



# The Independent Associations of Attachment Representations to Parents and Depressive Symptoms with Friendships and Romantic Relationships in Young Adults

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## Abstract

The formation of friendships and romantic relationships represents an important developmental task in young adulthood. However, little is known about the potential factors associated with the quality of these interpersonal relationships. This cross-sectional study aimed to examine whether attachment representations to parents and depressive symptoms were independently associated with the quality of friendships and romantic relationships. Using the Prolific platform, 196 young adults ( $M$  age = 22.01 years,  $SD$  = 1.62) participated in the study. Each participant reported their attachment representations to mother and father and depressive symptoms through the Inventory of Parent and Peer Attachment and Patient Health Questionnaire 8, respectively. Positive (companionship, intimate disclosure, emotional support, approval, and satisfaction) and negative (conflict, criticism, pressure, exclusion, and dominance) dimensions of relationship quality with a close friend and a romantic partner were assessed with the Network of Relationships Inventory-Relationship Quality Version. Results showed that secure attachment representations to mother (but not father) were significantly associated with increased emotional support, approval, and satisfaction in romantic relationships, even after controlling for gender and depressive symptoms. Increased depressive symptoms were significantly associated with more conflict, criticism, and pressure in friendships, above and beyond gender and attachment representations to parents. There was a significant interaction between gender and depressive symptoms in predicting friendship quality. Men with increased depressive symptoms reported more conflict and dominance. No significant effects were found for women. These findings underscore the importance of secure attachment representations to mother in predicting healthy romantic relationships and depressive symptoms in predicting problematic friendships, especially for men.

**Keywords** Friendships · Romantic relationships · Attachment representations to mother · Attachment representations to father · Depressive symptoms · Young adults

## Introduction

Young adulthood (defined here as ages 18–24) is one of the crucial stages in identity development, where interpersonal relationships play a central role in achieving this psychosocial task (Arnett, 2000; Berry, 2004; Erikson, 1968). Friendships and romantic relationships are identified as important social networks for young adults (Camirand & Poulin, 2022). Friendship refers to a dyadic relationship between

two people who share most of their feelings, experiences, interests, and values with each other (Berndt, 2002), while a romantic relationship is a mutual and voluntary interaction between two partners characterised by expressions of affection and intimacy (Raymond & Poulin, 2023). Young people tend to spend significantly more time with their friends when they live independently, and this relationship can be the primary source of companionship in their lives (Chen et al., 2022; Langheit & Poulin, 2022). Young adults also identify romantic partners as their closest friends and view their partners as providing similar or greater support than parents (Li et al., 2023; Santona et al., 2019; Tolmacz et al., 2022).

It is established that attachment representations to parents play an important role in young adults' interpersonal relationships (Cherrier et al., 2023; Miljkovitch et al., 2021).

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Bowlby (1988) theorized that working models of secure relations with parents early in life serve as a foundation for future close relationships with others and pointed to the significance of insecure attachment representations to parents in predicting poor-quality interpersonal relationships. Individuals with insecure attachment representations to parents have higher distrust and are less able to maintain good affection with their friends and tend to be emotionally disconnected and avoid reciprocal interactions with their romantic partners (Carcedo et al., 2023; Chen et al., 2021; Jiao & Segrin, 2022; McGinley & Evans, 2020). In addition, prior work has shown that young adults who were insecurely attached to their parents reported fewer positive feelings and lower satisfaction with their friends, decreased intimacy with intimate partners, and increased difficulties in maintaining romantic relationships (Cherrier et al., 2023; Miljkovitch et al., 2021). Attachment representations to mother were more predictive of romantic relationship quality in young adults than attachment representations to father (Pfleger, 2009). However, prior research has provided support that secure attachment representations to father were associated with healthy romantic relationships, independent of secure attachment representations to mother (Dalton et al., 2006). Young people with secure attachment representations to father demonstrated a higher quality romantic relationship and were better at building close relationships with their intimate partners above and beyond secure attachment representations to mother (Dalton et al., 2006).

Depressive symptoms are another key factor in predicting young adults' dysfunctional interpersonal relationships (Hammen & Shih, 2014). Young adults are susceptible to experiencing depression (Brandy et al., 2015; Potrebny et al., 2024). The United Kingdom's national statistics data in 2022 revealed that compared to other age groups, people aged 16–29 were most likely to experience depression (28%), increasing from 17% in 2021, and women were more likely to be depressed than men (Office for National Statistics [ONS], 2022). Young adults with depression have shown decreased responsiveness and positive interactions with their friends and increased breakups in their romantic relationships (Kupferberg et al., 2016; Sharabi et al., 2016). These findings are in line with interpersonal and stress generation theories of depression positing that individuals with depression are more likely to generate interpersonal stress, and consequently, could experience problems in interpersonal relationships (Coyne, 1976; Hames et al., 2013; Hammen, 1991; Hammen & Peters, 1978). There is evidence to suggest that gender moderates the associations between depressive symptoms and interpersonal relationships, where stronger associations were found in women than in men, especially in romantic relationships (Gadassi et al., 2011). Women with depressive symptoms experienced more conflict in their romantic relationships than men with depressive

symptoms (Gadassi et al., 2011). Despite this, some studies have shown that men with depression demonstrated higher levels of violence and aggressive behaviour, were more likely to withdraw socially and were less supportive to their romantic partner than women with depression (Schneider, 2014; Shi et al., 2021).

