Adaptive Coping Strategies among Young Adults:

The Influence of Attachment, Loneliness and Romantic Relationships

Master's Thesis Clinical Child and Adolescent Psychology

Department of Developmental Psychology

Tilburg University

Supervisor: Alexandra Hering

Second assessor: Nicola Ballhausen

(January 31, 2022)

M. Y. Troost

SNR: 2003734

ANR: 138149

Word count: 8649 words

Abstract

Throughout life people are expected to deal with all sorts of situations. Especially when situations are appraised as challenging or stressful it is important for people to be able to cope adaptively to protect themselves from the adverse consequences those situations might cause. Coping is a skill every person needs to acquire. People are constantly surrounded by others and form connections to those around them. As with many skills the type and quality of the attachments a person has with the people around them can impact the development and the employment of coping skills. The current research aims to answer the question whether and in what way attachment style influences adaptive coping strategies among young adults. The impact of two interpersonal factors (i.e., feelings of loneliness and romantic relationships) is also investigated to determine whether these variables moderate the relationship between attachment style and coping strategies. The research was performed using data collected through online questionnaires. The sample consisted of 244 first year university students (mean age= 19.6; 91% female) enrolled in the Psychology and Educational Sciences courses at the Radboud University Nijmegen. The results show significantly more adaptive coping for secure and dismissing attachments compared to preoccupied and fearful attachment. The analyses did not yield significant results to support the moderating role of loneliness and relationship status. These findings provide suggestions for focus of future research which can help to understand the mechanisms at play and provide indication for interventions and treatment in clinical practice.

Keywords: Coping strategies, attachment, loneliness, romantic relationships

Adaptive Coping Strategies among Young Adults:
The Influence of Attachment, Loneliness and Romantic Relationships

Bad traffic on your way to work, moving to a new city, getting fired from your job, growing up in poverty, being a victim of abuse or losing a loved one; these are all examples of challenges and adversities people need to face and deal with in life. Everyone will have to face difficulties in their lives. Different people will, however, react to the same situation in different ways. The way a person decides to act in any specific situation is what is known as their way of coping. *Coping* refers to "the use of cognitive and behavioural strategies to manage the demands of a situation when these are appraised as taxing or exceeding one's resources or to reduce the negative emotions and conflict caused by such demands" (APA, 2016, pg. 97).

Coping strategies

Different people employ different strategies to deal with the demands of the situations they find themselves in. The strategies used in such moments are known as *coping strategies*. These coping strategies are typically believed to involve a conscious and direct approach to problems (APA, 2016) and have been topic of research for many years (Carver, 1997; Goldberg-Looney et al., 2016). Researchers have attempted to categorize and classify different strategies in order to be able to understand and predict human behaviour. Carver (1997) included commonly used coping strategies in the Brief Cope Inventory: an assessment tool to determine what coping strategies a person uses most. The strategies included in this inventory are labelled either *adaptive* – active coping, planning, positive reframing, acceptance, humour, religion, using emotional support, and using instrumental support – or *maladaptive* – self-distraction, denial, venting, substance use, behaviour disengagement, and self-blame (Goldberg-Looney et al., 2016; Muhonen & Torkelson, 2011).

In every situation coping strategies determine people's actions. When situations are unexpected or stressful for people coping becomes particularly important (Williams & McGillicuddy-De Lisi, 2000). As children grow up, they reach adolescence and young adulthood during which stressful experiences and worries become more frequent (Brown et al., 2006; Washington, 2009; Williams & McGillicuddy-De Lisi, 2000). In this stage in life several important transitions take place. A few examples are the transition from primary to secondary school and eventually to higher education; transitions in cognitive capacities enabling more complex thinking and reasoning (Brown et al., 2006); and transitions in social evaluations and concerns with appearance and popularity (Williams & McGillicuddy-De Lisi, 2000). These transitions cause adolescents and young adults to experience an increase in stress and worry (Brown et al., 2006; Williams & McGillicuddy-De Lisi, 2000). Being able to adaptively cope with the adversities of life thus becomes more essential as children reach adolescence and eventually adulthood (Brown et al., 2006; Washington, 2009).

Coping is influenced by many factors both personal and situational (e.g., age and parental models). Hampel (2007) has shown age and gender effects on the employment of different coping strategies. She found that especially female participants were more likely to employ maladaptive and internalizing coping strategies such as less social support seeking and more ruminative strategies, whereas male participants were shown to be more prone to employ externalizing coping strategies such as aggression leading to the development of more externalizing behaviour problems. According to Brown et al. (2006) maladaptive coping strategies become more frequent as children transition from childhood to early adolescence as they keep more of their worries to themselves and they often have not yet learned how to employ adaptive strategies to deal with problems. Washington (2009) also investigated the role of personal factors such as age, gender, and developmental factors for which she found similar results to those found by Brown et al. (2006). Additionally, however,

she also focused on interpersonal and situational factors such as parental models and their effect on the coping skills of children. This research showed the importance of parental models and the impact on the development of effective and adaptive coping strategies throughout childhood, adolescence, and early adulthood. Washington found that parental warmth, responsiveness, and consistency along with authoritative parenting can contribute to the development of adaptive coping in children. Parental rejection, punishment, and inconsistency in responsiveness can cause more maladaptive coping strategies to develop. These factors have also been shown to be of significant impact on the way children are able to bond with their parents and caregivers. Stansfeld et al. (2008), for instance, indicated that parental warmth, responsiveness, and support from parents were related to the development of secure attachment and lack of these qualities was a risk factor for insecure (i.e., dismissing, preoccupied and fearful) attachment. This raises the question of whether this would mean that the type and quality of the relationships adolescents and young adults have with the people around them influences their preferred coping strategies. The aim of this current research is to find out whether and to what extend attachment style has an impact on adaptive coping strategies among young adults. Additional focus on a set of interpersonal factors (i.e., loneliness and romantic relationships) will provide more insight into the association between attachment style and coping.

