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Exploring the Relationship Between Empathy and Friendship Quality in Adolescence: A Dyadic Approach

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Abstract

Empathy is a crucial social skill associated with friendships in adolescence (van den Bedem, Willems, Dockrell, van Alphen, & Rieffe, 2018). This study explores whether friendships high in empathy have a higher friendship quality. In this study, empathy was measured through three aspects of empathic skills (affective empathy, cognitive empathy and empathic action) and friendship quality was explored through both positive and negative friendship quality scales. By inspecting data from both friends in a best friendship, a dyadic approach was enabled and the mean scores and similarity scores from both friends were used in the analysis. Results showed that the mean levels of empathy in a friendship predicted their positive friendship quality. Notably, empathic action was most predictive of positive friendship quality. The analysis did not uncover any significant findings regarding the similarity of friendships. However, the study did discover that gender was a significant predictor of friendship quality, with girl-girl friendships displaying more positive friendships quality than boy-boy friendships. Overall, this study adds weight to the small bank of literature which highlights the importance of empathy on friendship quality and provides further support for the dyadic approach as a mode of research.

Exploring the Relationship Between Empathy and Friendship Quality in Adolescence: A Dyadic Approach

As humans are social beings, friendships are a fundamental component in human life. This is particularly true for school-age children and adolescents, who generally spend a large proportion of their waking hours in social contexts in the classroom or on the playground. Friendships are universal relationships which appear across the life-span and in every culture (Hartup & Stevens, 1999). They are voluntary, intimate, dynamic relationships founded on cooperation and trust (Gifford-Smith & Brownell, 2003). In pre-school, friends are often peers that a young child likes to play with. However, as they progress through childhood and adolescence it becomes clear that friendship is a two-way, mutual relationship (Hartup & Stevens, 1999). Friendships foster self-esteem, a sense of well-being and provide support in developmental transitions and have been related to better adjustment (Bukowski, Newcomb, & Hartup, 1996). As friendships are related to a number of positive social and emotional developmental outcomes, a better understanding of the underlying social skills that enable the formation of high-quality friendships is highly important.

One social skill important in the formation and maintenance of friendships is empathy. Empathy, in its most simple terms, is defined as the ability to understand and share the feelings of another (Davis, 1983). Empathy is a complex skill, and research has highlighted three subprocesses that underlie empathic skills. The first component is affective empathy, which refers to the ability to simulate and share the feelings that another person is experiencing. The second component is cognitive empathy, the ability to understand the way someone else is feeling. And finally, there is empathic action which concerns the propensity of a person to act to their empathic feelings by performing supportive and helping behaviours (Overgaauw, Rieffe, Broekhof, Crone, & Güroğlu, 2017). This component is important for selecting appropriate behavioural responses according to the social situation (Decety, 2010).

In friendships, friends' empathic ability in sharing and understanding each other's mental states influences the way friends behave towards each other, which in turn influences the perception of the quality of the friendship (Meuwese, Cillessen, & Güroğlu, 2017).

Friendship quality can be viewed as a product of its features. These 'features' are the attributions and characteristics of a friendship (Berndt, 1996). One can distinguish between positive (e.g., intimacy, and companionship) and negative (e.g., rivalry, conflict) features of friendships. A high-quality friendship is characterised by being rich in positive features and showing fewer negative features (Berndt, 2002). Friendships with a high level of positive features and a low level of negative features are related to better psychosocial adjustment in late adolescence and early adulthood (Bagwell, et al., 2005). One longitudinal study measured the development of empathy between the ages of 12-16 years then inspected social competencies at the age of 35 (Allemand, Steiger, & Fend, 2015). This study found that both the level of empathy and the change in empathy through adolescence were related to social competencies in adulthood such as communication skills and relationship satisfaction. The current study will investigate the association between empathy and friendship quality across late childhood and adolescence (9-16 years).

Developmental research has found evidence of the three aspects of empathy by the age of 3 (Decety, 2010). Affective empathy is the first to develop, whereas although there are signs of cognitive empathy from infancy, cognitive empathy has been found to continue to mature through childhood and adolescence (Humphrey & Dumontheil, 2016). Research into both neurological and behavioural development show there is a gradual change from the visceral emotional response to social-emotional stimuli to a more evaluative, cognitive response throughout childhood, adolescence and into adulthood (Decety, 2010). The current study hopes to work towards a more robust understanding of the development of empathy in adolescence.

