

Understanding the Interactive Effect of Father Warmth and Sex on Adolescent Conduct Problems

Cai Jona Lange

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University of Utrecht

Clinical Child and Adolescent Psychology

Supervisor: Nicole Walasek, PhD

Second Grader: Dr. Juliëtte Liber

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Abstract

The present study aimed to examine the influence of father warmth on conduct problems among adolescents in a socioeconomically diverse sample, while taking into account the moderating effect of sex and controlling for socioeconomic status (SES). We hypothesize that father warmth would have an impact on the occurrence of conduct problems in adolescents, with sex acting as a moderator in this relationship. This study uses existing data from a recent study conducted by Young et al. (2022). A total of 681 adolescents were initially recruited from a middle school and five after-school clubs, and after applying exclusion criteria, a final sample of 618 participants was included. The adolescents completed the Parental Bonding Inventory, while their respective teachers provided ratings using the Strengths and Difficulties Questionnaire to assess the children's behaviour. Contrary to our hypothesis, we did not find support for the proposed relationship, possibly due to a limited range of variability in the data. In addition to examining the overall score of the Strengths and Difficulties Questionnaire, which also did not support our hypothesis, we conducted a further exploratory analysis to investigate the potential buffering effect of father warmth on current stress. We found support for this relationship and propose that father warmth may serve as a protective factor against stress in unpredictable and violent environments.

Keywords: Father Warmth, Conduct Problems, Sex, Socioeconomic Status, Current Stress

Understanding the Interactive Effect of Father Warmth and Sex on Adolescent Conduct Problems

Historically, research on child development and education has primarily focused on mothers due to traditional gender roles that view women as the primary caregivers and men as the primary providers for the family. However, in recent times, family dynamics have been shifting, and fathers are becoming more involved in childcare, particularly in western countries (Pattnaik, 2013). Although mothers continue to be the primary caregivers for most families, there is a growing trend for fathers towards more involved in their children's lives.

Despite this trend, fathers are overall less involved in childcare compared to mothers. According to Jang & Zippay (2011), fathers are generally less involved due to a variety of factors: firstly, due to long working hours, which are more commonly experienced by fathers than by mothers. Secondly, due to lack of workplace support for balancing work and family responsibilities. This lack of support may be due to workplace policies that prioritize productivity and profit over employee well-being. Finally, fathers may struggle to achieve a healthy work-life balance, as they may feel pressure to prioritize their work responsibilities over their family commitments. While some workplaces are beginning to offer more support for fathers who want to be involved in child care, there is still much work to be done to create more family friendly workplaces for all parents (Jang & Zippay, 2011). Moreover, as divorce rates and rates of children born outside of marriages have been increasing, while the overall rate of marriage has been decreasing, distinct family dynamics are emerging that have not been present previously (Ortiz-Ospina & Roser, 2020). This offers a unique opportunity to study the effects of fathers on child development as the role of fathers in children's lives becomes more prominent and complex. In doing so, it is important to acknowledge the limitations that still exist and the need to create more family-friendly workplaces for all parents (Jang & Zippay, 2011)

To understand the impact of fathers on children, it is important to consider both the benefits of having a present father and the consequences of father absence. Looking at both sides of the issue allows us to understand the overall impact on child development. According to de Haan et al. (2012), there are two main tasks for parents. The first is to create rules and boundaries and to enforce them. The second one is to create an environment for children that is safe, warm, and nurturing. It is useful to study how father absence and presence interferes with these two goals. Children with an absent father may lack a role model or another adult who educates and cares for them while growing up. Father absence has been linked to a range of internalizing and externalizing problems in children (Deklyen et al., 1998; Silva & Sandström, 2018; Yang et al., 2022). It can be linked to an increase in conduct problems, higher school dropout, aggression, and deviance (Silva & Sandström, 2018; Yang et al., 2022). Conduct problems can be defined as repetitive and consistent patterns of violations of social rules and norms (Silva & Sandström, 2018). However, research has shown that even for non-

residential fathers, there can be a positive effect on child development as long as the interactions are caring and positive (Lee et al., 2018).

When fathers are present, their parenting behaviour can significantly affect their child's cognitive and social-emotional development. Negative parenting practises, such as yelling, insults, and criticism without recognition of accomplishments, as well as lacking support are associated with internalising and externalising problems such as trauma, depression, or aggressive behaviour (Hipwell et al., 2008; Lee et al., 2018; Okorn et al., 2022; Stiles, 2022; Yoon et al., 2018). Research suggests that negative parenting methods, such as harsh discipline or neglect, can have a greater impact on children's bad behaviour than positive parenting methods such as kindness and praise have on reducing bad behaviour (Baumeister, as cited in Yang et al., 2022). Positive parenting, that is, being emotionally available and supportive, has been shown to promote the development of mature and adjusted adolescents, resulting in less aggression and fewer conduct problems (Guo et al., 2021; Yang et al., 2022). Additionally, the quality of the interaction rather than the duration of time spent appears to be the most important factor for positive child development (Veneziano, 2003; Yoon et al., 2018). Fathers have a unique effect on skill development in children, such as teaching turn taking, how to get along with peers, controlling aggressive behaviour, and affect regulation (Deklyen et al., 1998; Yang et al., 2022; Yoon et al., 2018), indicating the importance of paternal involvement. This is an important insight considering the increase in divorce and separation rates (Ortiz-Ospina & Roser, 2020).