Attachment styles

Throughout their entire life, people are in some way connected to other people. Children do not grow up in isolation but are constantly surrounded by people who influence them (Doyle & Cicchetti, 2017; Hazan & Shaver, 1994). This idea is the basic principle of the Attachment Theory pioneered by John Bowlby and later refined and elaborated upon in collaboration with Mary Ainsworth (as cited in Bretherton, 1992). The central theme in their work is that attachment relationships are not only essential during childhood but their

significance is extended throughout the lifespan (Bretherton, 1992; Pascuzzo et al., 2013). This theory also suggests that the degree of security in adult attachment relationships can be directly linked to how well people bonded to others during childhood (APA, 2016; Bretherton, 1992; Hazan & Shaver, 1987). During childhood people are primarily attached to their parents and primary caregivers. Later on in life they become more (intimately) connected to friends, peers, colleagues, lovers, partners, and maybe at some point their own children (Doyle & Cicchetti, 2017; Hazan & Shaver, 1994). *Attachment* can be conceptualized as "the emotional bond between an infant and its parent figure or caregiver" (APA, 2016, pg. 33) providing security and calmness for the child. Later in life attachment is also used to refer to "the tendency in adulthood to seek emotionally supportive social relationships" (APA, 2016, pg. 33). The way those relationships are formed and the importance individuals attach to them depends on the style of attachment. Numerous factors influence the type and quality of the attachment people have with each individual person in their lives. Different people relate to others in diverse ways in the context of intimate relationships. The way people feel (the need to feel) close to others is influenced by the way people think about themselves and the way they feel about others – i.e., feelings of self-worth and interpersonal trust (APA, 2016). Four adult attachment styles are recognised.

These four attachment styles can be described in terms of internal working models of the self and of others. This idea was first conceptualized by Bowbly and later elaborated upon by Bartholomew and Horowitz (1991). An *internal working model of attachment* is "a cognitive construction or a set of assumptions about the workings of relationships" (APA, 2016, pg. 229). This entails that the internal working models define how someone values relationships and what someone believes relationships can offer. This internal working model can be positive – believing the self or others to be worthy of love and trust as well as placing importance on the relationship and the role it can play in one's life – or negative – generally

seeing the self and others as unreliable and unworthy of love and attention (Bartholomew & Horowitz, 1991). The different conceptual combinations of positive and negative internal working models of self and others result in four distinct adult attachment styles. Allocation of people to the different groups would be based on interviews or (self-report) questionnaires aimed at uncovering how someone values self-reliance on the one hand and interpersonal reliability and need for close contact on the other hand (Bartholomew & Horowitz, 1991).

Secure attachment combines a positive internal working model of the self (the belief of oneself to be worthy of love) and a positive internal working model of others (the belief that others are accepting, responsive, and dependable). A positive internal working model of the self can also be seen in combination with a negative internal working model of the other (the belief that others are untrustworthy and undependable). This is characteristic of *Dismissing attachment*. Because of their distrust in other people, individuals with a dismissing attachment style often discount the importance of close relationships and maintain rigid self-sufficiency (APA, 2016). A negative internal working model of the self (doubting one's own competence and efficacy) in combination with a positive internal working model of others defines *Preoccupied attachment* style. Individuals with a preoccupied attachment style value close relationships but can be uncomfortable when close with someone due to their feelings of unworthiness about themselves (APA, 2016; Bartholomew & Horowitz, 1991). Lastly, when a negative internal working model of the self is combined with a negative internal working model of others this will lead to *Fearful attachment*. Doubting one's own competence and efficacy as well as other's and not seeking help or support from others when in distress is typical of fearful attachment (APA, 2016).

The different attachment styles all influence the use of certain coping strategies in some way. Romero et al. (2020) and Trejnowska et al. (2019) investigated the effect of avoidant attachment – this encompasses dismissing and fearful attachment – and anxious

attachment – which encompasses preoccupied attachment – on coping. They found that dismissing and fearful attachment were related to more maladaptive coping strategies (i.e., denial, self-distraction, behavioural disengagement). Romero et al. (2020) also illustrated that dismissing and fearful attachment often result in more substance use coping strategies whereas secure attachment was found to be related to more support seeking behaviours and lower levels of anxiety and avoidance. Granqvist (2005) exemplified the use of adaptive coping strategies for dismissing, fearful, and preoccupied attachment. Additionally, he found that insecure attachment was related to increased use of religion and religious activity to cope with situations (i.e., adaptive coping). He found no evidence of increased use of religion or religious activity for people with secure attachment.

The different attachment styles have been shown to be related to coping in many ways (Granqvist, 2005; Romero et al., 2020; Trejnowska et al., 2019). People are naturally predisposed to seek closeness to and intimacy with others (Bogaerts et al., 2006; Hazan & Shaver, 1994). This has positive effects on people's well-being and health (Lippert & Prager, 2001) and lacking such close and intimate relationships can lead to adverse consequences (Bartholomew, 1990; Smith, 2019). This raises the question whether this would mean that when people experience a lack of close and intimate relationships this would also influence the way they deal with life and its challenges.

Feelings of loneliness

Smith (2019) presented conceptual models based on the premise that the quality of social connection can predict health outcomes such as mortality, longevity, and the development of diseases. However, even within a relationship, when a person does not feel understood, supported, comfortable or safe, they can experience discomfort and the relationship might suffer since people will not feel connected to their partner and may stop

investing in the relationship (Reis et al., 2017). Not having satisfying, qualitatively good and intimate relationships can lead to people starting to feel lonely (Bogaerts et al., 2006).

Feelings of loneliness often occur and can cause a lot of distress for the people experiencing such feelings (Deckx et al., 2018; Russell et al., 1980). Being or feeling alone can lead to emotional distress and can make people feel like they have no one to turn to to ask for help when experiencing distress (Bogaerts et al., 2006). Bogaerts et al. (2006) showed that feelings of loneliness also coincide with certain attachment styles, both parental and peer related attachment styles. Their research showed that people with insecure attachment styles (i.e., dismissing, preoccupied and fearful attachment) often show higher levels of feelings of loneliness than do people with a secure attachment style. In their study, Bernardon et al. (2011) got similar results showing that insecure attachment, regardless whether it was dismissing, preoccupied or fearful, resulted in higher levels of loneliness. Feelings of loneliness can in turn alter the way people deal with life and its adversities. Research by Rokach and Brock (1998) demonstrated increased maladaptive coping (i.e., denial and substance use) in lonely people and the alteration in their perception of those coping strategies as being helpful in dealing with their loneliness.

