



## **Research Article**

# **The role of emotional intelligence and emotion recognition ability in romantic relationship satisfaction of adults varying in autistic-like traits**

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## **Abstract**

Research suggests that emotional intelligence is important for relationship satisfaction. Some people face challenges with both romantic relationships and aspects of emotional intelligence, for example, autistic people. There has, however, been very limited research into these factors with non-clinical participants with varying levels of autistic-like traits. This research aimed to investigate the extent to which both general emotional intelligence and the specific component of emotion recognition mediated the relationship between autistic-like traits and satisfaction with romantic relationships, using a general population sample in two studies (Study 1,  $n = 139$ ; Study 2,  $n = 183$ ). The results of our studies found that emotional intelligence, but not emotion recognition, mediated the relationship between autistic-like traits and relationship satisfaction. This research provides novel insights into how emotional intelligence and autistic-like traits influence romantic relationship satisfaction and has implications for potential interventions.

**Keywords:** romantic relationships, autistic-like traits, emotional intelligence, emotion recognition.

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## Introduction

Being in a satisfying romantic relationship can have a number of benefits for both physical (Markey *et al.*, 2007) and mental health (Braithwaite & Holt-Lunstad, 2017). Individual differences in, for example, emotional intelligence, can influence the nature of, and satisfaction with these relationships (Malouff *et al.*, 2014). Emotional intelligence has been defined as “*the ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and others*” (Mayer *et al.*, 2000, p. 396). Research suggests that emotional intelligence is important in developing and sustaining satisfactory relationships. A systematic review by Schutte and colleagues (2001) found that those with higher emotional intelligence had higher scores in empathic perspective taking and self-monitoring; scored higher in social skills; exhibited more cooperative responses towards their partner; reported more close relationships; had higher scores for marital satisfaction and reported greater satisfaction in relationships. A later meta-analysis found a significant association between high emotional intelligence and romantic relationship satisfaction, with a medium effect size (Malouff *et al.*, 2014).

Researchers have also explored the role of emotion recognition as a specific component of emotional intelligence, in the context of interpersonal relationships. Much of this research has focused on the relationships of children, rather than romantic relationships, but it does indicate that, in general, emotion recognition skills are positively associated with peer status and friendships (see Wang *et al.*, 2019).

Some individuals, such as those with autism, are less likely to be romantically involved than their typically developing peers, even though many desire a romantic partner (Strunz *et al.*, 2017). One suggested reason for this is that autistic people have difficulties with a number of emotional intelligence related skills which are important in initiating and maintaining close interpersonal relationships. These include social communication, interacting with others, emotion recognition, and perspective-taking (See Strunz *et al.*, 2017). Indeed, many autistic people have been found to score significantly lower on some measures of emotional intelligence (Petrides *et al.*, 2011) and to be less accurate on emotion recognition tasks (Harms *et al.*, 2010) compared with individuals without autism. They may also have difficulty with areas that are linked to relationship satisfaction, such as understanding and responding to their partner’s needs (Reis, 2007). The extent of these difficulties may relate to the severity of their condition, with one study finding a negative association between the self-reported relationship satisfaction of wives and the severity of their husband’s autism (Renty & Roeyers, 2007).

People with a diagnosis of autism are considered to represent those with more extreme autistic-like traits. Such latent traits are considered to be distributed throughout the population to different degrees (Constantino & Todd, 2003), and constructs that are used to describe autistic traits in those with a clinical diagnosis, can be applied to those without an autism diagnosis (Murray *et al.*, 2014). Research has indicated that those

with higher levels of autistic-like traits may also experience relationship-related difficulties, such as more interpersonal problems (Wainer *et al.*, 2011).