An important part of positive parenting is parental warmth, that is the extent to which a parent reacts warmly and reassuringly to the needs of their children (Yoon et al., 2018). Parental warmth has mostly been studied in combination with other variables, such as parental harshness. Parental harshness refers to cold, rude, or hostile reactions toward children (Park & Dotterer, 2018). Although parental harshness and warmth are independent dimensions, they are typically negatively correlated. The higher the level of parental warmth is, the lower parental harshness tends to be (Hipwell et al., 2008). A harsh parenting style and low parental warmth can create the grounds for escalation of child behaviour that, if not properly addressed, might set the standard for future relationships of the child (Silva & Sandström, 2018). Research on parental warmth has focused on maternal warmth due to the mother's traditional role as primary caregiver. Further, it has shown that mother warmth is positively associated with a secure attachment style and emotional stability in younger children. Father warmth on the other hand is rather understudied although research agrees on its positive effects (de Haan et al., 2012; Lee et al., 2018). Parental warmth in general has been associated with a variety of positive effects on child development. It has been associated with better adjustment to changes in daily life and across life stages (e.g., from childhood to adolescence), with overall better mental health, with prosocial behaviour and attitudes, and with an increased willingness to disclose feelings and thoughts (Cohrdes & Göbel, 2022; Klevens, 2014; Lee et al., 2018; Silva & Sandström, 2018). Parental warmth seems to have a similar effect across cultures and could be seen as a protective factor against severe

externalizing and internalizing problems (Guo et al., 2021; Hillekens et al., 2020; Park & Dotterer, 2018). These benefits of parental warmth appear to last across the lifespan and are not limited to childhood (Rothenberg et al., 2020).

Moreover, lack of parental warmth is related to internalising and externalising problems, such as low self-control, depression, emotional detachment, and poor relationship quality (Lee et al., 2018; Rothenberg, Lansford, Al-Hassan, et al., 2020; Silva & Sandström, 2018). Further, it has been linked to an increase in conduct problems (Hipwell et al., 2008; Lowe & Dotterer, 2013; Wang & Kenny, 2014). Research has shown that conduct problems and lack of warmth might be mutually reinforcing. Higher conduct problems might decrease parental warmth over time and increase parental harshness. Parents may increase their parental harshness to control more difficult children, which as a result may reinforce conduct problems and decrease parental warmth (Hipwell et al., 2008; Kim et al., 2003). However, this link has yet to be studied in an ethnically and economically diverse sample (Wang & Kenny, 2014; Yoon et al., 2018).

At present we know relatively little about the extent to which the relationship between father warmth and conduct problems differs for boys and girls. Especially for girls, little is known about how low father warmth affects conduct problems (Hipwell et al., 2008; Kim et al., 2003). Research on differences between father-son and father-daughter relationships found mixed results. Previous studies suggest that there is no consistent difference between boys and girls in terms of the amount of time fathers spend with them, the attention they give to them, their interaction style with each gender, the quality of the relationship, or the level of harshness in their parenting. Further, research also found mixed results in how likely boys and girls are prone to develop conduct problems overall (de Haan et al., 2012; Deklyen et al., 1998; Hipwell et al., 2008; Kim et al., 2003). Some studies found no gender differences (de Haan et al., 2012).

In summary, existing research has mostly focused on the relationship between children and their mothers, or parental warmth in general, but not on fathers and paternal warmth. Furthermore, extensive research focusses on parenting behaviour in general, with variables such as warmth and harshness combined. Little research directly and solely looked at the effect of father warmth on conduct problems. When father warmth is studied, there is a lack of literature on how the sex of the child shapes the relationship between father warmth and conduct problems. Most research on parental warmth has been conducted on western, educated, industrialized, rich, and democratic (WEIRD) samples, resulting in economically and ethnically similar participants (Henrich et al., 2010; Rothenberg, Lansford, Bornstein, et al., 2020). This decreases the generalizability of the findings and leaves a gap as to whether these findings are also applicable to different cultures or families of lower SES.

This thesis aims to fill these gaps. The present study examines relationship between father warmth and conduct problems. Specifically, I will focus on whether this relationship is moderated by

sex, controlling for socioeconomic status. The literature suggest that there is a link between SES and conduct problems (Burcher et al., 2021; Mcloyd, 1990; Palamar et al., 2015; Piotrowska et al., 2022).

Methods

Participants

In this study, data were captured from 681 adolescents ($M_{\text{age}} = 13.63$, $SD_{\text{age}} = 0.83$) in Salt Lake City, Utah, USA. Two different sources for collecting data were used: a middle school and five after-school clubs. The data collection period started in the beginning of 2018 and ended in the beginning of 2020. The data were originally collected for a study by Young et al., 2022, that explored how different dimensions of harshness shape performance on various cognitive tasks. For my thesis, I made use of variables related to my research question on the effect of father warmth and its effect on conduct problems. Most of the sample (85.61%) came from the middle school and consisted of seventh- and eighth-grade students, including 290 girls out of 583 students from a diverse background. According to records from the school district, more than 40% of students were provided with financial support due to socio-economic status. To ensure the reliability and validity of the data, they came up with five criteria before analysing. Only participants who met these criteria were included. Participants were excluded if they had incomplete cognitive task data, exhibited cognitive impairments due to head injuries, disabilities, drug use, failed to answer two or more trap questions correctly, experienced significant distractions during the evaluation, or received more than 60 minutes of special education services per day. The final sample compromised 618 adolescents ($M_{\text{age}} = 13.62$, $SD_{\text{age}} = 0.81$; 298 girls; 87.38% from the middle school sample). The final sample consisted of 10 students identifying as Asian, 3 as Native American, 12 as African American, 366 as White, 142 as Hispanic, 7 as Pacific Islander, 45 with multiple racial identities, and 33 with missing data (Young et al., 2022).

Procedure

The existing dataset by Young et al., (2022) had been collected through a six-step process. This process involved obtaining informed consent from both the participant and their primary caregiver, administering a demographics form, conducting cognitive tests, a structured interview, a questionnaire, and ending with a debriefing. The demographic form gathered basic information such as the participant's age, handedness, and ethnicity. The structured interview focused on the participant's family and home life, covering topics such as the composition of the household, the primary caregiver's education and occupation, and the number of times the participant had moved recently. The survey involved various aspects, such as the perception of unpredictability within the household, exposure to violence in proximity, availability of material resources, first-hand encounters with violence and conflicts, and a child-oriented adaptation of socially desirable responses. The

process of data collection remained consistent for both the middle school and after-school clubs, although slight adjustments were made to accommodate scheduling limitations (Young et al., 2022).