Romantic relationships

One way in which people attempt to prevent feelings of loneliness is by investing in meaningful relationships. For many people their romantic relationship is a meaningful relationship and worth investing time and effort into (Bartholomew, 1990; Mak & Marshall, 2004). Smith (2019) summarized findings from previous research suggesting that having a meaningful and supportive romantic relationship (i.e., partner responsiveness) could protect from all-cause mortality because it decreases negative emotions associated with daily stressors.

Just as loneliness can influence the way people deal with challenges in life, so too can being in a committed romantic relationship alter the way people cope with certain situations. Having a satisfying romantic relationship can help people cope more adaptively with adverse events in life. According to Szwedo et al. (2017) positive social relationships, including romantic relationships, can counteract negativity in people's lives; they aid the development of adaptive models of the self and others. This in turn helps people to develop a secure attachment to their significant other since this is based on positive, adaptive models of the self and others (Bartholomew & Horowitz, 1991).

Present study

Dealing with challenges and adversities is something every person needs to do throughout live. It is becoming increasingly important to understand in what way societal and global influences, such as the current corona pandemic, change the way relationships impact coping. If for instance isolation becomes more prominent due to regulations, this raises the question of whether this would influence the way people deal with challenges in life. Knowing in what way different interpersonal relational factors (i.e., attachment style, loneliness, and romantic relationships) influence coping strategies can help understand how to counteract problems when they arise due to situational, environmental, and societal demands. The present study provides a starting point in trying to understand the mechanisms involved.

The research question of this study is: do the different adult attachment styles have an impact on the use of adaptive coping strategies of young adults? Additionally, this research looked into the moderating effect of the two interpersonal factors of loneliness and relationship status on the association between attachment style and coping strategies. Based on findings from previous research it is expected that there will be differences in coping scores among the different attachment style groups. It is expected that a secure attachment

style will lead to more adaptive coping whereas preoccupied, dismissing, and fearful attachment result in the employment of less adaptive coping strategies (Dawson et al., 2014; Pascuzzo et al., 2013; Trejnowska et al., 2019). Furthermore, it is expected that increased feelings of loneliness will decrease adaptive coping of individuals who have a dismissing or fearful attachment style and that it will not affect the adaptive coping strategies of people with a secure attachment style (Bernardon et al., 2011; Bogaerts et al., 2006; Romero et al., 2020). Lastly, being in a romantic relationship is expected to impact the association between attachment style and coping strategies. Dismissing and fearful attachment both have a negative internal working model of the other. A relationship assumes a certain level of trust and security in the other person. A negative internal working model of the other entails people believe that others are untrustworthy and undependable (APA, 2016). Being in a romantic relationship would cause stress for people with dismissing and fearful attachment and subsequently lead to less adaptive coping since they also do not share their stress and worries with their significant other. It is therefore expected that not being in a romantic relationship will lead to more adaptive coping strategies in adolescents for individuals with a dismissing and fearful attachment style whereas being in a romantic relationship will lead to more adaptive coping strategies for preoccupied and securely attached individuals (Bartholomew, 1990; Davis et al., 2003).

Method

Participants

Participants in this study were $N = 247$ first year Psychology and Educational Science college students (91% female) from the Radboud University Nijmegen. Before analyses were conducted the data was checked for missing data and outliers. After the removal of two participants due to missing data on age and the removal of one participant due to significant

deviation on coping scores, *N* = 244 participants remained. Participants were recruited via an online sign-up program for the Bachelor courses at the university.

The mean age of the sample was *M* = 19.6 years (range: 18.01 – 27.6 years; *SD* = 1.41) and 75% of the students were Dutch, 21% of the students were of German origin, and 4% of the students had a different nationality. At the time of the baseline measurements 120 students (49.2%) were in a romantic relationship.

Procedure

The present study was part of a larger study including a baseline measurement and ESM (Experience Sampling Methodology) data collection over 11 days (see Roekel, 2014, for more details on the project). The protocols and procedures for this research were approved by the Ethical Committee of the Faculty of Social Sciences at the Radboud University Nijmegen (2012, No. ECG2012-2711–061). No ESM data was used in this current study. Requirement for participation was access to a smartphone as part of the chosen measures used ESM for which the questionnaires had to be completed on the smartphone.

Participation in this study was voluntary and anonymous. In return for their contribution the participants would receive 12 course credits if 80% or more of all questionnaires were completed. Participants were asked to fill out online questionnaires in which information about demographic characteristics, such as age, origin, study program, and several psychological constructs was recorded. The present study focuses on information about different coping strategies, attachment style, feelings of loneliness and relationship status.

Measures

Coping

The measure for coping was derived from Carver's Brief COPE (1997). It encompasses 14 coping strategies. Participants were asked to indicate on a four-point Likert

scale ranging from 0 ("*I haven't been doing this at all*") to 3 ("*I've been doing this a lot*") whether or not they have engaged in certain actions and behaviours belonging to the different coping strategies. In total 28 statements were included, two belonging to each coping strategy. The coping strategies can be divided into adaptive coping strategies – strategies that enable a person to adjust effectively and function optimally (APA, 2016) – and maladaptive coping strategies – strategies that are counterproductive and interfere with optimal functioning (APA, 2016). For this division the research by Goldberg-Looney and colleagues (2016) has been taken as reference. Example items for adaptive coping strategies are "*I've been taking action to try to make the situation better*" which belongs to active coping and "*I've been getting comfort and understanding from someone*" as an item of using emotional support. Examples of items belonging to maladaptive coping strategies are "*I've been using alcohol or other drugs to make myself feel better*" belonging to substance use strategies and "*I've been blaming myself for things that happened*" belonging to the self-blame strategy. Higher scores on all items indicated more usage of the specific coping strategies. The score for coping for each participant was computed by adding all scores on the adaptive and maladaptive coping strategies respectively and dividing by the total number of strategies corresponding to each scale: adaptive coping contained 8 strategies (so the total was divided by 8) and maladaptive coping contained 6 strategies (so the total was divided by 6). The final coping score was calculated by subtracting the score on maladaptive coping from the score on adaptive coping for each individual. Higher scores on coping indicated more use of adaptive coping strategies. Analysis of the reliability for the total scale showed this measure had a good level of internal consistency (Cronbach's alpha $\alpha = 0.720$).