Insecurity of attachment to parents and depressive symptoms can contribute to difficulties in friendships and romantic relationships but difficulties in friendships and romantic relationships can also contribute to insecurity of attachment to parents and increased depressive symptoms (Goodman et al., 2019; Rudolph et al., 2008). Support has been provided that early insecure attachment representations to parents predicted later low-quality romantic relationships, and early low-quality romantic relationships predicted later development of young adults' insecure attachment representations to parents (Suh & Fabricius, 2020). There is also evidence to suggest that higher depressive symptoms predicted increased friendship and romantic relationship problems, and increased friendship and romantic relationship problems predicted subsequent depressive symptoms in young adults (Goodman et al., 2019). In another longitudinal study, depressive symptoms predicted low romantic relationship quality, but low romantic relationship quality did not significantly predict increased depressive symptoms (Joosten et al., 2022). While there is some evidence for bidirectional associations among these variables, previous studies have provided more support for the role of insecure attachment representations to parents and depression symptoms as predictors of poor-quality interpersonal relationships (Cherrier et al., 2023; Kupferberg et al., 2016; Miljkovitch et al., 2021; Sharabi et al., 2016). Based on the aforementioned evidence, this study focused on attachment representations to parents and depressive symptoms as predictors and the quality of friendships and romantic relationships as the outcomes.

There are significant associations between attachment representations to parents and depressive symptoms (Agerup et al., 2015). As discussed earlier, insecurity of attachment to parents was associated with higher depressive symptoms, and together predicted problematic interpersonal relationships (Goodman et al., 2019; Rudolph et al., 2008). It appears that shared variance between attachment representations to parents and depressive symptoms may account for the quality of friendships and romantic relationships. However, little attention has been paid to the independent associations of attachment representations to parents and depressive symptoms in predicting the quality of friendships and romantic relationships in young adults. It is likely that depressive symptoms predict difficulties in friendships and romantic relationships over and above insecurity of attachment to parents. Depressed individuals with increased depressive symptoms tend to seek reassurance from others excessively and experience higher irritability, anhedonia,

and difficulties in communicating and expressing their emotions, which might contribute to deteriorating interpersonal relationships (Bennett et al., 2005; Shepard & Rabinowitz, 2013; Starr & Davila, 2008; Williams et al., 2023).

Therefore, this study aimed to examine whether attachment representations to parents and current depressive symptoms were independently associated with the quality of friendships and romantic relationships in young adults. Based on the existing literature, the study also explored if there would be an interaction between depressive symptoms and gender in predicting the quality of friendships and romantic relationships. We examined positive and negative dimensions of friendship and romantic relationship qualities. Prior research indicated that the quality of interpersonal relationships is determined by distinctive positive and negative features, which can exist equally in one relationship, either with a best friend or a romantic partner (Berndt, 2002; Moirangthem & Thingujam, 2018; Persram & Konishi, 2023). It was hypothesised that insecure attachment representations to mother and father and increased depressive symptoms would be independently associated with decreased positive and increased negative dimensions of friendship and romantic relationship qualities, and that depressive symptoms would explain additional variance in the quality of friendships and romantic relationships, above and beyond attachment representations to parents. As the second aim was exploratory, no prior hypothesis was made in relation to the moderating role of gender in the associations between depressive symptoms and the quality of friendships and romantic relationships.

## Methods

### Participants

An a priori power analysis computed with G\*Power 3.1.9.7 resulted in a required sample size of 196 participants to test the hypotheses with a statistical power of 0.80, at a significance level of  $\alpha = 0.05$  (Faul et al., 2007). We powered our study to detect effects of  $f^2 = 0.04$ , equivalent to each hypothesised predictor in the hierarchical multiple regressions uniquely accounting for 4% of otherwise unexplained outcome variance. The assumed effect size corresponds to findings from previous research, which demonstrated a variability of small to medium effects on the associations of attachment representations to parents and depressive symptoms with friendships and romantic relationships (Bird et al., 2018; Gorrese & Ruggieri, 2012).

In this study, the sample consisted of 202 participants recruited through the Prolific platform. The inclusion criteria were age between 18 and 24, living in the UK, and being in a romantic relationship for at least one month.

As this study performed exploratory analyses of gender as a dichotomous moderator (due to low numbers of non-binary participants), 6 out of 202 eligible participants were excluded, leaving 196 participants in the final sample. Among these participants, the majority were White, women, heterosexual, born in the UK, had completed an undergraduate degree, had a student status, and had a same-sex best friend. The relationships ranged from 5 to 276 months for friendships and 1–120 months for romantic relationships. Table 1 presents the demographic characteristics of the participants.

**Table 1** Demographic characteristics of the study's participants

Demographic characteristics	Total sample ( $n = 196$ )
	<i>M (SD)</i>
Age (years)	22.01 (1.62)
Length of relationship (months)	
Friendship	100.33 (62.89)
Romantic relationship	34.22 (24.23)
	<i>n (%)</i>
Gender	
Men	78 (39.8)
Women	118 (60.2)
Ethnicity	
White	165 (84.2)
Black or African American	5 (2.6)
Asian	19 (9.7)
Other	7 (3.6)
Country of birth	
UK	164 (83.7)
Non-UK	32 (16.3)
Education	
No formal qualifications	2 (1.0)
Secondary qualification (GED/GCSE)	10 (5.1)
High school diploma/ A-levels	63 (32.1)
Technical/ community college	12 (6.1)
Undergraduate degree (BA/BSc/other)	93 (47.4)
Graduate degree (MA/MSc/MPhil/other)	16 (8.2)
Student status	
Yes	106 (54.1)
No	90 (45.9)
Sexuality	
Heterosexual	151 (77.0)
Same sex/gay	13 (6.6)
Bisexual	30 (15.3)
Asexual	2 (1.0)
Same-sex best friend	
Yes	166 (84.7)
No	30 (15.3)

## Procedure

Each participant was asked to independently complete a battery of Qualtrics-built questionnaires. Participants were provided with an information sheet explaining the nature of the study and informing them that their participation was voluntary. Once they agreed to participate, digital informed consent was requested. The confidentiality of the data was maintained throughout the study. A list of resources for mental health support was provided (e.g., Samaritans, Relate, and NHS Mental Health Services). All participants were compensated with £5 deposited into their PayPal accounts. Ethical approval was granted by the ethics committee of the research team's institution (Reference Number: 1810151).