Measures

Father warmth was conceptualized by Young et al., (2022) by using the retrospective Parental Bonding Inventory – Care Subscale (Modified) based on Parker et al. (1979). The inventory was administered as an online questionnaire. Five questions were asked about the father relationship: (Item 1: “He spoke to me with a warm and friendly voice.”), (Item 2: “He appeared to understand my problems and worries.”), (Item 3: “He understood what I needed or wanted.”), (Item 4: “He made me feel I wasn’t wanted.”), (Item 5: “He was nice to me.”). Participants rated those five statements with a number from 1 to 5 with *rarely* (1) and *always* (5). The items were then averaged to create a composite variable of father warmth.

Young et al. (2022) measured conduct problems using the Strengths and Difficulties Questionnaire by Robert Goodman (Goodman, 1997). The questionnaire consists of five scales of five items each. The Scales include an emotional symptoms scale, a conduct problems scale, a hyperactivity scale, a peer problems scale, and a prosocial scale. The five items on conduct problems were the following: (Item: 1: “[The child] often loses temper”), (Item 2: “Generally well behaved, usually does what adults request.”), (Item 3: “Often fights with other youth or bullies them.”), (Item 4: “Often lies or cheats.”), (Item 5: “Steals from home, school, or elsewhere.”). The teacher was then asked to rate the accuracy of that statement with either *Not True* (0), *True* (1), or *Certainly True* (2). All five items were then averaged, resulting in a composite conduct problems score. Additionally, a complete total difficulties score, averaging all measures from the Strengths and Difficulties Questionnaire was created.

Sex was conceptualised by asking the children what sex they were assigned to at birth. Sex was coded with *male* (0) and *female* (1).

To rule out third-variable explanations, I controlled for socioeconomic status (‘SES’). This variable was based on multiple aspects. Firstly, it was based on school records indicating free lunch status, reduced lunch status, fee waiver status, and homelessness status. Secondly, SES was based on the interview about the level of parental prestige and the level of occupation, as well as whether the school provided financial assistance in any way. All variables were then averaged and combined to create a composite variable of SES. I control for SES because, as mentioned above, previous research has found associations between socioeconomic status and conduct problems (Burcher et al., 2021; Palamar et al., 2015; Piotrowska et al., 2022).

Results

To test whether father warmth has an effect on conduct problems and whether this relationship is moderated by sex, I used linear regression. To test our moderation model, I used the Process Macro by Andrew F. Hayes in SPSS (Igartua & Hayes, 2021). Figures 1-4 and table 1 depict basic descriptive statistics, frequencies, and bivariate associations of the data. To check whether

multicollinearity might be present, I combined a correlation table (Table 1). Because the correlations are not extremely high, the assumption of multicollinearity does not seem to be violated. The variance inflation factors also do not suggest that there is multicollinearity ($VIF = 1$).

Father warmth and sex were significantly correlated, $r = -.107$, $p = <.05$. This suggests that as father warmth increases, the likelihood of the child being female decreases. The correlation between father warmth and conduct problems was nonsignificant. The correlation between conduct problems and sex was nonsignificant.

Table 1

Mean, Standard Deviation and Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
Father Warmth	4.221	.742	1	-	-	-
Conduct Problems	.417	.178	-.063	1	-	-
Sex	-	-	-.107*	.001	1	-
SES	.023	.617	.246**	-.122**	-.088*	1

Note. *M* and *SD* are used to represent mean and standard deviation, respectively. * The correlation is significant at the 0.05 (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

To check whether the assumption of normality is violated I used a P-P plot (Figure 3) and histograms (Figures 1-2).

