Adolescent’s perceptions of parenting behaviours and its relationship to adolescent Generalized Anxiety Disorder symptoms

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Abstract

This study examined the relationship between how adolescents perceived parenting behaviours and adolescent Generalized Anxiety Disorder (GAD) symptom scores. The 1106 junior high and high school students (12–19 years old; 49.6% males and 50.4% females) completed questionnaires regarding their perception of parenting behaviours and self-rated symptoms of GAD. The findings of this study demonstrate that adolescent perceptions of parental alienation and rejection are strongly associated with adolescent GAD symptom scores. Additionally, mid-adolescence females perceive more parental alienation in relation to their GAD symptom scores than both early and mid-adolescent males. And early adolescent males perceive more parental rejection in relation to their GAD symptom scores than mid-adolescent males.

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Introduction

Generalized Anxiety Disorder (GAD; American Psychiatric Association, 1994) is a deliberating disorder (Mancuso, Townsend, & Mercante, 1993) which generally has an early and gradual onset that many times leads to a long and chronic course (Dugas, 2000; Hunt & Singh, 1991). Additionally sufferers of GAD place a strong burden on the primary care setting (Wittchen, 2002). It is suggested that GAD develops early during childhood and mid-adolescence (Comer & Kendall, 2004) leading some to hypothesize that GAD might be the basic anxiety from which other anxiety disorders later emerge (Borkovec, Newman, Pincus, & Lytle, 2002; Brown, Barlow, & Liebowitz, 1994). It is for these reasons that attention into child and adolescent GAD is growing.

The core symptom of GAD is excessive, persistent and uncontrollable worry (Comer & Kendall, 2004; Rapee, 2001) and researchers such as Borkovec (1994) have noted that a major component of the worry of GAD sufferers centers on interpersonal difficulties (Borkovec, Alcaine, & Behar, 2004). In respect to adolescents it is suggested that a focus of GAD worry centers on social-evaluative concerns (Hudson & Rapee, 2004). Hence, research of factors involved in adolescent GAD symptoms also should be conducted into interpersonal factors involved in adolescent social-evaluative concerns.

Two interpersonal factors involved in adolescent social-evaluative concerns that have been related to adolescent GAD symptoms are adolescent perceptions of parental rejection and over-control behaviours (Rapee, 1997). A study by Muris and Merckelbach (1998) of (pre-)adolescents (8–12 years old) found significant relationships between the adolescents’ perception of parental rejection and over-control behaviours and adolescent GAD symptoms.

In addition to the perception of parental rejection and control, the adolescent’s perception of his attachment relationship to his parents should also receive attention in the study of GAD symptom development. Dugas, Buhr, and Ladouceur (2004) have suggested that adolescent perception of insecure attachment may contribute to the development of worry and other GAD symptoms. Similar suggestions have been made by Cassidy (1995). A study of attachment by Muris, Meesters, Merckelbach, and Huelsenbeck (2000) focused on (pre-)adolescent perceived attachment in relation to their worry patterns. In this study it was found that adolescents that perceived their attachment as being insecure worry more than adolescents that perceived their attachment as being secure. Additionally, it was found that perceived parental rejection was strongly associated with perceived insecure attachment and worry.

When this is all taken together it becomes clear that an adolescent’s perception of his parents’ behaviours, such as perceived parental rejection, perceived parental over-control and perceived insecure attachment are significantly related to adolescent GAD symptoms. Therefore, this study explores how adolescent perceptions of parental rejection, over-control behaviours and perceived attachment are related to adolescent GAD symptom scores, as well as the relative importance of these parental behaviours when related to one another.

In addition to this it is also explored whether the effects of these perceptions of parental behaviours affect adolescent age and gender groups differently in respect to adolescent GAD symptom scores. The reason for such exploring of potential age and gender differences is three-fold. First, in respect to gender differences, it has been found that females have a tendency to be more sensitive to interpersonal interactions than male adolescents (Hankin & Abramson, 2001).
Secondly, studies have found that adolescent GAD symptoms are more common in girls than in boys (Keller et al., 1992). Thirdly, in respect to age, studies such as have been conducted by Helsen, Vollebergh, and Meeus (2000) and Meeus, Iedema, Maassen, and Engels (2002) have found that the relationship between parental support and adolescent wellbeing decreased as a function of the adolescent’s age. It is for these reasons that this study will also explore not only adolescents as a group, but also potential gender and age differences.