## Measures

### Attachment Representations to Parents

Attachment representations to parents were measured using the Inventory of Parent and Peer Attachment (IPPA; Arnsden & Greenberg, 1989). This scale consists of 25 items for mother and father, respectively. It captures three domains of attachment representations, including mutual trust (10 items), quality of communication (9 items), and feeling of alienation (6 items). Participants rated their responses on a 5-point Likert scale ranging from 1 (*almost never or never true*) to 5 (*almost always or always true*). After reverse-scoring ten negatively worded items, all items were summed. Higher scores indicate higher levels of secure attachment representations to parents. Previous research has indicated that the IPPA's internal consistency is comparable for mothers and fathers (Calderon Leon et al., 2022). In this study, the alpha coefficients for mother and father were excellent ( $\alpha=0.97$  for representations of attachment to mother;  $\alpha=0.97$  for representations of attachment to father).

### Depressive Symptoms

Depressive symptoms were measured using the Patient Health Questionnaire 8 (PHQ-8; Kroenke et al., 2009). It consists of 8 items, and each participant was asked to rate their responses on a 4-point Likert ranging from 0 (*not at all*) to 3 (*nearly every day*). The total score ranges between 0 and 24 with five levels of categorisation (0–4 = no significant depressive symptoms; 5–9 = mild; 10–14 = moderate; 15–19 = moderately severe; and 20–24 = severe). Four per cent of our participants experienced severe depressive symptoms. Previous studies have showed that the PHQ-8 has excellent reliability (Cadigan et al., 2023; Jones et al., 2022). In this study, coefficient alpha was 0.87.

## Quality of Friendships and Romantic Relationships

Quality of friendships and romantic relationships were measured using the Network of Relationships Inventory-Relationship Quality Version (NRI-RQV; Buhrmester & Furman, 2008). This 30-item questionnaire has ten sub-scales with three items each. It assesses five positive (companionship, intimate disclosure, emotional support, approval, and satisfaction) and five negative (conflict, criticism, pressure, exclusion, and dominance) dimensions of relationship quality. Each item is scored on a 5-point Likert scale ranging from 1 (*never or hardly at all*) to 5 (*always or extremely much*). The participants rated their responses separately for a close friend and a romantic partner. The mean of the three items for each subscale was calculated. Higher scores in positive dimensions reflect more positive relationships, while higher scores in negative dimensions indicate more problems. Previous studies have reported satisfactory reliability for the NRI-RQV (e.g., Costello et al., 2023; Elahe et al., 2017; Grossmann et al., 2023). In this study, coefficient alphas ranged from 0.63 to 0.89 for friendships ( $\alpha=0.75$ –0.89 for positive dimensions;  $\alpha=0.63$  to 0.85 for negative dimensions) and 0.63–0.90 for romantic relationships ( $\alpha=0.77$ –0.90 for positive dimensions;  $\alpha=0.63$ –0.90 for negative dimensions).

## Data Analytic Plan

All analyses were conducted with JAMOVI software version 2.3.21.0. Preliminary analyses were performed to check for data integrity, unreasonable responses, outliers, and normality of distribution. Pearson's correlations were undertaken to explore the correlations among study variables. Following this, a series of hierarchical multiple regressions was run to determine the independent associations of attachment representations to parents and depressive symptoms to the quality of friendships and romantic relationships, controlling for gender. Gender was entered in Step 1, attachment representations to father and mother were entered in Step 2, and (mean-centred) depressive symptoms were entered in Step 3. In the fourth step, the interaction term between (mean-centred) depressive symptoms and gender was entered. Simple slope analyses were then performed to probe the nature of any interactions. Separate analyses were conducted in the regression models for both positive and negative dimensions of friendships and romantic relationships, with variables entered in the same order.

## Results

The normality of data distribution found the values of skewness ranged between  $-1.80$  and  $1.52$ , which was considered acceptable (George & Mallery, 2010). Table 2 presents the

results of Pearson's correlations showing the correlations of attachment representations to parents and depressive symptoms with positive and negative dimensions of friendships and romantic relationships. In terms of friendships, secure attachment representations to father were positively correlated with companionship, while secure attachment representations to mother were positively correlated with companionship and negatively correlated with exclusion. In terms of romantic relationships, secure attachment representations to father were positively correlated with approval and satisfaction. Secure attachment representations to mother were positively correlated with companionship, intimate disclosure, emotional support, approval, and satisfaction, and negatively correlated with criticism, pressure, and exclusion. Moreover, depressive symptoms were positively correlated with conflict and pressure in friendships, and negatively correlated with satisfaction in romantic relationships. Several dimensions in friendships and romantic relationships were highly intercorrelated in the expected direction ( $r = .45$  to  $1.84$ ) for friendship dimensions;  $r = 1.33$ – $1.80$  for romantic relationship dimensions).