Figure 1

Histogram of father warmth

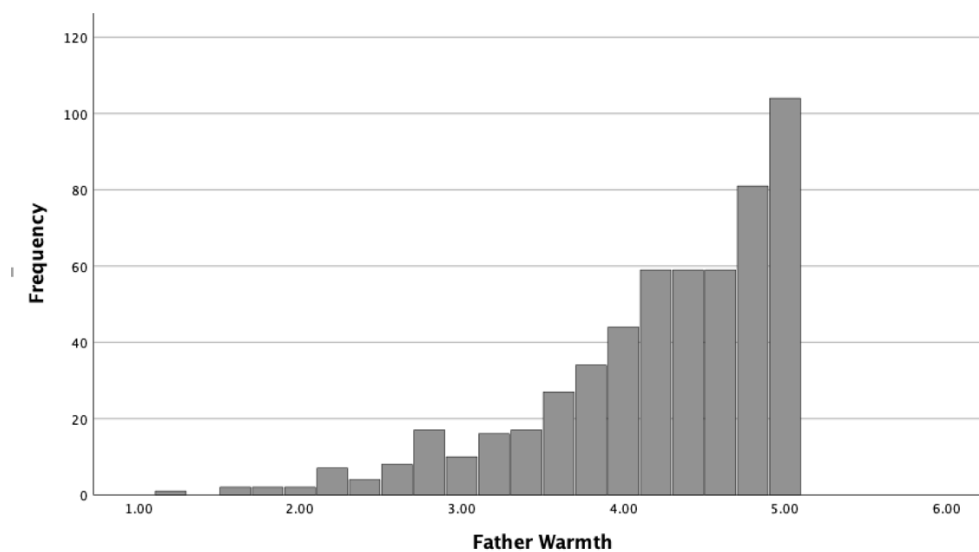
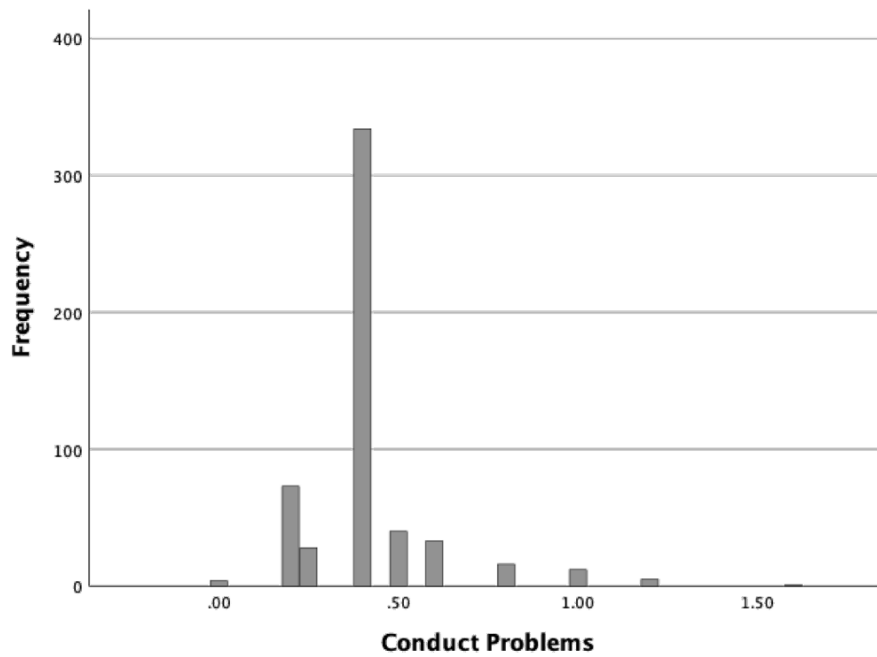
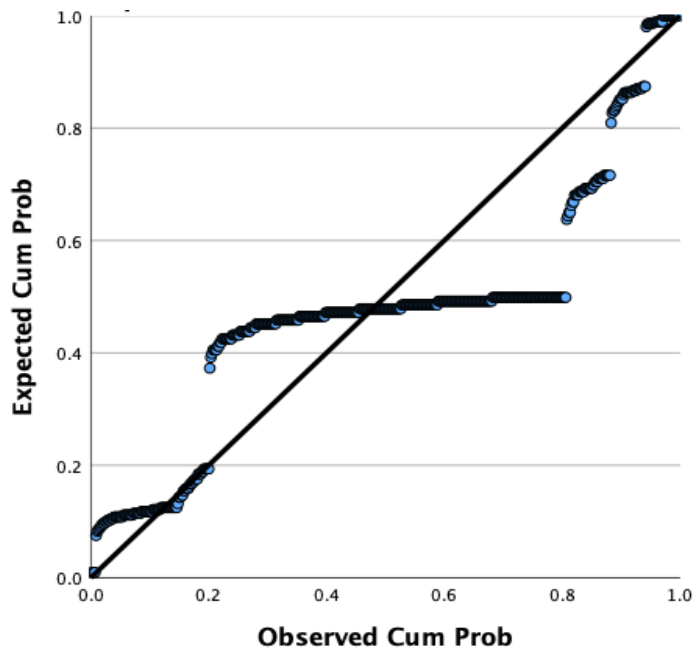
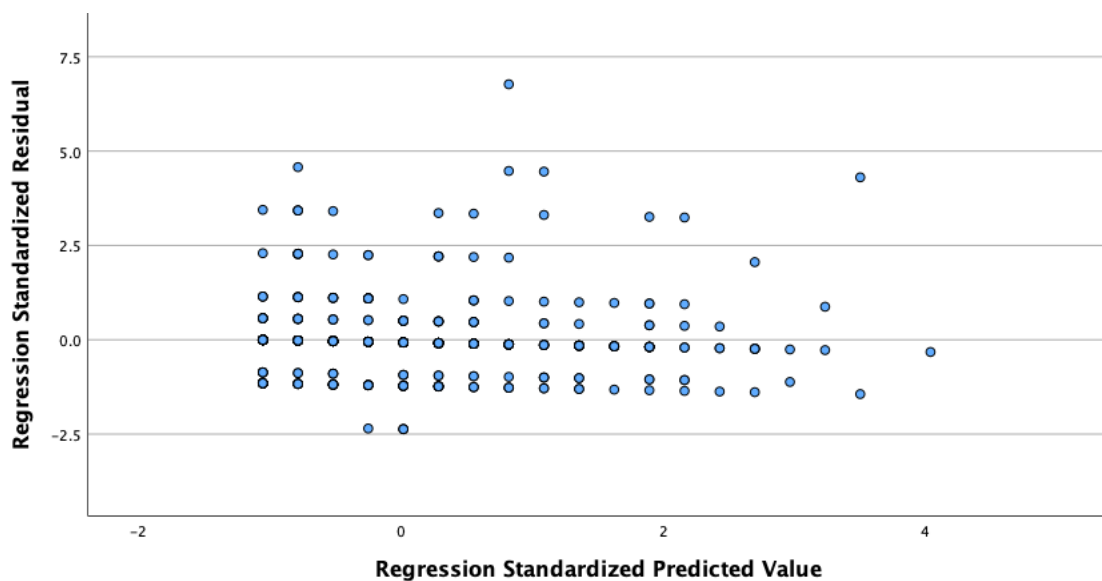


Figure 2*Histogram of conduct problems***Figure 3***P-P plot of conduct problems*

The assumption of normal distribution seems to be violated. To test the assumption of Homoscedacity I used a scatterplot of the residuals of father warmth and conduct problems (Figure 4).