Attachment

The attachment questionnaire consisted of five items, four of which represented the distinct adult attachment styles (secure attachment, dismissing attachment, preoccupied

attachment, and fearful attachment). Each item was presented as a topic (A-D) and the last question on the attachment questionnaire asked participants to specify which topic item was most applicable to them. It was based on Bartholomew and Horowitz's (1991) research on attachment styles among young adults. The separate attachment style items are displayed in table 1. To assess the attachment styles of the participating students they were asked to indicate to what extent they agreed or disagreed with the four statements on a seven-point Likert scale. Lastly, they had to indicate which topic they found most applicable to their own situation. The attachment style for each participant was determined by the participant's response to the last question.

Table 1

Attachment styles questionnaire items (Bartholomew & Horowitz's, 1991)

Topic A: Secure Attachment	It is relatively easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.
Topic B: Dismissing Attachment	I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.
Topic C: Preoccupied Attachment	I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.
Topic D: Fearful Attachment	I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.

Note. Answer categories: strongly disagree, disagree, somewhat disagree, neither agree nor disagree, somewhat agree, agree, strongly agree.

Loneliness

Loneliness was assessed by the University of California, Los Angeles Loneliness scale, short version (UCLA – short version; Russell et al., 1980). This scale consists of 20 statements for which participants were asked to indicate how often they considered a particular statement to be applicable to the way they felt on a four-point scale: never, rarely, sometimes, or often. Sample items belonging to this scale are "*How often do you feel no-one*

really knows you well?", "*How often do you feel left out?*", and "*How often do you feel there are people you can talk to?*" of which the last example was reversed scored. The final score for loneliness for each participant was computed by calculating a mean score of all 20 items. A lower score indicated fewer feelings of loneliness. Cronbach's alpha for the total scale was $\alpha = 0.921$, indicating a high level of internal consistency for the loneliness scale used in this sample.

Romantic relationship

In the demographic part of the questionnaire participants indicated whether or not they were currently in a romantic relationship (i.e., their relationship status). Answer options were *yes* (coded as 1) and *no* (coded as 0).

Data analysis

The data for this research were processed using IBM SPSS statistics 24 (IBM Corp., 2016). All statistical analyses were performed using this program (significance level set to $p < .05$). Exploratory statistics showed that the total score on coping for one participant indicated significant deviation and this resulted in the removal of this participant from the research. Missing data on age for two other participants resulted in the removal of in total three participants ($N = 244$).

The relationship between attachment styles and coping strategies was analysed using a one-way between groups analysis of variance (ANOVA) with post-hoc tests. A number of assumptions need to be taken into consideration when performing an ANOVA. Coping was set as continuous dependent variable (assumption one) and attachment style was incorporated in the model as independent, categorical predictor variable with four independent groups (assumption two). The third assumption (independence of observations) was satisfied because the research concerns a single, individual measurement. The significant outlier was taken out before analyses so assumption four (no significant outliers) was met. Assumption five,

(approximately) normally distributed dependent variable, was checked by performing a test of normality (Shapiro-Wilk's test: $p = .227$). This assumption was not violated. The last assumption of a one-way ANOVA, homogeneity of variances, was also met (Levene's test: $p = .507$). As the post-hoc test the Tukey HSD test was selected (Hinkle et al., 2003). A priori power analyses using the G*power program (Faul et al., 2007) for the ANOVA indicated that to get a power (1-β) of at least .80, given a medium effect size (Cohen's $f = .25$) and an alpha of $\alpha = .05$ the sample size would need to be at least 179. Since the sample size was larger than 179 ($N = 244$) the power of the ANOVA will be higher than $1-\beta = .80$.

To investigate whether feelings of loneliness influence the relationship between the different attachment styles and coping strategies a moderation analysis was used. Moderation looks into the effect of a third variable on the relation between two variables (Warner, 2013). The moderating effect of loneliness on the relationship between attachment styles and coping strategies was examined using the SPSS PROCESS macro v4.0 by Andrew F. Hayes (Hayes, 2017). The macro extension in SPSS performs a moderation regression. In the analysis coping (total coping score) was taken as dependent (outcome) variable. The predictor variable was attachment style, specified to be a categorical variable in the PROCESS macro (set to Indicator). Loneliness was incorporated as a continuous moderating variable.

Relationship status was included in the same way as a moderator in the model to investigate the effect of having a significant other on the relationship between attachment style and adaptive coping strategies. Coping (total coping score) was included as the dependent variable and attachment style was set to be the predictor variable (specified as categorical and set to Indicator). Relationship status was included as dichotomous moderating variable.

For both regression analyses, model 1 was selected along with the following options: show covariance matrix of regression coefficients; generate code for visualizing interactions;

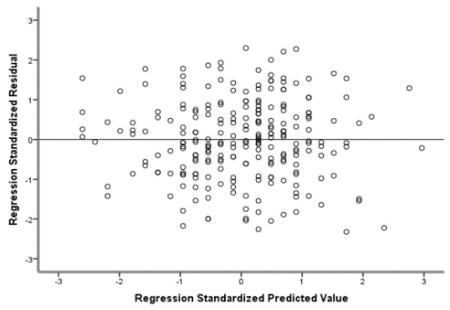
pairwise contrasts of indirect effects. The program was instructed to mean centre only continuous variables that define products and to always probe interactions. The conditioning values were set to -1 SD, mean, and +1 SD. All other settings were kept at default values. A priori power analyses using the G*power program (Faul et al., 2007) for the regression analyses indicated that to get a power (1-β) of at least .80, given a medium effect size (Cohen's f^2 = .15), an alpha of α = .05 and 2 predictor variables the sample size would need to be at least 68. Since the sample size is larger than 68 (N =244) the power of the regression analyses will also be higher than 1-β = .80.