There is, however, only limited research into romantic relationships and autistic-like traits. Jobe and White (2007) recruited a non-clinical sample and found that, while those who had more autistic-like traits were just as likely to be in a romantic relationship as those with fewer traits, they tended to report more general loneliness, potentially indicating that the relationships were less fulfilling for them. Pollmann *et al.*, (2010) also found similar indications of relationship dissatisfaction in a non-clinical sample, but these were gender specific. In their study of 195 married couples, higher levels of autistic-like traits in males, but not females, were related to lower relationship satisfaction. Partners of those with higher autistic-like traits (whether male or female) were not less satisfied with their relationship than partners of those with lower levels of autistic-like traits. The authors found that the association between autistic-like traits and satisfaction with the marital relationship was mediated by relationship-related factors, including trust in, intimacy with, and responsiveness towards, their partner. A similar result was found by Beffel *et al.*, (2021) who reported that higher levels of specific autistic-like traits were associated with greater dissatisfaction with romantic relationships, mediated by avoidance and/or anxiety in college students. Pruitt *et al.* (2018) found that relationship satisfaction mediated the association between autistic-like traits and mental health in mothers of children with a diagnosis of autism.

This small body of research indicates that autistic-like traits can be associated directly and indirectly with levels of relationship satisfaction. None of these studies, however, have looked at the role of emotional intelligence and emotion recognition in this context. The aim of the present study, therefore, is to investigate the extent to which autistic-like traits, emotional intelligence in general and emotion recognition in particular, influence romantic relationship outcomes in a non-clinical sample. It is hypothesised that emotional intelligence (Study 1) and emotion recognition (Study 2) will mediate the relationship between autistic-like traits and relationship satisfaction.

## **Method**

The research questions were explored in two related studies. Study 1 explored whether the relationship between autistic-like traits and relationship satisfaction was mediated by emotional intelligence. Study 2 explored whether the relationship between autistic-like traits and relationship satisfaction was mediated by emotion recognition.

## **Participants**

A convenience sample of adult volunteers were recruited using an online advert posted on social media and online psychology research websites. Interested participants

were provided with detailed participant information and the opportunity to record their informed consent. The research received full ethical approval from the Department of Psychology Ethics Committee of Northumbria University. Table 1 illustrates the demographic information of the participants in Study 1 ( $n = 139$ ) and Study 2 ( $n = 183$ ).

## Measures

All participants were asked to provide demographic information, as summarised in Table 1.

Table 1: Demographic information of participants in Study 1 and 2

	Study 1			Study 2		
	Mean	SD	Range	Mean	SD	Range
<b>Age</b>	27.6	12.5	18-63	41.4	10.4	18 - 71
<b>Gender</b> (male / female; $n / \%$ )	37 (26.6) / 102 (73.4)			18 (9.8) / 165 (90.2)		
<b>Ethnic origin</b> (white/British / other; $n / \%$ )	122 (89.1) / 15 (10.9)			175 (95.6) / 8 (4.4)		
<b>Occupation</b> (Employed / Student / Unemployed / other (e.g. retired); $n / \%$ )	45 (32.4) / 90 (64.7) / 3 (2.2) / 1 (0.7)			137 (74.9) / 10 (5.5) / 9 (4.9) / 27 (14.8)		
<b>Relationship status</b> (Married or with long-term partner / Single / Separated/divorced or other (e.g. widowed) / In relationship (not with long-term partner); $n / \%$ )	32 (23.0) / 53 (38.1) / 6 (4.2) / 48 (34.5)			127 (69.4) / 20 (10.9) / 11 (6.0) / 25 (13.7)		

The Autistic Spectrum Quotient (AQ; Baron-Cohen *et al.*, 2001) was used to assess autistic-like traits. This includes 50 items scored on a Likert scale from 1 (definitely disagree) to 4 (definitely agree) in which the individual responds in accordance to how much they agree with the statement. In the present study, participants were asked: “*indicate to what extent you agree with each statement*”. Responses were allocated a score of 0 or 1 (range 0-50), with a higher total score indicating more autistic-like traits. The AQ has previously been found to successfully measure autistic-like traits in non-clinical populations (Murray *et al.*, 2014) and to have moderate-to-high internal consistency (Baron-Cohen *et al.*, 2001). Participants also completed the Couples Satisfaction Index (CSI; Funk & Rogge, 2007). This contains 32 items which measure romantic relationship satisfaction. Participants responded to a series of items and

questions on varying Likert scales. Scores range between 0 – 161, where higher scores indicate a higher romantic relationship satisfaction level. The CSI has shown strong convergent and construct validity compared to other measures of relationship satisfaction, as well as providing greater power in smaller sample sizes (Funk & Rogge, 2007) and has very high internal consistency (Graham *et al.*, 2011). Only those who were currently in or who had previously been in a relationship completed the CSI.