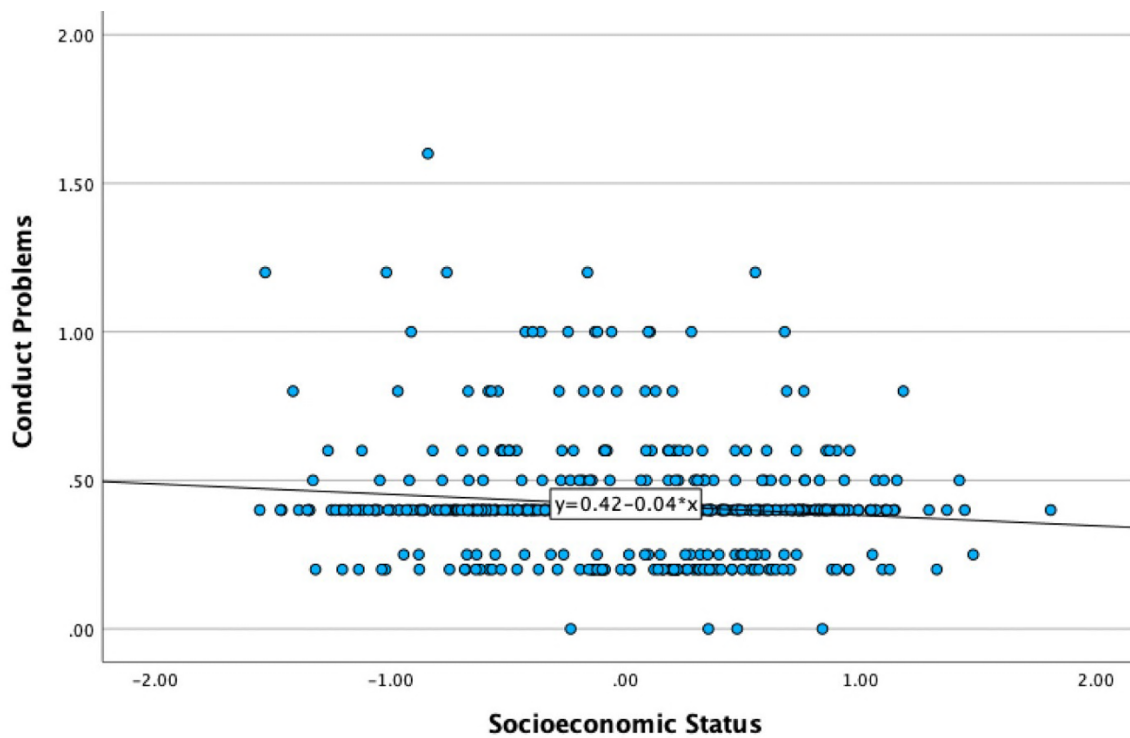
Figure 4

Scatterplot of father warmth and conduct problems

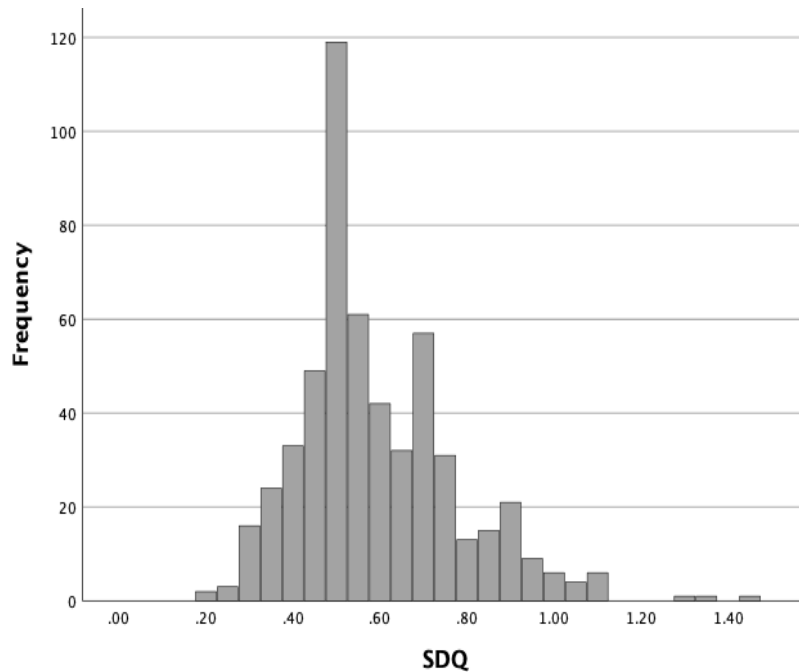


The assumption of Homoscedacity seems lightly violated. Our participants seem to have scored their fathers similarly warm and the children's teacher rated the children with low conduct problems. This results in a lack of variance. Therefore, we might not be able to detect an effect even if it existed.

To test the hypothesis that father warmth affects conduct problems and, more specifically, whether sex moderates this relationship, a linear regression was conducted controlling for SES. The results of the regression indicated that the predictors explained 2.22% of the variance ($R^2 = 0.022$, $F(4,513) = 2.91$, $p = .021$). However, father warmth was found to be nonsignificant in predicting conduct problems ($\beta = .03$, $p = .38$). Sex was found to be nonsignificant ($\beta = .01$, $p = .995$). The interaction was found to be nonsignificant ($\beta = -.024$, $p = .25$). SES was negatively associated with conduct problems ($\beta = -.036$, $p = .005$). This implies that higher family SES may be associated with lower conduct problems in children. This relationship is statistically significant ($p = .005$) even though SES does not explain much variance in conduct problems. This suggests that SES plays a significant role when predicting the moderating effect of sex between father warmth and conduct problems (Figure 5).