Diagnostic analyses revealed that the regression models contained no influential outliers (all Cook's distances  $< 1$ ). The assumptions of linearity, homoscedasticity, and multicollinearity were also not violated ( $r < 0.70$ , tolerance  $> .10$ , VIF  $< 10$ ). Tables 3, 4 present the hierarchical multiple regressions showing the associations of attachment representations to parents and depressive symptoms with the positive and negative dimensions of friendships. In Step 1, gender accounted for a significant amount of variance in all dimensions except companionship. In Step 2, after controlling for gender, the addition of attachment representations to mother and father did not explain significant additional variance in any dimensions (companionship:  $\Delta R^2 = .01$ ; intimate disclosure:  $\Delta R^2 = .01$ ; emotional support:  $\Delta R^2 < .01$ ; approval:  $\Delta R^2 < .01$ ; satisfaction  $\Delta R^2 = .01$ ; conflict:  $\Delta R^2 < .01$ ; criticism:  $\Delta R^2 < .01$ ; pressure:  $\Delta R^2 < .01$ ; exclusion:  $\Delta R^2 = .02$ ; and dominance:  $\Delta R^2 < .01$ ). In Step 3, depressive symptoms significantly increased the variance explained in conflict ( $\Delta R^2 = 0.02$ ,  $F(1, 191) = 4.86$ ,  $p < 0.05$ ), criticism ( $\Delta R^2 = 0.02$ ,  $F(1, 191) = 4.49$ ,  $p < 0.05$ ), and pressure ( $\Delta R^2 = 0.02$ ,  $F(1, 191) = 4.97$ ,  $p < 0.05$ ), above and beyond gender and attachment representations to parents, but did not significantly increase the variance explained in companionship ( $\Delta R^2 < .01$ ), intimate disclosure ( $\Delta R^2 < .01$ ), emotional support ( $\Delta R^2 < .01$ ), approval ( $\Delta R^2 < .01$ ), satisfaction ( $\Delta R^2 = .01$ ), exclusion ( $\Delta R^2 < .01$ ), and dominance ( $\Delta R^2 = .01$ ).

In the final step, the interaction between gender and depressive symptoms did not significantly increase the variance explained for companionship ( $\Delta R^2 < .01$ ), intimate disclosure ( $\Delta R^2 < .01$ ), emotional support ( $\Delta R^2 < .01$ ), approval ( $\Delta R^2 < .01$ ), satisfaction ( $\Delta R^2 = .02$ ), criticism

( $\Delta R^2 = .02$ ), pressure ( $\Delta R^2 = .02$ ), and exclusion ( $\Delta R^2 = .01$ ), but did significantly increase the variance explained for conflict ( $\Delta R^2 = .03$ ,  $F(1, 190) = 7.48$ ,  $p < 0.01$ ) and dominance ( $\Delta R^2 = .02$ ,  $F(1, 190) = 4.87$ ,  $p < 0.05$ ), indicating that depressive symptoms were associated with conflict and dominance in friendships differently for men and women.

Figure 1 depicts the simple slope for the interaction between depressive symptoms and gender in predicting friendship conflict. Men with increased levels of depressive symptoms self-reported more conflict in friendships ( $b = .05$ ,  $SE = .01$ ,  $p < 0.001$ ), but no significant association was found in women ( $b = -.00$ ,  $SE = .01$ ,  $p = .85$ ).

Figure 2 shows the simple slope for the interaction between depressive symptoms and gender in predicting friendship dominance. Men with increased levels of depressive symptoms also self-reported more dominance in their best-friend relationships ( $b = .03$ ,  $SE = .01$ ,  $p < .05$ ), but no significant association was found in women ( $b = -.01$ ,  $SE = .01$ ,  $p = .35$ ).

Tables 5, 6 present the results from the hierarchical multiple regressions showing the associations of attachment representations to parents and depressive symptoms with positive and negative dimensions of romantic relationships. In Step 1, gender accounted for significant variance in intimate disclosure, emotional support, satisfaction, criticism, pressure, and dominance. In Step 2, after controlling for gender, the addition of attachment representations to mother and father accounted for a significant increase of variance explained in emotional support: ( $\Delta R^2 = .03$ ,  $F(2, 192) = 3.93$ ,  $p < 0.05$ ), approval: ( $\Delta R^2 = .05$ ,  $F(2, 192) = 5.03$ ,  $p < 0.01$ ), and satisfaction: ( $\Delta R^2 = .08$ ,  $F(2, 192) = 8.34$ ,  $p < .001$ ), but did not explain significant additional variance in companionship: ( $\Delta R^2 = .02$ ), intimate disclosure: ( $\Delta R^2 = .02$ ), conflict: ( $\Delta R^2 = .01$ ), criticism: ( $\Delta R^2 = .02$ ), pressure ( $\Delta R^2 = .02$ ), exclusion: ( $\Delta R^2 = .03$ ), and dominance ( $\Delta R^2 < .01$ ). Representations of secure attachment to mother were significantly associated with emotional support, approval, and satisfaction but there were no significant associations between attachment representations to father and these dimensions. In Step 3, depressive symptoms did not significant explain additional variance in any dimensions (companionship:  $\Delta R^2 < .01$ ; intimate disclosure:  $\Delta R^2 < .01$ ; emotional support:  $\Delta R^2 < .01$ ; approval:  $\Delta R^2 < .01$ ; satisfaction:  $\Delta R^2 < .01$ ; conflict:  $\Delta R^2 = .01$ ; criticism:  $\Delta R^2 < .01$ ; pressure:  $\Delta R^2 < .01$ ; exclusion:  $\Delta R^2 < .01$ ; and dominance:  $\Delta R^2 < .01$ ), above and beyond gender and attachment representations to parents. In this step, the regression coefficient for attachment representations to mother in emotional support, approval, and satisfaction remained statistically significant. In the last step, the interaction between gender and depressive symptoms did not explain significant additional variance in any romantic relationship dimensions (companionship:  $\Delta R^2 < .01$ ; intimate disclosure:  $\Delta R^2 = .01$ ; emotional support:  $\Delta R^2 < .01$ ;



