide-related behaviors in adolescence: The mediating role of self-criticism and dependency. *Frontiers in Psychiatry*, *8*. https://doi.org/10.3389/fpsyt.2017.00036

Fletcher, S., & Islam, M. Z. (2018). Comparing sets of patterns with the Jaccard index. *Australasian Journal of Information Systems*, *22*. https://doi.org/10.3127/ajis.v22i0.1538

Gullone, E., & Robinson, K. (2005). The inventory of parent and peer Attachment?Revised (IPPA-R) for children: A psychometric investigation. *Clinical Psychology & Psychotherapy*, *12*(1), 67-79. https://doi.org/10.1002/cpp.433

Hair, E. C., Moore, K. A., Garrett, S. B., Ling, T., & Cleveland, K. (2008). The continued importance of quality parent–adolescent relationships during late adolescence. *Journal of Research on Adolescence*, *18*(1), 187-200. https://doi.org/10.1111/j.1532-7795.2008.00556.x

Hankin, B. L. (2006). Adolescent depression: Description, causes, and interventions. *Epilepsy & Behavior*, *8*(1), 102-114. https://doi.org/10.1016/j.yebeh.2005.10.012

Hankin, B. L., & Abela, J. R. (2005). *Development of psychopathology: A vulnerability-stress perspective*. SAGE Publications.

Hou, Y., Benner, A. D., Kim, S. Y., Chen, S., Spitz, S., Shi, Y., & Beretvas, T. (2020). Discordance in parents' and adolescents' reports of parenting: A meta-analysis and qualitative review. *American Psychologist*, *75*(3), 329-348. https://doi.org/10.1037/amp0000463

IBM Corp. (2020). IBM SPSS Statistics for Macintosh (Version 27.0) [Computer software]. IBM Corp.

Janssen, L. H., Kullberg, M. J., Verkuil, B., Van Zwieten, N., Wever, M. C., Van Houtum, L. A., Wentholt, W. G., & Elzinga, B. M. (2020). Does the COVID-19 pandemic impact parents' and adolescents' well-being? An EMA-study on daily affect and parenting. *PLOS ONE*, *15*(10), e0240962. https://doi.org/10.1371/journal.pone.0240962

Johnco, C., & Rapee, R. M. (2018). Depression literacy and stigma influence how parents perceive and respond to adolescent depressive symptoms. *Journal of Affective Disorders*, *241*, 599-607. https://doi.org/10.1016/j.jad.2018.08.062

Kenny, D. A., & Kashy, D. A. (2011) Dyadic data analysis using multilevel modeling. *Handbook of Advanced Multilevel Analysis*. https://doi.org/10.4324/9780203848852.ch17

Kobak, R., Abbott, C., Zisk, A., & Bounoua, N. (2017). Adapting to the changing needs of adolescents: Parenting practices and challenges to sensitive attunement. *Current Opinion in Psychology*, *15*, 137-142. https://doi.org/10.1016/j.copsyc.2017.02.018

Kobak, R., & Bosmans, G. (2019). Attachment and psychopathology: A dynamic model of the insecure cycle. *Current Opinion in Psychology*, *25*, 76-80. https://doi.org/10.1016/j.copsyc.2018.02.018

Korelitz, K. E., & Garber, J. (2016). Congruence of parents' and children's perceptions of parenting: A meta-analysis. *Journal of Youth and Adolescence*, *45*(10), 1973-1995. https://doi.org/10.1007/s10964-016-0524-0

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9. *Journal of General Internal Medicine*, *16*(9), 606-613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals*, *32*(9), 509-515. https://doi.org/10.3928/0048-5713-20020901-06

Kullberg, M. J., Buisman, R. S., Van Schie, C. C., Pittner, K., Tollenaar, M., Van den Berg, L. J., Alink, L. R., Bakermans-Kranenburg, M. J., & Elzinga, B. M. (2023). Linking internalizing and externalizing problems to warmth and negativity in observed dyadic parent–offspring communication. *Family Relations*. https://doi.org/10.1111/fare.12847

Lamers, F., Jonkers, C. C., Bosma, H., Penninx, B. W., Knottnerus, J. A., & Van Eijk, J. T. (2008). Summed score of the patient health questionnaire-9 was a reliable and valid method for depression screening in chronically ill elderly patients. *Journal of Clinical Epidemiology*, *61*(7), 679-687. https://doi.org/10.1016/j.jclinepi.2007.07.018

Laird, R. D., & De Los Reyes, A. (2012). Testing informant discrepancies as predictors of early adolescent psychopathology: Why difference scores cannot tell you what you want to know and how polynomial regression may. *Journal of Abnormal Child Psychology*, *41*(1), 1-14. https://doi.org/10.1007/s10802-012-9659-y