### **Study 1**

The short-form Emotional Intelligence Questionnaire (TEIQue-SF; Petrides, 2009) was used to measure emotional intelligence. It consists of 30 statements to which participants respond on a Likert scale in relation to how much they agree with the statement, with a higher score indicating a higher level of emotional intelligence. The TEIQue-SF has good psychometric properties, including very good precision across the majority of the latent trait range, and high internal consistency (Cooper & Petrides, 2010).

### **Study 2**

Emotion recognition ability was assessed using a measure originally developed by McKenzie *et al.*, (2001), which was subsequently updated (see McKenzie *et al.*, 2020). The measure contains 27 stimuli depicting nine emotions (worried, sad, happy, surprised, disgust, bored, angry, scared, and neutral), each with three levels of contextual information. Contextual cues varied from limited (just depicting the face), to appropriate cues (e.g., a couple looking happy at their wedding). The participants were asked to type the emotion that they thought was being depicted in the items. Correct responses were allocated 1 point (possible range 0-27). A higher score indicates more accurate emotion recognition. This measure provides a reliable measure of emotion recognition ability over different ranges of ability (McKenzie *et al.*, 2020) and has high internal reliability (Scotland *et al.*, 2016).

### **Procedure**

The procedure was the same for Study 1 and Study 2. Participants who consented were then asked to provide demographic information (as shown in Table 1) and complete the measures outlined above, which were relevant to the study that they were participating in. The questionnaires were hosted using an online survey platform (Qualtrics, Provo, UT).

## Data analysis

The normality of continuous data was assessed. Descriptive statistics were obtained for the main key variables of interest in each study. Two mediation analyses were then carried out using the PROCESS macro (version 4.0) for SPSS. The indirect effects and 95% confidence intervals were calculated for 5000 bootstrapped samples, using a heteroscedasticity consistent standard error and covariance matrix estimator. In both studies, the predictor variable was autistic-like traits (as measured by AQ score), and the outcome variable was relationship satisfaction, measured by CSI scores. In Study 1, the mediator was emotional intelligence score and in Study 2, it was emotion recognition score. Analyses were conducted using SPSS (version 26).

## Results

Table 2 provides descriptive statistics for the key variables used in the study.

Table 2: Summary of study measures

Measure	Study 1			Study 2		
	Mean	SD	Range	Mean	SD	Range
<b>AQ</b>	16.6	7.2	4 - 34	17.1	7.7	0 - 41
<b>CSI</b>	125.8	28.9	44 - 161	116.5	23.8	52 - 191
<b>Emotion Recognition</b>	-	-	-	15.7	3.0	6-26
<b>TEIQue-SF</b>	145.3	25.9	75 - 196	-	-	-

*Abbreviations:* AQ: Autistic Spectrum Quotient; CSI: Couples Satisfaction Index; TEIQue-SF: Emotional Intelligence Questionnaire (Short-Form)

## Mediation Models

### Study 1

The result of the mediation analysis is shown in Table 3. This shows a significant negative effect of autistic-like traits on emotional intelligence ( $p < .001$ ) and a significant effect of emotional intelligence on relationship satisfaction, controlling for autistic-like traits ( $p = .03$ ). There was no significant direct effect of autistic-like traits on relationship satisfaction ( $p = .58$ ). There was a significant negative indirect effect of autistic-like traits on relationship satisfaction. As such, it can be concluded that emotional intelligence is a significant mediator of the relationship between autistic-like traits and relationship satisfaction in Study 1.

Table 3: Results of the mediation model for Study 1

	AQ as predictor of TEIQue-SF		AQ as predictor of CSI		TEIQue-SF as predictor of CSI		95% CI	
	$\beta$	$p$	$\beta$	$p$	$\beta$	$p$	Lower	Upper
<b>CSI</b>	-2.0	<.001	.33	.58	.37	.03	-1.45	-.07

*Abbreviations:* AQ: Autistic Spectrum Quotient; CI: confidence interval; CSI: Couples Satisfaction Index; TEIQue-SF: Emotional Intelligence Questionnaire (Short-Form)

## Study 2

Table 4 shows the results of the mediation analysis. A significant negative effect of autistic-like traits on emotion recognition ( $p = .03$ ) and a significant positive effect of emotion recognition on relationship satisfaction ( $p = .04$ ), was found, controlling for autistic-like traits. There was no significant direct ( $p = .47$ ) or indirect effect of autistic-like traits on relationship satisfaction. As such, it can be concluded that emotion recognition is not a significant mediator of the relationship between autistic-like traits and relationship satisfaction.