Method

Participants

The 1106 students that participated in this study came from 12 different Dutch junior high and high schools in the Utrecht province of The Netherlands. The data collected for this study is a sub-sample of a larger, ongoing research study of Dutch adolescents and their interactions with their parents and peers, their emotional states, and their general activities, entitled CONflict And Management Of RELationships (CONAMORE: Meeus et al., 2002). Only those students that had completed the GAD symptoms questionnaire, the perceived parental rejection, over-control and attachment questionnaires and came from two parent households were included in the analyses. The student population was comprised of 549 (49.6%) males and 557 (50.4%) females. The age of the students ranged from 12 to 19 years old ($M = 14.4$, $SD = 2.2$).

Procedure

The students that participated in this study filled in the questionnaires during homeroom study period, which lasts for an hour. Students were informed of the research prior to the study and were given the opportunity to not participate. Additionally, prior to the study, both adolescents and their parents received written information and, if the adolescent elected to participate, were required to provide written informed consent; less than 1% elected not to participate.

Verbal instructions as to how to fill in the questionnaires were given to the students by the research assistants just prior to the testing to complement the written instructions printed above each questionnaire. At the end of the homeroom study period, the research assistants collected the questionnaires. These assistants additionally conducted the data entry so as to insure that the data remained anonymous to the researchers.

Measures

GAD symptoms

In order to measure GAD symptom scores, the GAD subscale of The Screen for Child Anxiety Related Emotional Disorders (SCARED) was used. The SCARED is a self-report questionnaire, designed for children and adolescents, that measures the occurrence of anxiety disorder symptoms on a three point scale: 0 (almost never), 1 (sometimes), 2 (often) (Birmaher et al., 1997). The GAD symptom occurrence subscale consists of 9 items. An example item for a GAD symptom is: “I worry if others will like me”. Reliability and construct validity of the SCARED are strong (Hale,
Raaijmakers, Muris, & Meeus, 2005; Myers & Winters, 2002). In this study Cronbach’s alpha for this subscale was .86.

**Perceived parental rejection**

The perceived parental rejection measure of this study was derived from the hostile criticism subscale of the Level of Expressed Emotion questionnaire (LEE; Gerlsma & Hale, 1997). In the study by Hale, Raaijmakers, Gerlsma, and Meeus (2005) it was shown that the hostile criticism subscale was highly correlated to both depression and anxiety symptom scores in adolescents from the general population. Additionally, it was noted by Gerlsma and Hale (1997) that the hostile criticism subscale is reflective of a person’s perception of being rejection by others, as formulated by Coyne and Downey (1991).

The three items of the hostile criticism subscale (i.e. “is very critical of me”; “tries to change me”; “gets annoyed when I want something from him/her”) were adapted from the Familien Fragenbogen (Hahlweg, Dürr, & Müller, 1995) and Hooley and Teasdale’s (1989) perceived hostile criticism measure. This scale is similar to other adolescent perception of parental rejection scales, such as in the “My memories of my upbringing” questionnaire (e.g. “Would your parents like you to be different?” EMBU: Muris, Schmidt, Lambrichs, & Meesters, 2001). The questions were scored a scale from 0 (never) to 3 (always). Reliability and construct validity have been shown to be strong for both adults (Gerlsma & Hale, 1997) and adolescents (Hale, Raaijmakers, Gerlsma, & Meeus, 2005). In this study Cronbach’s alpha for this subscale was .81.

**Perceived parental over-control**

Perceived parental over-control was measured by the psychological control and the over-involvement subscales of the Children’s Reports of Parental Behaviour Inventory (CRPBI: Kawash & Clewes, 1988; Schaefer, 1965). The 10-item version of these subscales were filled in by the adolescents, ranging in scores from 0 (never) to 4 (always). Example questions are: “My parents do not look at me if I am bad” (psychological control) and “My parents make sure I obey the rules” (over-involvement). In this study Cronbach’s alpha for these subscales were .85 (psychological control) and .61 (over-involvement).

**Perceived parental attachment**

This construct was measured with alienation, trust and communication subscales of the short version of the Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1987; Nada-Raja, McGee, & Stanton, 1992). The IPPA has been shown in a recent study to be a good measure of adolescent perceptions of their attachment to their parents (Vivona, 2000).