**Table 2** Zero-order correlations of attachment representations to parents and depressive symptoms with friendships and romantic relationships

Friendships	<i>M</i> ( <i>SD</i> )	1	2	3	4	5	6	7	8	9	10	11	12
1	Mother attachment	91.32 (21.77)	–										
2	Father attachment	82.64 (23.53)	.37***	–									
3	Depressive symptoms	8.41 (5.46)	–.43***	–.30***	–								
4	Companionship	3.50 (.77)	.19**	.16*	–.08	–							
5	Intimate disclosure	3.73 (.88)	.11	.05	–.06	.40***	–						
6	Emotional support	3.56 (.90)	.03	.01	–.01	.44***	–						
7	Approval	3.80 (.74)	.03	.01	.02	.31***	.62***	–					
8	Satisfaction	4.27 (.74)	.12	.02	–.13	.51***	.48***	.53***	–				
9	Conflict	1.60 (.75)	–.08	–.06	.16*	.04	–.11	–.22**	–.32***	–			
10	Criticism	1.56 (.71)	–.07	–.05	.14	.01	–.18*	–.30***	–.36***	.71***	–		
11	Pressure	1.85 (.85)	–.06	–.05	.14*	.15*	–.02	–.12	–.15*	.60***	.59***	–	
12	Exclusion	1.82 (.74)	–.16*	–.06	.08	–.22**	–.18*	–.18*	–.45***	.42***	.41***	.33***	–
13	Dominance	2.37 (.76)	.01	–.01	.06	.18**	–.10	–.10	–.19*	.43***	.46***	.57***	.34***
Romantic relationships	<i>M</i> ( <i>SD</i> )	1	2	3	4	5	6	7	8	9	10	11	12
4	Companionship	4.40 (.62)	.20**	.13	–.10	–							
5	Intimate disclosure	4.41 (.68)	.15*	.06	–.03	.49***	–						
6	Emotional support	4.36 (.72)	.21**	.03	–.02	.50***	.80***	–					
7	Approval	4.17 (.72)	.21**	.17*	–.09	.53***	.58***	–					
8	Satisfaction	4.49 (.66)	.28***	.18*	–.18*	.64***	.58***	.66***	–				
9	Conflict	2.21 (.79)	–.06	–.12	.13	–.19**	–.13	–.15*	–.34***	–.44***	–		
10	Criticism	1.77 (.75)	–.15*	–.06	.09	–.20**	–.26***	–.35***	–.37***	–.40***	.62***	–	
11	Pressure	1.97 (.81)	–.15*	–.09	.07	–.15*	–.26***	–.37***	–.23**	–.25***	.33***	.55***	–
12	Exclusion	1.74 (.75)	–.16*	–.08	.11	–.33***	–.27***	–.30***	–.30***	–.36***	.49***	.57***	.51***
13	Dominance	2.53 (.73)	–.05	–.01	–.04	–.08	–.19**	–.25***	–.12	–.19**	.32***	.45***	.58***
													.32***

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 3** Multiple hierarchical regressions showing the associations of attachment representations to parents and depressive symptoms with positive dimensions of friendships (n = 196)

Predictors	Companionship			Intimate disclosure			Emotional support			Approval			Satisfaction		
	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$
Step 1															
Gender	-.02	.11	-.02	.48	.12	.55***	.49	.13	.55***	.39	.10	.53***	.22	.11	.29*
Step 2															
Gender	-.04	.11	-.05	.47	.12	.54***	.49	.13	.55***	.39	.11	.52***	.20	.11	.27
Mother attachment	.00	.00	.15	.00	.00	.08	.00	.00	.02	.00	.00	.02	.00	.00	.12
Father attachment	.00	.00	.10	.00	.00	.01	-.00	.00	-.01	-.00	.00	-.01	-.00	.00	-.03
Step 3															
Gender	-.04	.11	-.05	.48	.12	.54***	.49	.13	.55***	.38	.10	.52***	.21	.11	.29*
Mother attachment	.00	.00	.15	.00	.00	.07	.00	.00	.01	.00	.00	.03	.00	.00	.08
Father attachment	.00	.00	.11	.00	.00	.01	-.00	.00	-.01	-.00	.00	-.00	-.00	.00	-.05
Depressive symptoms	.00	.01	.01	-.00	.13	-.04	-.00	.01	-.02	.00	.01	.03	-.02	.01	-.12
Step 4															
Gender	-.04	.11	-.05	.48	.12	.54***	.49	.13	.55***	.38	.11	.52***	.21	.11	.29*
Mother attachment	.00	.00	.16	.00	.00	.08	.00	.00	.02	.00	.00	.03	.00	.00	.10
Father attachment	.00	.00	.11	.00	.00	.01	-.00	.00	-.01	-.00	.00	-.00	-.00	.00	-.05
Depressive symptoms	-.00	.02	-.04	-.02	.02	-.11	-.01	.02	-.09	-.00	.02	-.01	-.04	.02	-.28**
Depressive symptoms X Gender	.01	.02	.09	.02	.02	.13	.02	.02	.13	.01	.02	.07	.04	.02	.27
Model statistics	$R^2 = .02$ , $F(5,190) = 1.86$			$R^2 = .09$ , $F(5,190) = 3.56^{**}$			$R^2 = .08$ , $F(5,190) = 3.22^{**}$			$R^2 = .07$ , $F(5,190) = 2.80^*$			$R^2 = .06$ , $F(5,190) = 2.51^*$		

Gender coded 0 = men, 1 = women  
\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