Figure 5*Scatterplot of SES and conduct problems*

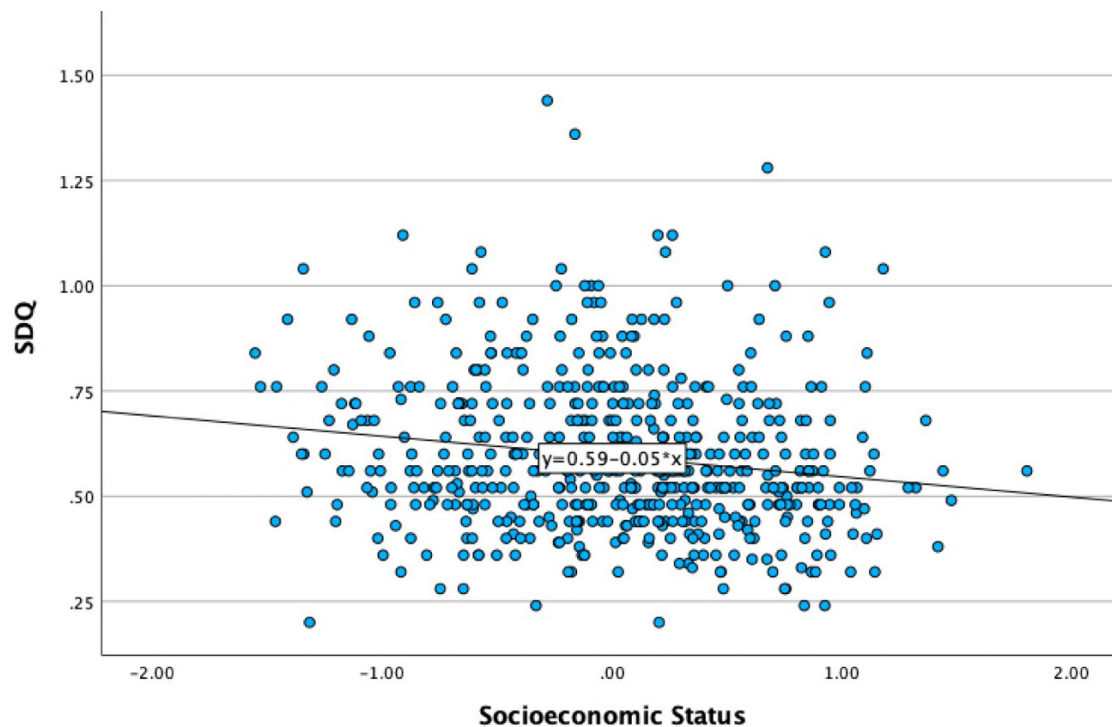
This might be due to lack of variance in father warmth and in conduct problems. To address this problem, I proceeded to look at the entire combined score of the Strengths and Difficulties Questionnaire (SDQ). The SDQ includes subscales on peer problems, conduct problems, pro-social behaviour, hyperactivity, and emotional symptoms. As seen in the Figure 6 SDQ shows more variance in scores.

Figure 6*Histogram of SDQ*

In this exploratory analysis, I regressed SDQ on father warmth using sex as moderator while controlling for SES. The results of the regression indicated that the predictors explained 2.6% of the variance ($R^2 = 0.026$, $F(4,513) = 3.425$, $p = .009$). Father warmth was nonsignificant ($\beta = -.008$, $p = .643$). Sex was nonsignificant ($\beta = -.015$, $p = .362$). The interaction between father warmth and sex was nonsignificant ($\beta = .004$, $p = .852$). Again, SES was negatively associated with the outcome ($\beta = -.046$, $p > .001$). Thus, family SES appears to be negatively associated with SDQ-Scores in children. Higher SES is associated with lower levels of overall difficulties measured by SDQ, including peer problems, conduct problems, hyperactivity, emotional symptoms, and higher pro-social behaviour. The relationship between SES and SDQ is plotted in Figure 7.

Figure 7

Scatterplot with a fitted line for SES and SDQ.



Since the interaction effect is not significant, I will not conduct simple slope analysis. In conclusion, we did not find support for our hypothesis that the relationship between father warmth and conduct problems is moderated by sex.

Exploratory Analysis

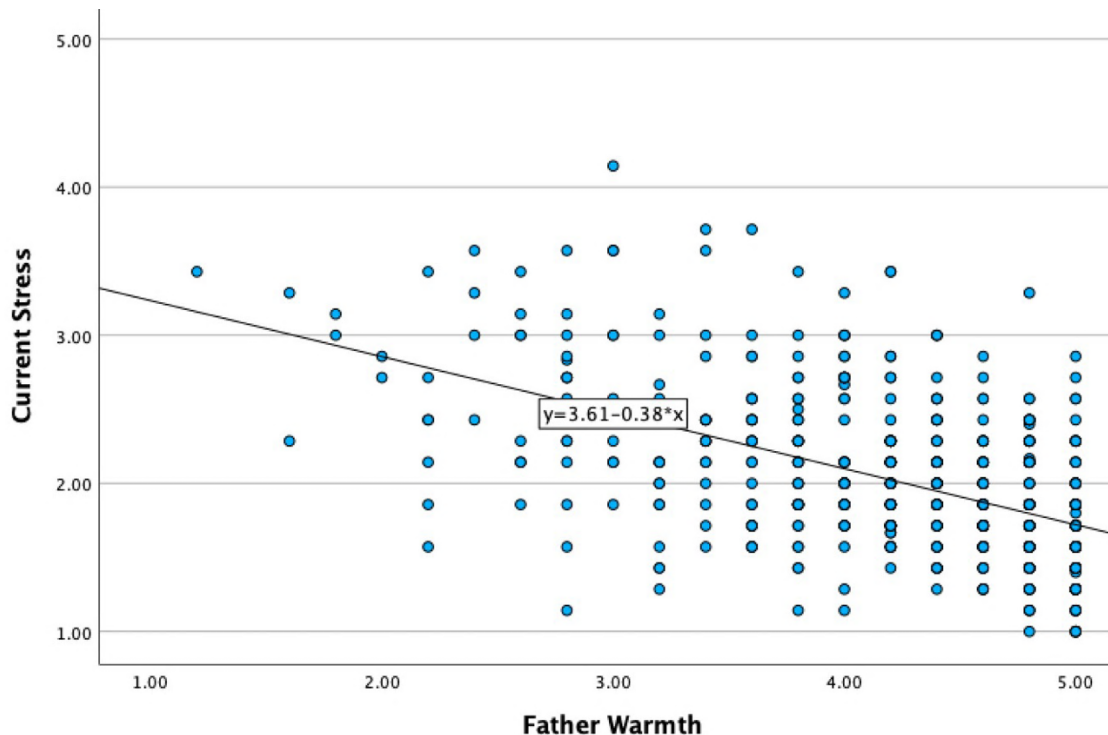
After testing my initial hypotheses, I proceeded with additional exploratory analyses to understand what other outcomes may be shaped by father warmth. Previous research has found that fathers who are warm and supportive towards their children can help their children to better cope with stressful situations, fostering resilience (Kuppens & Ceulemans, 2019).