A five-item version of the alienation subscale, a four-item version of the trust subscale and a three-item version of the communication subscale were filled in by the adolescents. These subscales scores reflect their feelings of alienation from their parent, their degree of trust of the parent and their perceived quality of positive communication from the parent. Six-point Likert scales (responses ranging from 0 = ‘completely untrue’ to 5 = ‘completely true’) were used. Examples of alienation trust, and communication items are: “My parents have their own problems” (alienation), “My parents respect my feelings” (trust) and “When my parents know that something is bothering me, they ask me about it” (communication). Cronbach’s alphas were .78 (parental alienation), .87 (parental trust) and .80 (parental communication).
Data analysis

In this study, three types of statistical analyses were applied. The first was a correlation analysis that examined the sort of association between the adolescents’ perceptions of parental interpersonal behaviours and the adolescents’ GAD symptom scores. Secondly, a stepwise linear regression analysis was conducted to explore which of the perceived parental behaviours provided unique prediction of the adolescents’ GAD symptom scores. Only the perceived parental behaviours that significantly correlated with the adolescent GAD symptom scores were entered into the model, and all the parental behaviours were entered simultaneously.

Finally, a structural equation modeling based on maximum likelihood estimation was employed (AMOS; Arbuckle, 1997) was used to examine the relationship between the significant predictive perceived parental behaviours, as found in the regression analyses, and the adolescents’ GAD symptom scores for the age and gender groups. The covariances of these significant variables were used as input for a linear structural relations model. The reason for using a linear structural relations model is because it allows for both an examination of the regression weights and the testing of significant differences between these regression weights in the same analysis.

The model fits were evaluated by means of three indices: the goodness of fit index (GFI: a value of .95 or greater represents a good fit), the normed fit index (NFI: a value of .95 or greater represents a good fit) and the root mean square residual (RMSEA: a value of .05 or less represents a good fit).

Having the advantage of a large enough sample (Bentler & Chou, 1987; Bollen, 1989), multi-group analysis was conducted for a combination of four adolescent groups (younger girls, older girls, younger boys and older boys). The two age groups were composed of early adolescents, 12–14 years old (n = 580; 52%), and middle adolescents, 15–19 years old (n = 526; 48%). The younger age group consisted of 305 (27.6%) boys and 275 (24.8%) girls and the older age group contained 244 (22.1%) boys and 282 (25.5%) girls. Examination was given to two models; a restricted model, in which all the estimated parameters were required to be equal across groups, and a non-restricted model, in which all the parameters were allowed to differ across age and gender groups.

Results

Correlation and regression analyses between the perceived parental behaviours and adolescent GAD symptom scores

First examination was given to the correlations between the GAD symptom scores and the perceived parental behaviour measures of perceived rejection, psychological control, over-involvement, alienation, trust and communication. The results are reported in Table 1.

As can be seen, the variables for perceived parental rejection, psychological control and alienation positively correlated with the GAD symptom scores of the entire group. The perceived parental trust variable correlated negatively with the group GAD score. The perceived parental communication variable did not correlate significantly.

In the regression analysis, the perceived rejection and alienation variables were found to be the best predictors of the adolescent GAD symptom scores (Adjusted $R^2 = .12$, $p < .001$). Hence,
while all the three perceived parental domains (perceived parental rejection, over-control and attachment) were significantly correlated to adolescent GAD symptom scores, only perceived parental rejection and perceived parental alienation provided unique prediction of adolescent GAD symptom scores. The beta weights for all the variables are reported in Table 1. Therefore in the structural equation modeling analyses attention will be only focused on the perceived parental rejection and alienation behaviours.

**Structural equation modeling of the adolescent GAD symptom scores and perceived parental behaviours**

In respect to the structural equation modeling, when analysis was made of the two models, restricted and non-restricted models, it became clear that the non-restricted model had a significantly better fit for the data than the restricted model ($\Delta X^2 = 24.85$, delta df = 9, $p < .01$). The exact findings of the non-restricted model was $X^2 = 7.08$, df = 3, $p = .07$. The fit statistics for this model were also strong: goodness-of-fit index (GFI = .99), the normed fit index (NFI = .98) and root mean square residual (RMSEA = .03). Since the non-restricted model had the best fit, we were able to test the age and gender multi-group model. The standardized maximum likelihood estimates and fit coefficients for the boys and girls of early and mid-adolescence are presented in Table 2. Additionally, this model is presented as a graphic in Fig. 1.