While performing a multiple regression, a number of assumptions had to be taken into consideration (Osborne & Waters, 2002; Williams et al., 2013). The first assumption is that there has to be a linear relationship between all predictor variables and the outcome variable. This was checked by creating a scatterplot with total coping score as the outcome variable on the y-axis and loneliness scores, the predictor variable, on the x-axis. The four different attachment style groups all showed a linear relationship between coping and loneliness (secure attachment: $y = 2.84 - 0.65x$; dismissing attachment: $y = 1.68 - 0.23x$; preoccupied attachment: $y = 0.25 + 0.12x$; fearful attachment: $y = -0.77 + 0.45x$) (see appendix A). There is no linear relationship between coping and relationship status, since relationship status is a dichotomous variable. This was not a problem for the regression since the PROCESS macro by Hayes (2017), takes this into consideration. The second assumption is multivariate normality. This assumes all residuals are normally distributed. This was checked by plotting normal Q-Q plots which showed no significant deviation from the diagonal lines meaning the errors are normally distributed (see appendix B). The assumption of normality was met. Independence of observations (assumption three) was checked using a Durbin-Watson test (Dufour & Dagenais, 1985; Hoang Diem Ngo, 2012) which checks for autocorrelation among the residuals. If the Durbin-Watson test results in a value between 1.5

and 2.5, there is no autocorrelation and the assumption of independence of observations is met. For loneliness the Durbin-Watson test obtained a value of *DW* = 1.956, for relationship status the test obtained a value of *DW* = 1.949. In both cases the assumption of independence of observations is met. Assumption four is concerned with homoscedasticity which entails a regression assumes that all residuals have equal variation. For loneliness this was checked by plotting the standardized residuals against the predicted values (see figure 1). For relationship status this was checked by plotting the dependent variable (total coping score) against the residual scores (see figure 2). No clear deviation patterns were evident, indicating homoscedasticity was not a problem and the assumption is met. The last assumption that needed to be met was that there exists no collinearity between the predictor variables, which entails that the different predictor variable are not strongly correlated (Williams et al., 2013). This assumption was checked by calculating the Variance Inflation Factor (VIF value) (Curto & Pinto, 2011; Jou et al., 2014) for each predictor. This value is calculated with the formula: $VIF = \frac{1}{(1-R^2)}$ in which R^2 indicates the amount of variance in the outcome variable that is explained by the model (Pallant, 2016). A VIF-value of 5 or higher is considered problematic for a regression analysis. For loneliness the VIF-value was $VIF = \frac{1}{(1-0.104)} = 1.116$, and for relationship status the VIF-value was $VIF = \frac{1}{(1-0.099)} = 1.110$. Both VIF-values are lower than five, meaning the assumption of no collinearity is met.

Figure 1

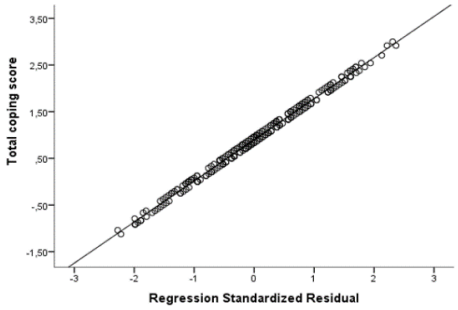
Plots of standardized residuals against predicted values of loneliness scores



Note. No clear deviation pattern from the horizontal line indicates homoscedasticity is present

Figure 2

Plot of coping scores against standardized residual scores for relationship status



Note. The graph shows no clear deviation from the diagonal which indicates homoscedasticity is present

To investigate whether there was a significant association between people who indicate high levels of loneliness and people currently not in a romantic relationship (i.e., a possible cause for feelings of loneliness) an exploratory chi-squared test for independence was performed. A chi-squared test for independence explores the relationship between two categorical variables (Pallant, 2016). Loneliness was recoded into a categorical variable with three levels (low, medium, and high loneliness). The assumptions of random sample, independence of observations and expected frequency (count < 5) were met.

Results

The descriptive statistics for the four adult attachment styles and the sample total on coping scores and loneliness scores, along with the percentage of participants who were in a romantic relationship can be found in table 2.

Table 2

Descriptive statistics for coping scores and loneliness scores for all four attachment styles and the sample total

	Mean	SD	Minimum	Maximum
Secure attachment (*n* = 119)				
Coping	1.105	.839	-.92	3.00
Loneliness	2.666	.225	2.00	3.35
Romantic relationship 53.8%				
Dismissing attachment (*n* = 39)				
Coping	1.066	.933	-.67	2.92
Loneliness	2.655	.218	2.30	3.20
Romantic relationship 41.0%				
Preoccupied attachment (*n* = 27)				
Coping	.599	.905	-1.13	2.42
Loneliness	2.815	.236	2.25	3.35
Romantic relationship 59.3%				
Fearful attachment (*n* = 59)				
Coping	.502	.762	-1.04	2.25
Loneliness	2.823	.250	2.15	3.35
Romantic relationship 40.7%				
Total (*N* = 244)				
Coping	.897	.882	-1.13	3.00
Loneliness	2.718	.242	2.00	3.35
Romantic relationship 59.2%				

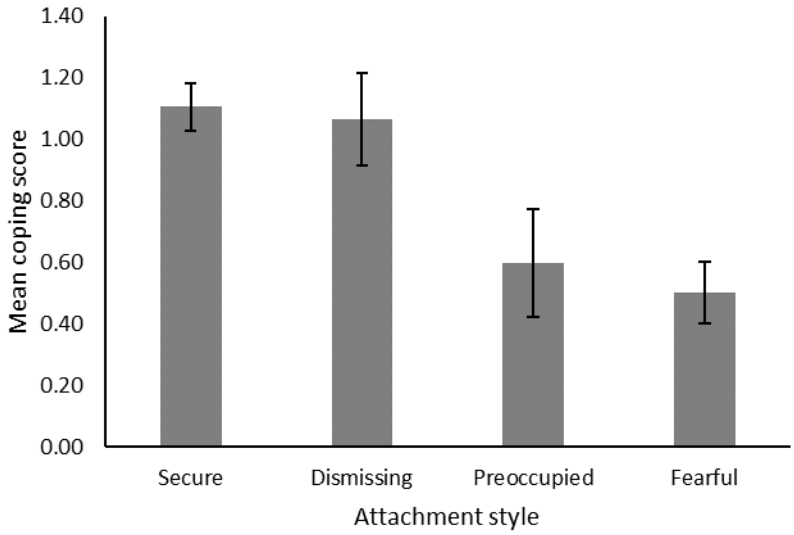
Note. SD is standard deviation

The percentages indicate the proportion of the participants that was in a romantic relationship.