Further, it is likely that fathers of stressed children are experiencing the same kinds of stressors decreasing their father warmth, resulting in a negative feedback loop. Fathers who face hardships, such as financial problems, exposure to violence, and family conflict, struggle to provide warmth and support to their children (Cabrera et al., 2007; Gershoff et al., 2007). The dataset I utilized includes a composite variable called 'current stress.' This variable encompasses various factors, such as emotional predictability, financial means, support, and domestic violence both in the home- and surrounding environment. These factors were rated by the child. In this explanatory analysis, I am testing whether father warmth is negatively associated with the experienced stress in children. For my analysis, I use the mean across all items of current stress. To test this relationship, I regressed father warmth on current stress. The main effect of father warmth on current stress was significant and father warmth explained 27.8% of the variance in current stress ($t(551) = .<.001, F =$

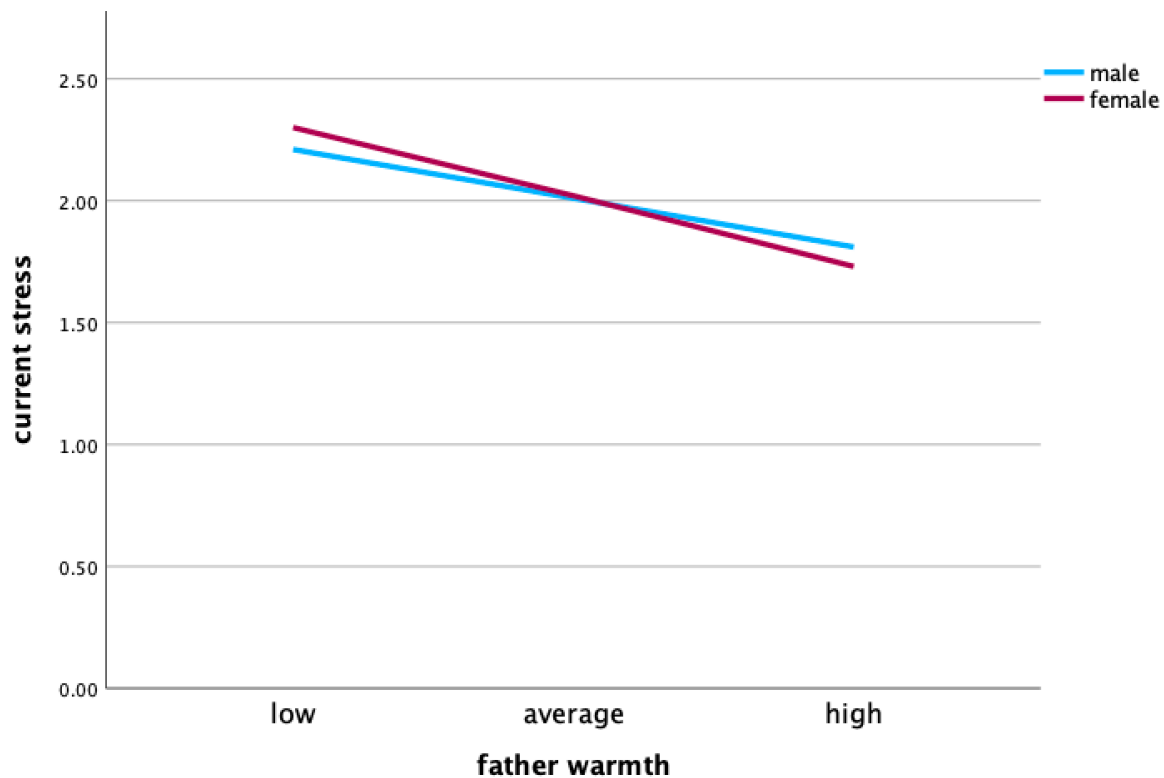
211.779, $R^2 = .278$, CI [-.429, -.327]). Lower levels of father warmth are associated with higher levels of current stress (Figure 8).

Figure 8

Scatterplot and Fitted Line for father warmth and current stress



To explore this relationship further I tested whether the relationship between father warmth and current stress is moderated by sex, while controlling for SES. The results of the regression indicated that the predictors explained 34.3% of the variance in current stress ($R^2 = .343$, $F(4,548) = 71.398$, $p < .000$). The predictor father warmth was significant ($\beta = -.27$, $p > .000$). The results of the regression analysis showed that father warmth had a significant negative effect on current stress, indicating that higher levels of father warmth are associated with lower levels of stress in children. Sex was nonsignificant ($\beta = .008$, $p > .823$). The interaction between father warmth and sex was significant ($\beta = -.111$, $p = .029$). Simple slope analysis revealed that the effect of father warmth on current stress for boys is $\beta = -.27$ and for girls it is $\beta = -.38$. The analysis implies that higher levels of father warmth are associated with lower levels of current stress for both boys and girls, but the effect appears to be stronger for girls than for boys, b

Figure 9*Interaction between father warmth and sex*

SES was also significant ($\beta = -.217, p > .000$). This suggests that SES has a negative effect on the moderation effect of sex on father warmth and current stress.

Discussion

The current study aimed to explore the influence of father warmth on the development of conduct problems in children. Initially, we hypothesized a negative association between father warmth and conduct problems, moderated by sex. However, the results did not support our hypothesis. Consequently, we shifted our attention towards analysing the composite mean of the Strengths and Difficulties Questionnaire (SDQ), which combines emotional and behavioural problems among children and adolescents. The SDQ includes scales such as hyperactivity, emotional symptoms, conduct problems, peer problems, and prosocial behaviour. Despite the focus shift, only Socioeconomic Status (SES) significantly predicted the outcome. The lack of significant findings may be attributed to the low variance in both father warmth and conduct problems scores. Specifically, our sample showed low variance in conduct problem scores, indicating that the majority of children showed few conduct problems. Additionally, a majority of children reported their fathers to be warm, with only a minority reporting a lack of warmth. The lack of variance in conduct problems and father warmth in our sample may limit the generalizability of our findings. However, it could also suggest that in an economically diverse sample, children tend to have few conduct problems and warm

fathers, which is a positive finding. It may indicate that fathers in our sample generally provide a warm and supportive environment for their children, which can have an important positive impact for children's development.

Another issue could be that the measure we used for conduct problems was too limited, since it only offers three rating options. Using a continuous scale or test that offers a wider range of possible rating options may result in more nuanced responses, increasing variance. Moreover, only teachers rated the behaviour problems of their students. If parents or trained observers had scored the questionnaire, the results might have been different. Additionally, our sample might lack generalizability because it was collected in just one state in a school and a youth club. Collecting data from multiple schools within a region, state or even across the country could increase generalizability.