Inspection of the parameter estimates of the model (Table 2) reveals that there is a significant relation between perceived parental alienation and adolescent GAD symptom scores for both age groups of the boys and the girls (younger girls: $\beta_1 = .23$, $p < .001$; older girls: $\beta_1 = .37$, $p < .001$; younger boys: $\beta_1 = .23$, $p < .001$; older boys: $\beta_1 = .21$, $p < .001$). However, while the perceived parental rejection had a significant relationship to both girl age groups (younger girls: $\beta_2 = .16$, $p < .01$; older girls: $\beta_2 = .15$, $p < .05$), it was only significant for the younger boy group (younger boys: $\beta_2 = .31$, $p < .001$; older boys: $\beta_2 = .12$, $p = .07$).

Comparisons of the path coefficients (Table 2) reveal that the path from perceived parental alienation to adolescent GAD symptom scores is significantly higher for the older girls compared

<table>
<thead>
<tr>
<th>Perceived parental behaviors</th>
<th>Adolescent GAD symptom scores</th>
<th>Correlation</th>
<th>Beta weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alienation</td>
<td></td>
<td>.31*</td>
<td>.21**</td>
</tr>
<tr>
<td>Rejection</td>
<td></td>
<td>.27*</td>
<td>.23**</td>
</tr>
<tr>
<td>Psychological control</td>
<td></td>
<td>.18*</td>
<td>.06</td>
</tr>
<tr>
<td>Over-involvement</td>
<td></td>
<td>.12*</td>
<td>.08</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td>-.10*</td>
<td>.01</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td>-.03</td>
<td>.05</td>
</tr>
</tbody>
</table>

*p < .01; **p < .001.
to the young boys and the older boys. Girls in mid-adolescence thus seem to be more sensitive to perceived parental alienation as compared to both early and mid-adolescent boys.

Additionally, comparisons of the path coefficients reveal that the path from perceived parental rejection to adolescent GAD symptom scores is stronger for the early adolescent boys than for the

Table 2
Standardized maximum likelihood estimates and fit coefficients of the linear structural relations model

<table>
<thead>
<tr>
<th>Model</th>
<th>Perceived parental alienation to GAD ($\beta_1$)</th>
<th>Perceived parental rejection to GAD ($\beta_2$)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Younger boys</td>
<td>Younger boys</td>
</tr>
<tr>
<td></td>
<td>$0.23^{***}$</td>
<td>$0.31^{***}$</td>
</tr>
<tr>
<td></td>
<td>Older boys</td>
<td>Older boys</td>
</tr>
<tr>
<td></td>
<td>$0.21^{***}$</td>
<td>$0.12$ (n.s.)</td>
</tr>
<tr>
<td></td>
<td>Younger girls</td>
<td>Younger girls</td>
</tr>
<tr>
<td></td>
<td>$0.23^{***}$</td>
<td>$0.16^{**}$</td>
</tr>
<tr>
<td></td>
<td>Older girls</td>
<td>Older girls</td>
</tr>
<tr>
<td></td>
<td>$0.37^{***}$</td>
<td>$0.15^{*}$</td>
</tr>
</tbody>
</table>

$\chi^2 = 7.08$, df = 3, $p = 0.07$, GFI = 0.99, NFI = 0.98, RMSEA = 0.03

n.s., not significant; $^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

*a* Significant difference between the older girls and the younger boys ($p < 0.01$).

*Significant difference between the older girls and the older boys ($p < 0.05$).

Significant difference between the younger boys and the older boys ($p < 0.05$).

Fig. 1. Relationship between perceived parental alienation and rejection and adolescent GAD symptom scores.
mid-adolescent boys. Hence, boys in their early adolescence would appear to be more susceptible to perceived parental rejection than are mid-adolescent boys.

Discussion

As was noted in the Introduction, the study of adolescent GAD is receiving growing attention. And in this field of study, the relationship of adolescent interpersonal factors to adolescent GAD is also gaining recognition. It is for these reasons that this study was conducted to examine the relationship of interpersonal parental behaviours to adolescent GAD symptom scores in a same study. By studying several interpersonal parental behaviours in the same study, the relative importance of these behaviours can be tested.