As children enter adolescence, the amount of time they spend with their friends increases as does the nature of their friendships (Poulin & Chan, 2010). In early adolescence, friendships become characterised by higher levels of intimacy and trust, which are aspects important for high friendship quality (Buhrmester, 1990). This is accompanied by a change from being self-centred and having limited emotional understanding to becoming more reflective and more able to take perspectives of others (Marsh, Allen, Ho, Porter, & McFarland, 2006). This change may be related to the development of more complex social skills, such as empathy (Eisenberg, Spinrad, & Morris, 2013).

In prior research, empathy and friendship quality were found to have a bi-directional association in a longitudinal study (van den Bedem, Willems, Dockrell, van Alphen, & Rieffe, 2018). This study displayed a relationship between empathy and friendship quality, where positive friendships contributed to higher empathy and vice versa. However, friendship quality in this study was reported by only one of the two friends in a friendship. As both friends contribute to the quality of a friendship, a dyadic approach that is informed by both individuals in a friendship will allow for a more comprehensive understanding of the link between friendship quality and empathic skills. In this study we thus use a dyadic approach and inspect the relationship between two best friends.

One significant factor predicting empathy and friendship is similarity. Friendships often involve individuals who are similar to one another in the way that they look, think and behave (Parkinson, Kleinbaum, & Wheatley, 2018). One study found that when a child perceived they were similar to a synthetic character in a task, they more likely to show liking and empathic tendencies towards that character, compared to characters they perceived to be less similar to them (Hall & Woods, 2005). The study highlighted the potential importance of similarity in developing empathic relations, albeit through computerised characters. More research using real-life situations and people is needed to consolidate these findings relating

empathy and similarity. Regarding friendship, research has shown that children are more likely to form friends with those who they perceive as being more similar to them (Aboud & Mendelson, 1998). Furthermore, both adolescent friends in a same-sex friendship usually perceive their friendship quality similarly (Simpkins, Parke, Flyr, & Wild, 2006). However, although similarity may significantly account for the formation of friendships, there is limited research into the relationship between similarity and friendship quality. Therefore, in the current study similarity between the friends in each friendship dyad will be investigated in relation to friendship quality reported by friends.

Two friends in a friendship are behaviourally and psychosocially interdependent, therefore, having information from both sides of the friendship, allows for the dyad, rather than the individuals, to be the unit of analysis (Chow, Ruhl, & Buhrmester, 2013). One study did use such a dyadic approach, where empathy was assessed in both friends in the friendship. The results showed that adolescents dyads who had higher levels of empathy (i.e., affective empathy and cognitive empathy) also reported closer friendships (Chow, Ruhl, & Buhrmester, 2013). This finding is closely relevant to the current study, showing a strong link between empathy and friendship closeness. It should be noted that the study by Chow and colleagues only examined a sample of 15-16 years-olds, and although data from both affective empathy and cognitive empathy was gathered, they were used together as one empathy variable was used in the analysis. This did not allow to examine the differential relation between different aspects of empathy and friendship quality. Furthermore, in the study by Chow and colleagues only friendship closeness was measured, rather than a general friendship quality. Friendship closeness refers to the intimacy of a friendship, whereas friendship quality refers to a broader range of friendship characteristics which includes closeness but also others such as companionship, trust and protection from victimisation (Bukowski, Hoza, & Boivin, 1994).

The current study will explore the relationship between three aspects of empathic skills (i.e., affective empathy, cognitive empathy and empathic action) with friendship quality across a broad age range of 9 to 16 years. Furthermore, and importantly, the current study will be able to employ a dyadic perspective in examining these links by including reports of friendship quality and empathy by both friends in a friendship by taking the mean scores of the two friends in the friendship. Additionally, for another dyadic measure, the difference between the scores of the two friends will also be used to inspect the similarity of the friends. There are also gender differences in the development of empathy and friendship quality. However, the findings on gender differences are inconsistent (e.g. Overgaauw, Rieffe, Broekhof, Crone, & Güroğlu, 2017; Van der Graaff, et al., 2014). Therefore, this study will examine gender effects, to work towards a consensus. The aim of this study is thus to explore the relationship between the three aspects of empathy (affective empathy, cognitive empathy and empathic action) and friendship quality. The three processes of empathic abilities will be examined to understand whether there is a difference between the empathic abilities on how strongly they are related to friendship quality.