To explore the relationship between the different attachment styles and the employment of adaptive coping strategies, a one-way between-groups analysis of variance (one-way ANOVA) was conducted. Participants were divided into four groups according to their attachment styles (group 1: secure attachment style; group 2: dismissing attachment style; group 3: preoccupied attachment style; group 4: fearful attachment style). The mean scores on coping for the four attachment styles are shown in figure 3. The ANOVA showed that there were differences in coping for the four attachment style groups: $F(3, 240) = 8.36$, $p < .001$, $\eta^2 = .095$. This effect size indicates a medium to large effect of attachment style on coping strategies (Pallant, 2016, pg. 212).

Figure 3

Mean coping scores for the four adult attachment styles with standard error bars



Post-hoc analyses using the Tukey HSD test indicated that the mean score of the secure attachment group (M =1.105, SD = 0.839) was significantly different from the preoccupied attachment group (M = 0.599, SD = 0.905) and the fearful attachment group (M = 0.502, SD = 0.762). The secure attachment group however did not differ significantly from

the dismissing attachment group (M = 1.066, SD = .933) (see Table 3). The dismissing attachment group was found to significantly differ from the fearful attachment group but not from the secure attachment group or the preoccupied attachment group. No significant difference was found between the preoccupied attachment group and the fearful attachment group.

Table 3

Multiple comparisons of the total coping scores between the four adult attachment styles in the Tukey HSD test

		Secure		Dismissing		Preoccupied		Fearful	
	N	Mean difference	Sig.	Mean difference	Sig.	Mean difference	Sig.	Mean difference	Sig.
Secure	119	-	-	.039	.995	.506*	.027	.603*	<.001
Dismissing	40	-.039	.995	-	-	.467	.123	.564*	.007
Preoccupied	27	-.506*	.027	-.467	.123	-	-	.097	.961
Fearful	59	-.603*	<.001	-.564*	.007	-.097	.961	-	-

Note. Sig. indicates the *p*-value
** Mean difference is significant at the p = 0.05 level.*

The regression performed by the PROCESS macro in SPSS to investigate the moderating effect of feelings of loneliness on the relationship between attachment and coping showed that the overall model was significant: $F(7, 236) = 4.278$, $p < .001$, $R^2 = .113$. The R^2 indicates that 11.3 % of the variance in the scores of coping is explained by the model. The results show that there is a significant effect of secure attachment, preoccupied attachment, and fearful attachment. There is no significant effect of dismissing attachment. The moderator loneliness did not yield a significant result. Coefficients, *t*-scores and *p*-values of all predictor variables, moderation variable and interaction terms can be found in table 4. There was no significant moderating effect of loneliness on the relationship between attachment styles and coping ($F(3, 236) = 1.371$, $p = .252$, R^2-change = .016).

Even though the overall interaction effect was not significant, conditional effects of attachment style could be observed at different values of loneliness. At -1 standard deviation from the mean of loneliness (-0.2423) there was a significant conditional effect of

preoccupied and fearful attachment on coping scores (b = -.672, t(236) = -2.208, p = .028 and b = -.883, t(236) = -4.128, p < .001 respectively). The same trend could be seen at the mean of loneliness (preoccupied: b = -.484, t(237) = -2.510, p = .013; fearful: b = -.616, t(237) = -4.302, p < .001), however at +1 standard deviation from the mean of loneliness (0.2423) this effect was no longer evident. Figure 4 displays the coping scores for all four adult attachment styles at the three different levels of loneliness corresponding to the conditional effects.

Table 4

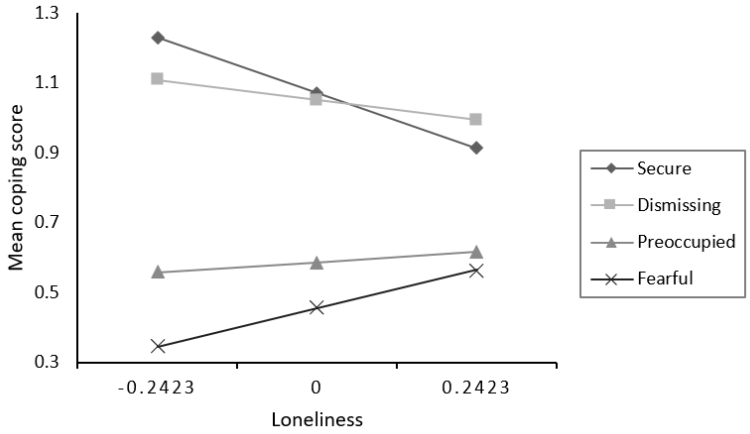
Coefficients, t-scores and p-values for all predictors and interactions in the regression analysis investigating the moderation effect of Loneliness on the relationship between Attachment and Coping

	Coefficient (*b*)	***t*-score (df= 236)**	***p***
Secure attachment	1.071	13.485	< .001 *
Dismissing attachment	-.019	-.118	.906
Preoccupied attachment	-.484	-2.510	.013 *
Fearful attachment	-.616	-4.302	< .001 *
Loneliness	-.652	-1.893	.060
Dismissing x Loneliness	.420	.586	.557
Preoccupied x Loneliness	.777	.997	.320
Fearful x Loneliness	1.104	1.940	.050

** p-value is significant at the 0.05 level*

Figure 4

Mean coping scores for the four adult attachment styles at three levels of loneliness



Note. Mean coping scores for -1SD from the mean of loneliness (-0.2423), at the mean of loneliness (0) and for +1SD from the mean of loneliness (0.2423).