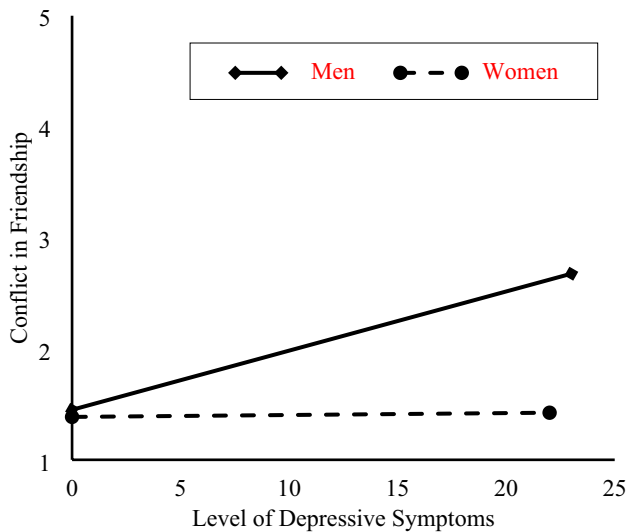
**Table 4** Multiple hierarchical regressions showing the associations of attachment representations to parents and depressive symptoms with negative dimensions of friendships (n = 196)

Predictors	Conflict			Criticism			Pressure			Exclusion			Dominance		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Step 1															
Gender	-.48	.10	-.65***	-.56	.09	-.79***	-.64	.12	-.76***	-.33	.11	-.44**	-.27	.11	-.35*
Step 2															
Gender	-.48	.10	-.64***	-.56	.09	-.78***	-.64	.12	-.76***	-.31	.11	-.42**	-.27	.11	-.36*
Mother attachment	-.01	.00	-.04	-.00	.00	-.03	-.00	.00	-.02	-.00	.00	-.14	.00	.00	.03
Father attachment	-.01	.00	-.04	-.00	.00	-.03	-.00	.00	-.04	-.00	.00	-.01	-.00	.00	-.01
Step 3															
Gender	-.49	.10	-.66***	-.57	.09	-.80***	-.66	.12	-.78***	-.32	.11	-.43**	-.28	.11	-.37*
Mother attachment	.00	.00	.02	.00	.00	.03	.00	.00	.04	-.00	.00	-.13	.00	.00	.07
Father attachment	-.00	.00	-.01	-.00	.00	-.00	-.00	.00	-.01	-.00	.00	-.01	.00	.00	.00
Depressive symptoms	.02	.01	.17*	.02	.01	.16*	.03	.01	.17*	.00	.01	.02	.01	.01	.10
Step 4															
Gender	-.49	.10	-.66***	-.57	.09	-.80***	-.66	.11	-.77***	-.31	.11	-.43**	-.28	.11	-.37*
Mother attachment	-.00	.00	-.01	.00	.00	.01	.00	.00	.02	-.00	.00	-.15	.00	.00	.04
Father attachment	-.00	.00	-.01	-.00	.00	-.00	-.00	.00	-.01	-.00	.00	-.00	.00	.00	.01
Depressive symptoms	.05	.02	.38***	.04	.01	.28	.05	.02	.32**	.02	.02	.15	.04	.02	.28*
Depressive symptoms X Gender	-.05	.02	-.38**	-.03	.02	-.21	-.04	.02	-.26	-.03	.02	-.22	-.04	.02	-.32*
Model statistics	$R^2 = .16$ , $F(5,190) = 7.28***$			$R^2 = .18$ , $F(5,190) = 8.40***$			$R^2 = .18$ , $F(5,190) = 8.33***$			$R^2 = .08$ , $F(5,190) = 3.29**$			$R^2 = .06$ , $F(5,190) = 2.54*$		

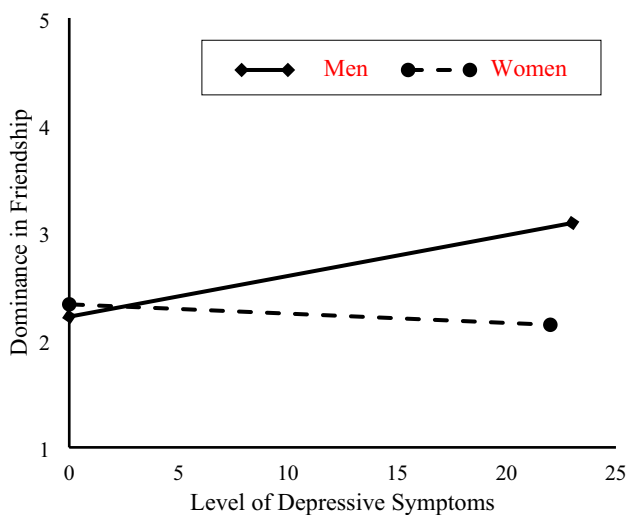
Gender coded 0 = men, 1 = women

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$





**Fig. 1** Simple slope for the interaction between depressive symptoms and gender in predicting conflict in friendships



**Fig. 2** Simple slope for the interaction between depressive symptoms and gender in predicting dominance in friendships

approval:  $\Delta R^2 < .01$ ; satisfaction:  $\Delta R^2 < .01$ ; conflict:  $\Delta R^2 < .01$ ; criticism:  $\Delta R^2 = .01$ ; pressure:  $\Delta R^2 < .01$ ; exclusion:  $\Delta R^2 < .01$ ; and dominance:  $\Delta R^2 < .01$ ).

## Discussion

This study examined the independent associations of attachment representations to parents and current depressive symptoms with the quality of friendships and romantic relationships in young adults. The findings revealed that secure attachment representations to mother (but not father)

were significantly associated with increased emotional support, approval, and satisfaction in romantic relationships even after controlling for gender and depressive symptoms. Increased depressive symptoms were significantly associated with more conflict, criticism, and pressure in friendships, above and beyond gender and attachment representations to parents. Additionally, there were significant interactions between gender and depressive symptoms in predicting the quality of friendships. Men (but not women) with increased depressive symptoms reported more conflict and perceived more dominance in their friendships.