Research questions and hypotheses

This study will explore the relationship between the level of empathy and friendship quality across adolescence. Based on prior studies, these are the predictions for this study:

Hypothesis 1 is that friendships characterised by high levels of empathy are expected to be friendships high in friendship quality. In other words, we expect mean dyad scores on emotional empathy, cognitive empathy and empathic action to significantly predict mean dyad scores on positive friendship quality and be negatively related to negative friendship quality. Hypothesis 2 is that friendships characterised by high similarity on empathy are expected to be friendships in which both individuals rate their friendship quality similarly. This means that we expect high difference (low similarity) scores for dyads on emotional

empathy, cognitive empathy and empathic action to predict high difference (low similarity) in positive and negative friendship quality scores within dyads. Finally, for hypothesis 3, friendships that are characterised by high similarity on empathic skills are expected to be friendships of high friendship quality. In other words, we expect high dyadic difference scores on emotional empathy, cognitive empathy and empathic action to predict lower mean dyad scores on positive friendship quality and higher negative friendship quality. Although age and gender effects will be inspected, no solid hypothesis is made as to the direction, due to the lack of consensus in prior literature.

Methods

The data used in this study was taken from a larger study that has been reported elsewhere (van Hoorn et al., 2016; Spaans et al., 2018). There were 89 target participants who were recruited via advertisements and media in the original study. These participants were asked to join the study with their same-sex best friend. After inspecting the data for the current study, cases with missing data were excluded ($N=3$). Furthermore, mixed-sex dyads were removed ($N=6$), finally leaving 82 dyads. Among these friendship dyads 42 of them (51.2%) were boy-boy dyads and 40 of them (48.8%) were girl-girl dyads. The age of the participants ranged from 9 to 17 years old ($M = 13.5$, $SD = 7.94$). The largest age difference within a dyad was 1.83 years and the smallest was 0.00 years, with two friends having the same age ($M\ difference = 0.48$, $SD = 0.41$). The data collection involved demographics on age, gender, and ethnicity, along with several self-report questionnaires, as well as a scanning session for half of the participants (see van Hoorn et al., 2016). In the current study, questionnaires measuring empathic abilities and friendship quality were used.

Empathic Ability

Empathic ability was assessed using self-report questionnaires tapping into three aspects of empathy: cognitive empathy, affective empathy and empathic action. Cognitive

empathy was assessed by the perspective taking subscale of the Interpersonal Reactivity Index (IRI) (Davis et al., 1983). This questionnaire measure of cognitive empathy assessed the ability of the participant to spontaneously adopt the psychological point-of-view of others. This subscale included seven items, which were statements relating to cognitive empathy. A sample item from subscale this is "I sometimes try to understand my friends better by imagining how things look from their perspective." The items were scored on a four-point Likert scale ranging from 0 (does not describe me well) to 4 (describes me very well). This subscale has a satisfactory internal reliability (Cronbach's alpha was .71). Higher scores indicated higher cognitive empathy.

Affective empathy was measured by the empathic concern subscale of the IRI. This measure includes seven items that assessed the extent to which participants feel warmth, compassion and concern for others. A sample item from this subscale is "I often have tender, concerned feelings for people less fortunate than me.". The items were similarly scored on a four-point Likert scale ranging from 0 (does not describe me well) to 4 (describes me very well). This subscale also has a satisfactory internal reliability with Cronbach's alpha of .76. For both the cognitive empathy and affective empathy measures taken from the IRI, the scale scores were calculated from the average score of the seven items on each subscale. Higher scores indicated higher affective empathy.

The empathic action aspect of empathy was assessed using the support subscale of the Empathy Questionnaire for Children and Adolescents (EmQue-CA) (Overgaauw et al., 2017). This subscale contained six items measured the participants propensity to engage in prosocial actions in order to comfort others, referred to as empathic action. A sample item is "If a friend is sad, I want to do something to make it better". These items were rated on a 3-point scale (not true (1), somewhat true (2), true (3)). The scores for this subscale were

calculated from the average score of the six items. A higher score indicated a higher tendency for empathic action. This scale has moderate internal reliability (Cronbach's $\alpha = .65$).