To investigate the moderating effect of relationship status on the relationship between attachment style and coping score, the PROCESS macro in SPSS was used to run a regression analysis. The overall model was significant: $F(7, 236) = 3.968$, $p < .001$, $R^2 = .1053$; there was no significant interaction effect however between attachment and relationship status on coping scores: $F(3, 236) = .636$, $p = .592$, R^2-change = .007. The relevant coefficients, *t*-scores and *p*-values of all predictor variables, moderation variable and interaction terms can be found in table 5.

Conditional effects of attachment could be observed when looking at relationship status. When people were not in a romantic relationship a significant conditional effect of preoccupied and fearful attachment could be observed ($b = -.592$, $t(236) = -2.117$, $p = .035$ and $b = -.454$, $t(236) = -2.482$, $p = .014$ respectively). When people were in a romantic relationship a significant conditional effect could only be observed for fearful attachment ($b = -.769$, $t(236) = -3.794$, $p < .001$). The coping scores for the different attachment styles by relationship status can be seen in figure 5.

The chi-squared test for independence indicated no significant association between relationship status and level of loneliness, χ^2 (2, n=244) = .793, $p = .673$, *Cramer's V* = .057.

Table 5

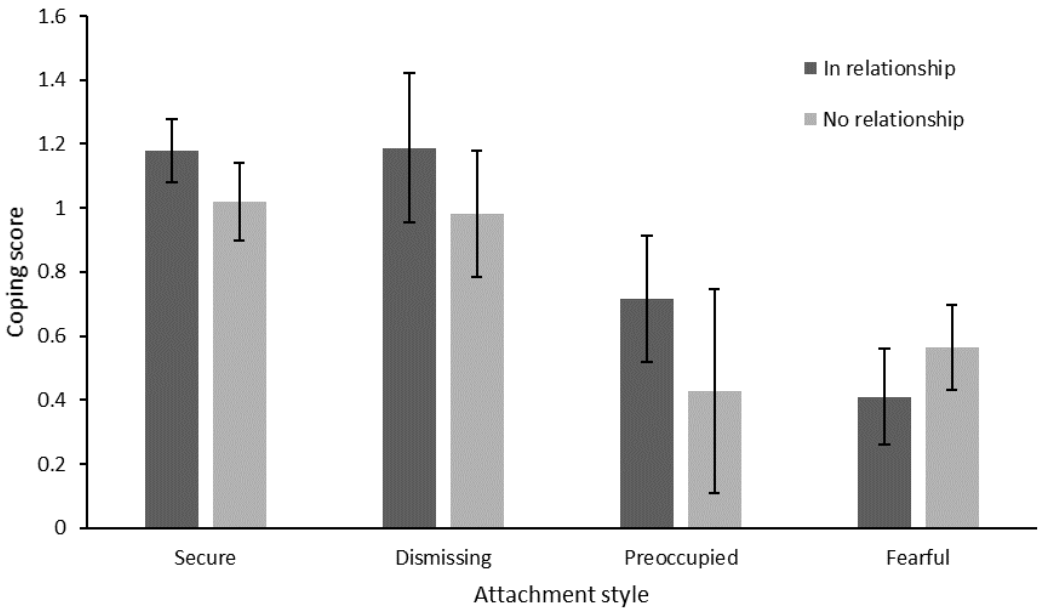
Coefficients, t-scores and p-values for all predictors and interactions in the regression analysis investigating the moderation effect of Relationship status on the relationship between Attachment and Coping

	Coefficient (*b*)	***t*-score (df= 237)**	***p***
Secure attachment	1.020	8.935	< .001 *
Dismissing attachment	-.038	-.180	.857
Preoccupied attachment	-.592	-2.117	.036 *
Fearful attachment	-.454	-2.482	.014 *
Relationship status	-.159	1.020	.309
***Dismissing x* Relationship status**	.047	.148	.882
***Preoccupied x* Relationship status**	.129	.353	.724
***Fearful x* Relationship status**	-.314	-1.152	.251

** p-value is significant at the 0.05 level*

Figure 5

Mean coping scores for the four adult attachment styles by relationship status with standard error bars



The analyses yielded a significant result for the ANOVA investigating the relationship between attachment styles and coping strategies. The regressions examining the moderating effect of feelings of loneliness and relationship status did not show significant results. Several conditional effects suggest some influence of the moderating variables but the current study could not provide evidence for significance in these relationships.

Discussion

The present study was aimed at uncovering the impact of adult attachment style on adaptive coping strategies in young adults. Additionally, the research investigated the moderation effects of loneliness and romantic relationships on the association between attachment style and coping strategies. Based on previous research (Dawson et al., 2014; Pascuzzo et al., 2013, Trejnowska et al., 2019) it was expected that attachment style would have an impact on the coping strategies of young adults. The results show a difference in coping scores for the different adult attachment styles which supports the findings from previous research (e.g., Dawson et al., 2014; Trejnowska et al., 2019) and confirms the first

hypothesis. No significant effects were found for the interpersonal factors of loneliness and relationship status indicating that the relationship between attachment and coping strategies among young adults does not seem to depend on feelings of loneliness or relationship status.

The results show that there is a significant difference in coping between secure attachment and preoccupied and fearful attachment. The predicted difference between secure attachment and dismissing attachment was not found. Secure and dismissing attachment both constitute a positive internal working model of the self. This assumes a certain level of trust in one's own abilities. Coping is primarily an internal process which is influenced by the way people think about themselves and whether or not they view themselves as capable of dealing with the situation (Chapman & Mullis, 1999; Eisenbarth, 2012). People who have a secure attachment style as well as people who have a dismissing attachment style believe themselves to be capable of dealing with adversities leading to the development of more adaptive coping strategies. The results also show significantly higher coping scores for dismissing attachment compared to fearful attachment. Previous research, however, has shown decreased use of adaptive coping for both dismissing and fearful attachment (Romero et al., 2020; Trejnowska et al., 2019). The current findings contradict these results. This difference could be due to the fact that dismissing and fearful attachment have a different validation of the self. As stated before, people with a dismissing attachment style believe themselves to be capable of dealing with negative events when they occur. People with a fearful attachment style on the other hand lack such confidence in their own skills to be able to adaptively deal with difficult situations when faced with such situations resulting in less adaptive coping (Chapman & Mullis, 1999; Eisenbarth, 2012) which can be seen in the current results as well.