In this study, secure attachment representations to mother were associated with increased emotional support, approval, and satisfaction in romantic relationships. It seems that young adults with secure attachment representations to mother might be able to develop positive qualities in their romantic relationships. This finding is consistent with prior research that has shown that young adults who were securely attached to their mother were often better at providing emotional support and encouragement to their partner and were more satisfied in their intimate relationships compared to young adults who were insecurely attached to their mother (Li et al., 2023; Pflieger, 2009). Although small zero-order correlations between attachment representations to father with certain dimensions of romantic relationships were noted, representations of attachment to father were not significantly associated with romantic relationship quality when controlling for attachment representations to mother.

The results of this study revealed that increased depressive symptoms were associated with more conflict, criticism, and pressure in best-friend relationships after controlling for attachment representations to parents. This finding is in line with previous studies that have shown that young adults with depressive symptoms tend to exhibit more interpersonal distress and problems in friendships (Kupferberg et al., 2016). Young people with depression tend to have negative thought patterns and assume the worst intentions in their friends' actions, which could be associated with increased conflict (Kupferberg & Hasler, 2023; Segrin, 2000). Engaging in social interactions is also challenging for individuals with depression (Elmer & Stadfeld, 2020; Schwartz-Mette et al., 2021). Youth with increased depressive symptoms may experience more criticism from their friends, who may feel overwhelmed or unable to provide the necessary support when they notice their friend's sadness, hopelessness, or irritability (Hames et al., 2013).

Notably increased depressive symptoms explained additional variance in conflict, criticism, and pressure in friendships above and beyond insecure attachment representations to parents. Previous studies have indicated that insecurity of attachment to parents and depressive symptoms may account for shared variance in problems in friendships (Goodman et al., 2019; Rudolph et al., 2008). The findings of this study

**Table 5** Multiple hierarchical regressions showing the associations of attachment representations to parents and depressive symptoms with positive dimensions of romantic relationships (n = 196)

Predictors	Companionship		Intimate disclosure		Emotional support		Approval		Satisfaction						
	B	SE β	B	SE β	B	SE β	B	SE β	B	SE β					
Step 1															
Gender	.16	.09	.26	.37	.09	.54***	.58	.09	.81***	.17	.11	.24	.22	.09	.33*
Step 2															
Gender	.15	.09	.24	.36	.09	.52***	.56	.09	.79***	.15	.10	.21	.19	.09	.29*
Mother attachment	.00	.00	.15	.00	.00	.12	.00	.00	.19**	.00	.00	.16*	.01	.00	.23**
Father attachment	.00	.00	.06	.00	.00	.01	-.00	.00	-.05	.00	.00	.11	.00	.00	.09
Step 3															
Gender	.15	.09	.24	.36	.09	.52***	.56	.09	.78***	.15	.10	.21	.20	.09	.30*
Mother attachment	.00	.00	.15	.00	.00	.13	.00	.00	.21**	.00	.00	.17*	.01	.00	.20*
Father attachment	.00	.00	.06	.00	.00	.02	-.00	.00	-.04	.00	.00	.11	.00	.00	.08
Depressive symptoms	-.00	.01	-.02	.00	.01	.02	.00	.01	.05	.00	.01	.01	-.01	.01	-.07
Step 4															
Gender	.15	.09	.24	.36	.09	.52***	.56	.09	.78***	.15	.10	.21	.20	.09	.30*
Mother attachment	.00	.00	.15	.00	.00	.12	.00	.00	.21**	.00	.00	.16	.01	.00	.19*
Father attachment	.00	.00	.06	.00	.00	.02	-.00	.00	-.04	.00	.00	.11	.00	.00	.08
Depressive symptoms	.01	.01	.04	.01	.01	.11	.00	.01	.06	.01	.02	.06	.00	.01	.00
Depressive symptoms × Gender	-.01	.02	-.11	-.02	.02	-.16	-.00	.02	-.03	-.01	.02	-.09	-.02	.02	-.13
Model statistics	$R^2 = .05$ , $F(5,190) = 2.35^*$		$R^2 = .09$ , $F(5,190) = 3.93^{**}$		$R^2 = .19$ , $F(5,190) = 9.15^{***}$		$R^2 = .06$ , $F(5,190) = 2.63^*$		$R^2 = .11$ , $F(5,190) = 4.82^{***}$						

Gender coded 0 = men, 1 = women  
 \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 6** Multiple hierarchical regressions showing the associations of attachment representations to parents and depressive symptoms with negative dimensions of romantic relationships (n = 196)