Friendship Quality

The measure of friendship quality used in this study was a short version of the Friendship Quality Scale (FQS) (Bukowski et al., 1994). There were two subscales: positive friendship qualities such as closeness, companionship, and security were assessed with 13 items (Cronbach's $\alpha = .86$) and seven items covered negative friendship qualities such as conflict and power balance (Cronbach's $\alpha = .80$). Participants indicated how much they believed each item was true in regard to the relationship with their best friend. This was rated on a 5-point Likert scale ranging from (1) not true to (5) completely true. The mean scores were calculated for each subscale. The higher scores on the positive subscale items indicated more positive friendship qualities and higher scores on the negative subscale items indicate a friendship with a higher level of negative friendship qualities.

Data analysis

Intraclass correlations (ICC) were carried out between the friends' scores to inspect the degree of similarity between the scores of between dyad members. The data was arranged to allow for dyadic analyses by computing a mean score and a difference score for each dyad on the variables of interest. The mean score was the average of both friends scores for each scale. Furthermore, calculating absolute difference scores allowed for insight into the similarity of two friends in each friendship dyad.

The analyses were performed by the IBM SPSS programme. Correlations (of dyad scores) were computed to inspect the relationship between empathic ability through the three acts of empathy (cognitive empathy, affective empathy and empathic action) and positive and negative friendship quality. To test the hypothesis 1 linear regressions with the mean empathy scores as the independent variables and the mean positive and negative friendship

quality scores as the dependent variables were computed. For the hypothesis 2, linear regressions with difference scores for empathy as the independent variables and the difference scores for positive and negative friendship quality as the dependent variables were calculated. For hypothesis 3, linear regressions between the difference scores of empathic abilities and the mean scores of positive and negative friendship quality. For each analysis gender and age variables were added to the regression model to inspect for gender and age effects.

Results

The descriptive statistics including means, standard deviations, minimum and maximum scores for each variable are found in Table 1. The ranges for the scales of each variable are also provided as a reference point for inspecting the statistics. Comparing the scores for boy dyads and girl dyads, there were significant gender differences which are highlighted in the table. The girl dyads generally reported higher levels of friendship quality and higher scores on all three aspects of empathy. Furthermore, the girl dyads had more similar (lower difference) scores for empathic action than boys. The correlations between all empathy and friendship quality variables are published in table 2.

ICC

Table 3 shows ICC scores for the dyads. 4 out of 5 of the ICC scores were statistically significant in the similarity of scores both friends within each dyad (ranging from $r = .22$ to $.34$). Therefore, up to 34% of the variance of the study variables can be explained by this dyadic dependence. Each scale measuring empathy had statistically significant intercorrelations, indicating high similarity of empathic abilities of individuals within each friendship dyad. This similarity was also found with scores on positive friendship quality but not for negative friendship quality scores.

Table 1. *Descriptive statistics*

	Scale Range	Minimum	Maximum	Mean	Std. Deviation
<i>Dyad Mean Scores</i>					
Positive Friendship Quality***	1-5	3.03	4.81	4.10	.42
Boy-boy		3.03	4.44	3.87	.38
Girl-girl		3.62	4.81	4.34	.31
Negative Friendship Quality	1-5	1.00	2.76	1.73	.37
Boy-boy		1.00	2.76	1.76	.38
Girl-girl		1.15	2.64	1.69	.37
Affective Empathy***	0-4	1.50	3.93	2.94	.45
Boy-boy		1.50	3.36	2.69	.38
Girl-girl		2.29	3.93	3.19	.38
Cognitive Empathy**	0-4	.64	3.43	2.38	.49
Boy-boy		.64	3.14	2.23	.54
Girl-girl		1.64	3.43	2.54	.36
Empathic Action***	1-3	1.58	3.00	2.67	.24
Boy-boy		1.58	3.00	2.57	.27
Girl-girl		2.42	3.00	2.77	.14
<i>Dyad Difference Scores</i>					
Positive Friendship Quality		.00	2.23	.44	.41
Boy-boy		.03	2.23	.51	.47
Girl-girl		.00	1.28	.37	.32
Negative Friendship Quality		.00	2.27	.56	.44
Boy-boy		.00	1.82	.58	.43
Girl-girl		.04	2.27	.54	.45
Affective Empathy		.00	1.71	.52	.37
Boy-boy		.00	1.71	.57	.37
Girl-girl		.00	1.29	.47	.36
Cognitive Empathy		.00	2.29	.66	.46
Boy-boy		.00	1.71	.64	.44
Girl-girl		.00	2.29	.63	.49
Empathic Action*		.00	1.17	.29	.24
Boy-boy		.00	1.17	.35	.27
Girl-girl		.00	.83	.23	.19