As was demonstrated in this study adolescent perceptions of parental domains of rejection, over-control (psychological control and over-involvement) and attachment (alienation and trust) were all significantly correlated with the adolescent GAD symptom scores. However only the perceived parental rejection and alienation behaviours provided unique prediction of the adolescent GAD symptom scores. Although previous studies (e.g. Muris & Merckelbach, 1998; Rapee, 1997) have shown that perceived parental over-controlling behaviours are significantly related to adolescent GAD symptoms, in this study perceived parental over-control did not predict GAD symptom scores whereas perceived parental rejection and alienation did. However, to consider the significance of this finding, the findings of the linear structural relations model should also be considered.

The linear structural relations model analysis demonstrated that perceived parental alienation behaviours were significantly related to both the younger and older boy and girl groups. Perceived parental rejection behaviours were significantly related to both girl age groups, but were only significantly related to the younger boy group.

When these findings are taken together with the critical ratio comparisons of the path coefficients, a picture emerges that when adolescent perceptions of negative parental direct behaviours (such as over-involvement and psychological control) are compared to perceived negative parental behavioural interpersonal attitudes (such as perceived rejection and alienation) that perceived negative attitudes as opposed to perceived negative direct behaviours play a more important part in adolescent GAD symptom scores. In addition to this it would appear that perceived parental negative attitudes such as perceived alienation play a more prominent part for female GAD symptom scores than for males, at least in the case of the older girl group. While perceived parental rejection is not significantly different over the two gender groups, it is more strongly related to younger boys GAD symptom scores than for older boys.

These findings are interesting in light of previous studies that have noted that females have a tendency to be more sensitive to interpersonal interactions than males (Hankin & Abramson, 2001), such as sensitivity to attitudes, and findings that the relationship between parental support and adolescent wellbeing decreases as a function of the adolescent’s increasing age (Helsen et al., 2000). It can be suggested that our findings are both supportive of the position that females are sensitive to interpersonal attitudes and, when considering adolescent GAD symptom scores, that males are sensitive as well. This would help to explain why both perceived parental alienation and
rejection behaviours are significant predictors of both female and male adolescent age groups’ GAD symptom scores.

However, this sensitivity would appear to decrease over time for the males, as shown in the decrease of perceived parental rejection behaviours, in line with findings by Meeus et al. (2002) for perceived parental support. However, this sensitivity would appear to increase over time for females, as was shown by the perception of parental alienation behaviours. It may well be the case that for males that the influence of either perceived parental support or perceived negative parental behaviours decreases over time, whereas for females their sensitivity to perceived negative parental behaviours actually increases.

Limitations

Several limitations of this study should also be noted. First, this study employed only cross-sectional data. Since the data was only collected at one measurement, it is not possible to determine whether the perceived parental behaviours and the adolescent GAD symptoms scores develop stronger or weaker relationships over time. Nor can the direction of the relationship between adolescent GAD symptom scores and the perceived rejection and alienation parental behaviours be determined. Therefore, future longitudinal studies should be conducted to examine these found relationships are specific to GAD symptom scores or are simply a part of normal development. Additionally, comparison to other anxiety symptom scores could also help address whether the found relationships are specific to GAD or not.

It should also be mentioned that this study examined an adolescent sample from the general population who self-rated GAD symptom scores, hence should not be confused with an actual DSM diagnosis of GAD. Although it is generally accepted that adolescents should be the main informant in the case of anxiety disorders (Stallings & March, 1995), use of a structured interview, such as the A-DISC (Comer & Kendall, 2004) could have allowed us to explore the relationship between self-report and an actual diagnosis.

Attention is only given to both parents as a unit, as opposed to focusing the attention on the mother and father individually. It is possible that adolescents respond to mothers and fathers in differential patterns that would increase our knowledge of the role of perceived parental behaviours on adolescent GAD symptom scores, therefore such attention should also be afforded this line of study in the future.

Finally, since no direct observations of the actual parental behaviours were conducted, nor were questionnaires administered to the parents, it cannot be said for certainty if the adolescent perception of parental behaviours exactly corresponded to the parents’ actual behaviours. This too should be addressed in future studies.

In summary, the findings of this study seem to indicate that perceived parental behaviours are related to adolescent GAD symptom scores, specifically with respect to perceived parental alienation, and to a lesser degree, perceived parental rejection. And while this influence seems to decreases as a function of age for boys (as evidenced for perceived parental rejection) it actually increases for girls (as evidenced for perceived parental alienation) possibly due to a stronger interpersonal sensitivity on the part of females. The findings highlight the importance of parental interpersonal behaviours in adolescent GAD symptoms.
References