Le, H. (2021). *The Relationship between Attachment and Adolescent Depression: The Role of Emotion Regulation and Cultural Context* [Doctoral dissertation]. https://era.ed.ac.uk/bitstream/handle/1842/38776/Le2022.pdf?sequence=1&isAllowed=y

Leventhal, H., Diefenbach, M., & Leventhal, E. A. (1992). Illness cognition: Using common sense to understand treatment adherence and affect cognition interactions. *Cognitive Therapy and Research*, *16*(2), 143-163. https://doi.org/10.1007/bf01173486

Lewinsohn, P. (1998). Major depressive disorder in older adolescents: Prevalence, risk factors, and clinical implications. *Clinical Psychology Review*, *18*(7), 765-794. https://doi.org/10.1016/s0272-7358(98)00010-5

Mcann, T. V., Lubman, D. I., & Clark, E. (2011). The experience of young people with depression: A qualitative study. *Journal of Psychiatric and Mental Health Nursing*, *19*(4), 334-340. https://doi.org/10.1111/j.1365-2850.2011.01783.x

McLeod, B. D., Weisz, J. R., & Wood, J. J. (2007). Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review*, *27*(8), 986-1003. https://doi.org/10.1016/j.cpr.2007.03.001

Midgley, N., Ansaldo, F., & Target, M. (2014). The meaningful assessment of therapy outcomes: Incorporating a qualitative study into a randomized controlled trial evaluating the treatment of adolescent depression. *Psychotherapy*, *51*(1), 128-137. https://doi.org/10.1037/a0034179

Midgley, N., Parkinson, S., Holmes, J., Stapley, E., Eatough, V., & Target, M. (2016). "Did I bring it on myself?" an exploratory study of the beliefs that adolescents referred to mental health services have about the causes of their depression. *European Child & Adolescent Psychiatry*, *26*(1), 25-34. https://doi.org/10.1007/s00787-016-0868-8

Nelemans, S. A., Branje, S. J., Hale, W. W., Goossens, L., Koot, H. M., Oldehinkel, A. J., & Meeus, W. H. (2016). Discrepancies between perceptions of the parent–adolescent relationship and early adolescent depressive symptoms: An illustration of polynomial regression analysis. *Journal of Youth and Adolescence*, *45*(10), 2049-2063. https://doi.org/10.1007/s10964-016-0503-5

Nunstedt, H., Nilsson, K., Skärsäter, I., & Kylén, S. (2012). Experiences of major depression: Individuals' perspectives on the ability to understand and handle the illness. *Issues in Mental Health Nursing*, *33*(5), 272-279. https://doi.org/10.3109/01612840.2011.653038

Pinquart, M. (2016). Associations of parenting dimensions and styles with internalizing symptoms in children and adolescents: A meta-analysis. *Marriage & Family Review*, *53*(7), 613-640. https://doi.org/10.1080/01494929.2016.1247761

Raja, S. N., McGee, R., & Stanton, W. R. (1992). Perceived attachments to parents and peers and psychological well-being in adolescence. *Journal of Youth and Adolescence*, *21*(4), 471-485. https://doi.org/10.1007/bf01537898

Reichart CG, Wals M, Hillegers M. Vertaling K-SADS. *HC Rümke Groep, Utr.* 2000.

Restifo, K., & Bögels, S. (2009). Family processes in the development of youth depression: Translating the evidence to treatment. *Clinical Psychology Review*, *29*(4), 294-316. https://doi.org/10.1016/j.cpr.2009.02.005

Schielzeth, H. (2010). Simple means to improve the interpretability of regression coefficients. *Methods in Ecology and Evolution*, 1(2), 103-113.

Shapero, B. G., Black, S. K., Liu, R. T., Klugman, J., Bender, R. E., Abramson, L. Y., & Alloy, L. B. (2013). Stressful life events and depression symptoms: The effect of childhood emotional abuse on stress reactivity. *Journal of Clinical Psychology*, *70*(3), 209-223. https://doi.org/10.1002/jclp.22011

Vivona, J. M. (2000). Parental attachment styles of late adolescents: Qualities of attachment relationships and consequences for adjustment. *Journal of Counseling Psychology*, *47*(3), 316-329. https://doi.org/10.1037/0022-0167.47.3.316

Yap, M. B., Pilkington, P. D., Ryan, S. M., & Jorm, A. F. (2014). Parental factors associated with depression and anxiety in young people: A systematic review and meta-analysis. *Journal of Affective Disorders*, *156*, 8-23. https://doi.org/10.1016/j.jad.2013.11.007