Note. Significant gender differences are indicated with an asterisk: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. *Correlations between all study variables concerning the hypotheses*

	1	2	3	4	5	6	7	8	9	10
<i>Dyad Mean Scores</i>										
1. Positive Friendship quality	1									
2. Negative Friendship quality	-.065	1								
3. Affective Empathy	.516**	-.186	1							
4. Cognitive Empathy	.414**	-.104	.602**	1						
5. Empathic Action	.573**	-.110	.664**	.544**	1					
<i>Dyad Difference Scores</i>										
6. Positive Friendship quality	-.265*	-.161	-.027	-.040	-.093	1				
7. Negative Friendship quality	.048	.387**	-.038	-.085	-.142	.094	1			
8. Affective Empathy	-.102	-.154	-.270*	-.141	-.135	.086	-.030	1		
9. Cognitive Empathy	-.160	.145	-.137	.065	-.155	.126	.229*	.075	1	
10. Empathic Action	-.268*	-.007	-.382**	-.498**	-.572**	.150	.033	.164	.088	1

Note. Significant pearson correlations are indicated by an asterisk. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. *Intraclass correlations for the study variables*

	ICC	<i>p</i>
Friendship Quality		
Positive Friendship Quality	.319	.002
Negative Friendship Quality	.040	.361
Empathic Ability		
Cognitive Empathy	.216	.025
Affective Empathy	.336	.001
Empathic Action	.229	.019

Table 4. *Results of the multiple regression analysis predicting dyad mean scores of friendship quality from dyad mean scores of empathy*

	<i>t</i>	β	<i>df</i>	<i>F</i>	R ²	<i>p</i>
Positive Friendship Quality						
Overall model			5	12.827	.458	.000
Affective Empathy	.173	.023				.863
Cognitive Empathy	.759	.084				.450
Empathic Action	3.041	.362				.003
Gender	3.557	.363				.001
Age	.379	.033				.706
Negative Friendship Quality						
Overall model			5	.779	.049	.586
Affective Empathy	-1.205	-.212				.232
Cognitive Empathy	-.103	-.015				.918
Empathic Action	.331	.052				.742
Gender	.085	.011				.933
Age	1.057	.121				.294

Empathy and friendship quality

Hypothesis 1 predicted that friendships characterised by high levels of empathy would be friendships with high positive friendship quality and low levels of negative friendship quality. In order to answer this question, a multiple linear regression analysis was conducted to predict mean dyad scores of friendship quality from mean dyad scores on the empathy variables. The results are displayed in table 4. Results of the multiple linear

regression indicated that this model that predicts positive friendship quality from the three components of empathic skills (affective, cognitive and empathic action), gender and age was significant ($F(5, 76) = 12.827, p < .001; R^2 = .458$). The individual predictors were examined further and indicated that only empathic action ($t = 3.041, \beta = .362, p = .003$) and gender ($t = 3.557, \beta = .363, p = .001$) were significant predictors in the model. Empathy was not found to significantly predict negative friendship quality.

Table 5. Results of the multiple regression analysis predicting difference scores of friendship quality from difference scores of empathy.

	<i>t</i>	β	<i>df</i>	<i>F</i>	R^2	<i>p</i>
<i>Positive Friendship Quality</i>						
Overall model			5	1.582	.035	.175
<i>Affective Empathy</i>	.422	.047				.674
<i>Cognitive Empathy</i>	1.263	.140				.210
<i>Empathic Action</i>	1.058	.121				.293
Gender	.995	.114				.323
Age	-1.792	-.200				.077
<i>Negative Friendship Quality</i>						
Overall model			5	1.053	.065	.393
<i>Affective Empathy</i>	-.469	.640				.640
<i>Cognitive Empathy</i>	2.167	.033				.033
<i>Empathic Action</i>	.164	.870				.870
Gender	.330	.742				.742
Age	-.776	.440				.440

Note. Italics indicates that the variables are dyad difference scores

Similarity

Regarding hypothesis 2, the expectation was that the similarity of the empathy scores of both friends would predict the similarity of their friendship quality scores. The regression analysis did not find that similarity in how both of the friends in the friendship rated their empathy levels predicted more similar friendship quality scores. This finding was neither significant for positive nor negative friendship quality as can be seen in table 5.