Predictors	Conflict			Criticism			Pressure			Exclusion			Dominance		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Step 1															
Gender	-.10	.12	-.13	-.41	.11	-.54***	-.59	.11	-.74***	-.15	.11	-.20	-.47	.10	-.64***
Step 2															
Gender	-.09	.12	-.12	-.39	.11	-.52***	-.58	.11	-.72***	-.14	.11	-.18	-.47	.10	-.64***
Mother attachment	-.00	.00	-.02	-.00	.00	-.13	-.00	.00	-.11	-.01	.00	-.15	-.00	.00	-.05
Father attachment	-.00	.00	-.11	-.00	.00	-.00	-.00	.00	-.04	-.00	.00	-.03	.00	.00	.00
Step 3															
Gender	-.11	.12	-.14	-.39	.11	-.53***	-.58	.11	-.72***	-.14	.11	-.19	-.46	.10	-.63***
Mother attachment	.00	.00	.03	-.00	.00	-.11	-.00	.00	-.10	-.00	.00	-.13	-.00	.00	-.05
Father attachment	-.00	.00	-.09	.00	.00	.01	-.00	.00	-.04	-.00	.00	-.02	-.00	.00	-.00
Depressive symptoms	.02	.02	.12	.00	.01	.06	.03	.01	.02	.01	.01	.06	-.01	.01	-.05
Step 4															
Gender	-.11	.12	-.14	-.39	.11	-.53***	-.58	.11	-.72***	-.14	.11	-.19	-.46	.10	-.63***
Mother attachment	.00	.00	.01	-.00	.00	-.12	-.00	.00	-.10	-.01	.00	-.13	-.00	.00	-.06
Father attachment	-.00	.00	-.09	.00	.00	.01	-.00	.00	-.04	-.00	.00	-.02	.00	.00	.00
Depressive symptoms	.03	.02	.20	.02	.02	.15	.00	.02	.03	.01	.02	.10	-.00	.02	-.01
Depressive symptoms X Gender	-.02	.02	-.14	-.02	.02	-.17	-.00	.02	-.28	-.01	.02	-.07	-.01	.02	-.08
Model statistics	$R^2 = .03$ , $F(5,190) = 1.34$			$R^2 = .10$ , $F(5,190) = 4.12^{**}$			$R^2 = .15$ , $F(5,190) = 6.63^{***}$			$R^2 = .04$ , $F(5,190) = 1.55$			$R^2 = .10$ , $F(5,190) = 4.42^{**}$		

Gender coded 0 = men, 1 = women  
 \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

suggest that it is variance in depressive symptoms not shared with attachment representations to parents that could potentially contribute to conflict, criticism, and pressure in friendships. In other words, it seems that depressive symptoms make a unique contribution to negative friendship qualities beyond what can be attributed to insecure attachment representations to parents and points to the importance of depressive symptoms in young adults' problematic friendships.

The results of this study indicated that compared to women, men with increased depressive symptoms reported higher levels of conflict and perceived more dominance in their friendships. Studies have shown that men with depression have difficulty identifying and communicating their affective experience and tend to 'act out' through anger and opposition, which could drive conflict with their friends (Addis, 2008; Clarke & Van Amerom, 2008; Shepard & Rabinowitz, 2013; Smith et al., 2018; Williams et al., 2023). Prior studies have also shown that compared to women with depression, men with depression are more likely to withdraw socially and become less engaged and responsive in social settings, which might potentially lead their friends to take on more dominant roles (Bennett et al., 2005; Schacter et al., 2023).

The study has several strengths, including the inclusion of both positive and negative dimensions of friendship and romantic relationship qualities. However, the study has limitations. The study was cross-sectional, and the direction of associations could not be established. Even though the existing literature has provided evidence for early secure attachment representations to parents as a predictor of later healthy romantic relationships, prior studies have found that early healthy romantic relationships could predict more secure attachment representations to parents prospectively (Crowell et al., 2002; Gleeson & Fitzgerald, 2014). Similarly, although there is evidence to suggest that young adults are vulnerable to depressive symptoms and these are likely to predict poor friendships, there are studies to support that young adults with poor-quality friendships showed an increased likelihood of experiencing symptoms of depression (Lapierre & Poulin, 2022; Potrebny et al., 2024). Future studies should employ a longitudinal design to test, for example, if depressive symptoms are an outcome or a predictor of interpersonal relationships. Furthermore, all data relied on self-reports, which could have inflated associations among the study variables. Future research should use multi-informants to avoid the observed correlations being attributable to mood-related biases in how participants responded to the measures (Kosterman et al., 2010). While there was some evidence for associations, the effect sizes were small, which was consistent with previous studies indicating the associations were relatively weak and additional factors might play a more important role (Li et al., 2023; Pflieger, 2009). Also, any observed associations

involving relationship quality were likely to be attenuated by measurement error; the true effects could be considerably stronger than what was observed. The internal consistencies for the exclusion and dominance sub-scales of the NRI-RQV were only acceptable (exclusion:  $\alpha = 0.63$  for friendship and  $\alpha = 0.63$  for romantic relationship; dominance:  $\alpha = 0.69$  for friendship and  $\alpha = 0.66$  for romantic relationship); therefore, the results using these scales should be interpreted with caution. Given that all participants were recruited from a general population and only 4% had severe depressive symptoms, the findings may not generalise to clinical populations.

Overall, the findings suggest that secure attachment representations to mother were independently associated with increased positive dimensions of romantic relationship qualities. Current depressive symptoms were independently associated with increased negative dimensions of friendship qualities above and beyond attachment representations to parents, suggesting that depressive symptoms make a unique contribution to negative friendship qualities, especially in men.

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**Author Contributions** FF contributed substantially to the conception and design, data analysis, interpretation of data, manuscript write-up, and revising it critically for important intellectual content. NJM and LP provided guidance with study conception and design, data analysis, interpretation of data and analysis, and revising it critically for important intellectual content. All authors read and approved the final manuscript.

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**Data Availability** The research data supporting this publication are available on request from the University of Exeter's institutional repository at: <https://doi.org/10.24378/exe.5266>.

## Declarations

**Conflict of interest** This article's author(s) have reported no potential conflicts of interest in its research, authorship, and publishing.

**Ethics Approval** Approval was granted by the Ethics Committee of the University of Exeter (No. 1810151). The procedures used in this study adhere to the tenets of the Declaration of Helsinki and the British Psychological Society's Code of Ethics and Conduct.

**Consent to Participate** Informed consent was obtained from all individual participants included in the study.

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