Previous research has found that a decreased level of parental warmth is associated with an increased level of externalizing problems and conduct problems (Hipwell et al., 2008; Lowe & Dotterer, 2013; Wang & Kenny, 2014). Contrary to previous research findings, our study did not align with these results. A study by Hipwell et al. (2008) suggested a mutual reinforcement between conduct problems and father warmth. However, due to the absence of repeated measures in our research design, we were unable to test this feedback loop, but also did not find that father warmth and conduct problems are predictive of each other. In addition, our study did not yield significant findings regarding the association between father warmth and conduct problems in girls. Therefore, our research does not contribute substantially to the discussion of this specific aspect.

Scientific literature has found a link between social economic status and conduct problems (Burcher et al., 2021; Mcloyd, 1990; Palamar et al., 2015; Piotrowska et al., 2022). Factors such as income, parental mental health, child mental health, and stressful life events seem to affect the level of behaviour regulation, school functioning, and conduct problems. Economic stress also puts hardship on the parents that might result in emotional or physical unavailability, potentially lowering parental warmth. Consequently, further affecting internalizing and externalizing problems (Dodge et al., 1994; Moran et al., 2018; Palamar et al., 2015; Piotrowska et al., 2015). According to literature socioeconomic status may negatively affects exposure to aggressive adults, family life stressors, mother's lack of social support, lack of cognitive stimulation and peer group instability (Dodge et al., 1994; Piotrowska et al., 2015). Other studies have found that lower SES also affects the availability of resources and the availability of educational opportunities. All these factors contribute to a higher likelihood of developing conduct problems due to low SES. In our analysis SES was the only factor that was robust throughout. This hints towards the importance of considering the effect of social economic status on conduct problems and father warmth.

In the exploratory analysis, we branched out and looked at father warmth as a predictor of current stress, experienced by the respective child. Current stress combines items measuring emotional predictability, financial means, and experienced violence. Previous research found that father warmth can contribute to a positive parent-child relationship. In contrast, high parenting stress

are associated with lower levels of father engagement and warmth. Having a warm father enhances resilience to life stressors in children (Lee et al., 2018). Furthermore, research has shown that high father warmth contributes to positive coping skills and well-being in later life (Moran et al., 2018). Indeed, we found that father warmth was predictive of current stress showing a negative relationship. Children who rated their father as warmer were subjectively experiencing less stress in their environment (Burcher et al., 2021; Cabrera et al., 2007; Gershoff et al., 2007). Father warmth might therefore be a protective factor against more severe externalizing and internalizing problems. We also found that a child's sex moderated the relationship between father warmth and current stress. In Figure 9 we can see that when father warmth is low, current stress is higher for girls than for boys. However, when father warmth is high, current stress is lower for girls than it is for boys. When father warmth is average, boys and girls experience stress similarly. A potential direction for future research could be exploring the possible explanations as to why this dynamic exists.

Implications

Our study highlights the importance of fathers in the development of children and adolescents. We showed that father warmth may indeed be a buffer against current stress in adolescents. However, this buffering effect seems to be more present for girls when father warmth is high. Having an emotionally and physically available father has been linked to a wide range of positive effects such as a lower level of externalizing problems, internalizing problems, better emotional adjustment and potentially lower conduct problems (Guo et al., 2021; Veneziano, 2003; Yang et al., 2022; Yoon et al., 2018). We found mixed results and little support for this, but we acknowledge limitations and suggest that this dynamic relationship should be investigated further.

In addition, we found SES to be very robust across our analysis suggesting that SES plays an important role in father warmth, conduct problems and perceived current stress.

Limitations

The methods used in our study included self-report measures and interviews to assess childhood adversity. However, it should be noted that our measures were partially retrospective and cross-sectional, which could have introduced biases. To address this limitation, prospective and longitudinal measures would be more suitable. Furthermore, we cannot definitively rule out whether the participants' responses were influenced by their current environment or their developmental environment. Additionally, there is a possibility that participants may have rated their parents in a socially desirable way. Another limitation is that the main focus of the research was "hidden talents in harsh conditions" with a focus on reaction times and other skills. The variables we were interested in were only part of the initial interview prior to the main part of the study. The emphasis laid with other variables and not the variables I used for my hypotheses.

Future Research

Future research should investigate the relationship between father warmth and conduct problems using more comprehensive measures, including questionnaires with a wider range of answer

options and incorporating multiple perspectives from teachers and parents. Additionally, exploring the importance of father warmth in girls and examining gender differences in father-child relationship are essential. To deepen our understanding, future studies should explore the underlying mechanisms and potential mediators such as coping strategies, social support, and cognitive processes. Longitudinal and prospective studies can establish temporal precedence and clarify the long-term effects of father warmth, current stress, and subsequent developmental outcomes. Extensive exploration of father-child relationships should go beyond warmth alone and investigate factors like communication patterns, emotional availability, and consistency of support. Considering contextual factors, such as culture, socioeconomic status, and environmental variables, can enhance understanding of the complex interplay and its impact on stress and conduct problems. Investigating other potential moderators, including child temperament, parenting styles, and family dynamics, will offer a nuanced perspective. More diverse populations should be studied to increase generalizability and examining to what extent cultural, ethnic and socioeconomic factors influence father warmth, current stress and conduct problems.

Conclusion

In conclusion, this study explored the influence of father warmth on the development of conduct problems in children. While we did not find support for our initial hypothesis, our exploratory analysis about father warmth and current stress emphasizes the importance of stability, support, and emotional availability from fathers. Furthermore, father warmth was found to be a protective factor against current stress, while the effect for boys and girls slightly differed. These findings highlight the critical role of fathers in child development and the potential benefits of a warm and supportive father-child relationship. Future research should utilise comprehensive measures, explore gender differences, and investigate underlying mechanisms to further enhance our understanding. Ultimately, I stress the importance of involvement and support of fathers in child development and suggest that more targeted research in this area is needed.

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