Empathic similarity and friendship quality

In hypothesis 3 we expected to find that friendships with highly similar scores on empathy would be friendships reporting high friendship quality. When viewing the model with only the empathy scores as predictors, the model was trend significant and empathic action was the only variable to significantly contribute to the model. However, when gender and age was added to the model, the effect of empathic action disappears. The previous effect of empathic action similarity is thus driven by the finding that girls are more similar to their friends than boys in empathic action scores. The results of the model can be seen in table 6. This suggests that positive friendship quality is predicted more by gender than by similarity of empathy scores in a dyad.

Table 6. Results of the multiple regression analysis predicting mean scores of friendship quality from difference scores of empathy

	<i>t</i>	β	<i>df</i>	<i>F</i>	R ²	<i>p</i>
Positive Friendship Quality						
Overall model			5	8.169	.350	.000
<i>Affective Empathy</i>	.047	.004				.962
<i>Cognitive Empathy</i>	-1.565	-.147				.122
<i>Empathic Action</i>	-1.341	-.130				.184
Gender	5.372	-.520				.000
Age	.418	.039				.677
Negative friendship Quality						
Overall model			5	1.218	.074	.309
<i>Affective Empathy</i>	-1.623	-.183				.109
<i>Cognitive Empathy</i>	1.283	.144				.203
<i>Empathic Action</i>	-.299	-.035				.766
Gender	1.238	.143				.220
Age	.913	.103				.364

Note. Italics indicates that the variables are dyad difference scores

Discussion

The current study investigated the association between empathy and friendship quality in children and adolescents. As data was collected from both friends in a friendship this enabled the investigation at a dyadic level. This made it possible to inspect the mean levels of empathy and friendship quality at the friendship level, rather than at the individual level. Similarly, it was possible to investigate similarity of the two friends based on difference scores on our variables of interest. The first expectation was that the empathy in friendships (based on mean level of empathy reported by two friends) would predict friendship quality (again based on mean level of positive and negative friendship quality reported by two friends). This expectation was confirmed by our findings: empathy at dyadic level was strongly predictive of positive friendship quality. The second expectation was concerning the similarity of the two friends in the dyad, that a high similarity in empathy scores would predict a high similarity in friendship quality scores. The findings here did not provide support for this hypothesis. Thirdly, a prediction was made that high similarity in empathy scores would predict high positive friendship quality and low negative friendship quality. Although initial analysis showed support for this relationship, further inspection found that this was not a robust finding. This study adds weight to previous literature which has underlined empathy as a vital component in positive friendship quality through late childhood and adolescence.

Empathy and friendship quality

The first hypothesis was that high levels of empathy would predict higher positive friendship quality and lower levels of negative friendship quality. When inspecting which type of empathy (affective empathy, cognitive empathy or empathic action) most strongly predicted friendship quality, empathic action was the only type of empathy found to be a significant predictor. The analysis found that this was a robust effect which remained after

controlling for age and gender. Although only empathic action was found to predict positive friendship quality, all three aspects were strongly correlated to positive friendship quality but not with negative friendship quality. This finding is concurrent with prior research (Overgaauw, Rieffe, Broekhof, Crone, & Güroğlu, 2017). The study by Overgaauw and colleagues also finds each aspect of empathy to be correlated with friendship quality and interestingly, their measure of empathic action was the only empathic aspect to show a mediation between positive views of friendship quality and preference of their friend in the dyad. This strong correlation between empathy and positive friendship quality is reflective of developmental literature which characterises adolescent friendships as being more intimate, and needing more complex social skills (Buhrmester, 1990). Empathic action refers to the specific behaviours a person makes to help others while being informed by an accurate understanding of that person's social-emotional needs (Lietz, 2011). Thus, for empathic action to take place, it could be that empathic understanding at the cognitive or affective level must already be present to prompt the action.

This finding that empathic action predicts positive friendship quality indicates that perhaps it is the behaviours which friends employ in their interactions that are more important than the cognitive understanding or the affective sharing. This can be viewed in line with studies into pro-social behaviour which have also highlighted the value of social behaviours intended to benefit others on adolescent friendship quality (Markiewicz, Doyle, & Brendgen, 2001; Meuwese, Cillessen, & Güroğlu, 2017).