Table 4: Results of the mediation model for Study 2

	AQ as predictor of Emotion Recognition		AQ as predictor of CSI		Emotion Recognition as predictor of CSI		95% CI	
	$\beta$	$p$	$\beta$	$p$	$\beta$	$p$	Lower	Upper
<b>CSI</b>	-.06	.03	-.17	.47	1.36	.038	-.23	.00

*Abbreviations:* AQ: Autistic Spectrum Quotient; CI: confidence interval; CSI: Couples Satisfaction Index

## Discussion

The purpose of the current study was to investigate the extent to which autistic-like traits, emotional intelligence, and emotion recognition, as a specific component of emotional intelligence, influenced satisfaction with romantic relationships. No significant direct relationships were found between autistic-like traits and relationship satisfaction in either study. Study 1, however, found that emotional intelligence was a significant mediator of the relationship between autistic-like traits and relationship satisfaction. Previous research with autistic people (Harms *et al.*, 2010; Petrides *et al.*, 2011) has indicated that they may have greater difficulty with some of the emotional intelligence and emotion recognition skills that are important components of good interpersonal relationships (e.g. Malouff *et al.*, 2014; Schutte *et al.*, 2001; Smith *et al.*, 2008). The results of Study 1 are also consistent with those of Pollmann *et al.*, (2010),

who found that factors, such as responsiveness towards their partner, mediated the association between higher levels of autistic-like traits in males, and reduced satisfaction with their relationships.

No such relationship was found in Study 2, however, when emotion recognition was included as the mediator. This may be because the stimuli that were used in the study were static, whereas emotion recognition in day-to-day situations is generally based on dynamic, fleeting stimuli and a range of contextual cues. Research using more dynamic stimuli has found that a lack of contextual cues and high levels of autistic-like traits were associated with lower accuracy in emotion recognition (Martin *et al.*, 2019). Future research using more dynamic emotion recognition tasks may help identify if this specific aspect of emotional intelligence acts as a mediator between autistic-like traits and relationship satisfaction.

The results of the study have some practical implications. There is some research that interventions can improve emotional intelligence and, in turn, improve relationships (see Malouff *et al.*, 2014). Our findings suggest that emotional intelligence interventions could be used in relationship counselling with those with high AQ scores, making adjustments as required to take account of autistic-like traits (Jodra, 2021), with the aim of improving romantic relationship satisfaction and decreasing the chances of relationship breakdown. As secure and satisfying romantic relationships have been found to be associated with better mental health (Braithwaite & Holt-Lunstad, 2017), this might also be expected to positively influence psychological wellbeing.

Our study adds to the limited existing literature on the nature of emotional intelligence, emotion recognition, autistic-like traits and satisfaction with romantic relationships. It did, however, have limitations. Research suggests that sex differences (Kret & De Gelder, 2012), the nature of the relationship with the person being observed, the emotional attention that is paid to facial expressions, and the emotion being displayed (see Zhang & Parmley, 2015) can all influence emotion recognition. There are also sex differences in the manifestation of autistic-like traits (Ratto *et al.*, 2018). Some or all of these factors, may have influenced the results, particularly as the participants were predominantly female in both studies. In addition, the research relied on individual self-report. While this may have allowed participants to express dissatisfaction with their relationship in a more open way, future research which assesses participants as part of a couple, may provide additional insights (Pollmann *et al.*, 2010). A further limitation is that the AQ has been found to perform less well when measuring more extreme (both high and low) levels of autistic-like traits (Murray *et al.*, 2015). Participants in Study 2, in particular, had a wider range of autistic-like traits, from 0-41, which may have influenced the results.

In conclusion, the results of our studies found that emotional intelligence, but not emotion recognition, mediated the relationship between autistic-like traits and relationship satisfaction.



## Data availability statement

The authors confirm that the data supporting the findings of this study are available within the article and/or its supplementary materials.

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