Similarity

The findings did not support the second hypothesis that predicted that empathic similarity of friends would predict similarity in reports of friendship quality. Only one significant relationship was found when inspecting the correlations of the similarities, which was that differences in cognitive empathy were related to differences in how friends rated the

negative aspects of their friendship quality. It is important to note here that cognitive empathy is not only related to positive outcomes in friendship, some studies have found that high levels of cognitive empathy are related to bullying and manipulation (Cheng, Hung, & Decety, 2012). This could be one explanation for a relationship between cognitive empathy differences and negative friendship quality differences, for instance if one friend in the dyad behaves in a manipulative way due to higher levels of cognitive empathy, it could result in a higher perception of negative friendship quality by the other friend. From a developmental perspective, this relationship may be seen in adolescence as the development of a deeper understanding of social interactions and others thoughts and emotions allows them to capitalise their newly developed social skills to achieve goals and gather social resources for themselves at the expense of others (Hawley, 2003). However, as this was not a robust finding, further research is needed to determine whether this is cognitive empathy which allows for these behaviours, or perhaps a separate aspect of social understanding. One explanation for why no other significant relationships were found here could be due to the fact that this study was examining best-friendships. Therefore, as the intraclass correlations demonstrated, there was generally a high similarity between the two friends and a low variance in the scores. This finding may have been different if it were concerning less close friends.

Empathic similarity and friendship quality

The hypothesis 3 inspected whether the similarity in empathy levels between the two friends was related to their friendship quality. The results showed that those dyads with more similar scores for empathic action had higher levels of positive friendship quality. As the empathic action aspect of empathy is characterised by more behavioural displays of empathy such as helping, this finding suggests that both individuals in friendship having a similar propensity to act empathically may increase the positive quality of a friendship. This is

somewhat in line with research which has shown that behavioural similarities are an important predictor for the creation and maintenance for friendships. Behavioural similarity within a friendship predicts the stability of the friendship (Hafen, Laursen, Burk, Kerr, & Stattin, 2011). Importantly however, this finding was not robust. When the regression controlled for gender, the effect of the dyadic difference in empathic action disappeared. It was the fact that the scores in the girl-girl dyads were more similar than the boys which caused the previously stated effect.

Gender effects

Although there was no formal hypothesis for gender differences, this leads to one of the most important findings in the study; that gender predicted positive friendship quality. Apart from the dyadic mean level of empathic action, it was being a girl which most significantly predicted high positive friendship quality. Previous studies have also found that positive friendship quality is significantly higher in girls than in boys (Bukowski, Hoza, & Boivin, 1994; Overgaauw, Rieffe, Broekhof, Crone, & Güroğlu, 2017). This may be linked to a developmental differences between adolescent boys and girls. Girls friendships have been found to be more supportive with more importance placed on equality and empathy, whereas boys are show higher levels of competition and control throughout adolescence (De Goede, Branje, & Meeus, 2009). The current study clearly opens the way for further research into the effects of gender in the relationship between empathy and friendship quality.

Limitations and further directions

The friendships that were assessed in this study were best friends, which meant that there was not much variance in the scores. Most friendships were rated highly positive with low levels of negative friendship quality, as is to be expected with best friends. For instance, contrary to our hypotheses, negative friendship quality was not found to be related to empathy. This could be because best-friendships are usually low in negative quality, leaving

little variance to find significant results. Previous literature has highlighted the significant difference in friendship quality and prosocial behaviours regard their best friends compared to other peers (Schreuders, Smeekens, Cillessen, & Güroğlu, 2019). Future studies could investigate the effect of empathy on non-best friend friendships, as if there is indeed more variance there may be important findings in regard to negative friendship quality as well as positive. This small variance may also explain the lack of age differences found in this study.

The measures used in this study were based on self-reports of empathy and friendship quality. An integration of other methods such as behavioural observations or experimental manipulation may obtain more accurate results. Rather than relying on individual level reports to extrapolate dyadic scores, observations of friendship dyads will allow researchers to assess the levels of friendship quality and empathy through measuring the interaction between the two friends in a dyad. This would be helpful for future research to focus on the friendship relationship itself rather than the friends' perception of it.

Conclusion

In conclusion, the findings of this study underline the importance of empathy in friendships by reinforcing the association between empathy and positive friendship quality. Behaviours to benefit a friend based on an understanding of their thoughts and perspectives, are crucial for positive friendship quality. Therefore, interventions aiming to capitalise on the social emotional benefits of high quality friendships, should employ techniques aimed at promoting empathic behaviours, and where possible, dyadically rather than individually. Although there were no robust findings concerning similarity in empathy or in friendship quality, the associations which were found are worthy of further future investigation. These future investigations may be wise to take gender into account as the differences in empathy and positive friendship quality for boys and girls were pronounced.

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