The second query in this study was concerned with the impact of feelings of loneliness on the association between attachment style and adaptive coping strategies. The results of the ANOVA showed that there was an effect of attachment style on the coping

strategies of young adults in the current sample. The question now was whether feelings of loneliness would influence this relationship. The study shows no support for this premise. Contrary to previous findings (Bernardon et al., 2011; Bogaerts et al., 2006; Romero et al., 2020) feelings of loneliness do not seem to impact the relationship between attachment style and coping strategies in young adults. Nevertheless, the results obtained from the regression analysis showed some remarkable patterns that are worth looking into. The conditional effects showed differences in adaptive coping for the preoccupied and fearful attachment styles for lower levels of loneliness. At high levels of loneliness, this effect disappeared. This suggests that the impact of attachment on coping strategies decreases as feelings of loneliness increase. At lower levels of loneliness, attachment style could have a bigger impact on the coping strategies of young adults as a result of the internal working models of self and others. Secure and dismissing attachment both have a positive internal working model of the self, which indicates those participants generally believe themselves capable of dealing with adversities. Additionally, people with a positive working model of the self tend to display higher levels of perceived social support leading to less loneliness (Bernardon et al., 2011). At higher levels of loneliness, this effect seems to disappear resulting in more similar coping scores for all four attachment style groups. This could be due to the fact that people who scored high on loneliness, regardless of attachment style, all tend to use the same kind of coping strategies. Deckx and colleagues (2018) illustrated that certain (maladaptive) coping strategies (e.g., denial, self-distraction, venting and self-blame) can be risk factors for increased feelings of loneliness. This could imply that the high levels of loneliness are a consequence of the coping strategies people tend to employ, however, this is not apparent from the current findings. Future research will need to focus specifically on this link to disentangle the association between coping strategies and loneliness.

The last part of the current research focusses on the impact of relationship status on the association between attachment style and adaptive coping strategies. It was assumed that being in a relationship compared to not being in a relationship would decrease coping scores for dismissing and fearful attachment. This hypothesis is rejected. For secure and preoccupied attachment, it was expected that being in a relationship would result in increased coping scores compared to not being in a relationship. This hypothesis was supported by the results.

The results show no significant interaction between attachment style and relationship status. Remarkable, however, is that for secure attachment, dismissing attachment and preoccupied attachment, coping scores for participants who were not currently in a romantic relationship were lower than coping scores for participants who were in a romantic relationship. This confirms the assumption regarding secure and preoccupied attachment however it is contrary to the expected effect for dismissing attachment. The results for fearful attachment were in line with the expectation (higher coping for people not currently in a romantic relationship). The inverted effect for dismissing attachment could be related to the internal working models of the self and others (Bartholomew & Horowitz, 1991). Since dismissing attachment combines a positive internal working model of the self and a negative internal working model of the other, it was expected that coping would go down when in a romantic relationship due to the distrust people with dismissing attachment have of others. It seems, however, that this is not the case. The positive internal working model of the self for people with a dismissing attachment style could act as a protection against the adverse effects of a negative internal working model of the other (Bartholomew & Horowitz, 1991). For fearful attachment the coping scores were higher when not in a romantic relationship. It could be that the combination of internal working models for fearful attachment result in better coping when people with fearful attachment do not need to consider other people (Bartholomew, 1990; Bartholomew & Horowitz, 1991). People with a fearful attachment not

only doubt their own competence and abilities but also distrust others and find it hard to seek and accept help when in distress (APA, 2016). Doubting one's own competence and efficacy as well as other's and not seeking help or support from others when in distress is typical of fearful attachment (APA, 2016). Even though people with a fearful attachment want to be emotionally close to others, their distrust and insecurities make it hard for them to function properly in a romantic relationship (Bartholomew & Horowitz, 1991) suggesting they function (i.e., cope) better when alone.

The analysis run to investigate whether there was a significant relationship between not being in a romantic relationship and high levels of loneliness was conducted in order to investigate whether not being in a romantic relationship could cause higher loneliness scores compared to if participants were currently in a romantic relationship. The χ^2- test for independence did not yield significant results. This indicates that the high scores on feelings of loneliness are not related to relationship status. This means the convergence of coping scores for people with high loneliness scores compared to people with lower loneliness scores regardless of attachment style, is not due to the fact that those are also people without a romantic relationship.

Limitations and future directions

The current study's main strength is the focus on the two interpersonal moderating factors of loneliness and relationship status. These two factors can be seen as a risk factor and protective factor respectively for the employment of adaptive coping strategies. Comparing the four adult attachment style groups on these factors creates a balanced overview of the interpersonal factors which could impact the employment of adaptive coping strategies. However, the current study also has a number of limitations that need to be taken into consideration when interpreting the results and drawing inferences from the results obtained.

First of all, there are a number of factors that impact the generalizability of the study. The sample was taken from university students enrolled in the programs for Psychology and Educational sciences. This has several consequences for the study and its results. Most students enrolled in these courses are female resulting in unequal gender groups within this study (91% female). This made investigation into gender effects impossible. Future research will need to specifically aim at obtaining more equal gender groups in order to be able to specify if any effects of attachment on coping and additional moderating effects can be generalized to both genders or whether the effects are gender specific. Being able to compare groups based on gender could have an impact on the results regarding loneliness and relationship status as well since research has shown a distinct difference in sociability and need for social contact between men and women (Eaton et al., 1991; Igarashi et al., 2005). Also, including participants from a more diverse set of courses will help to generalize results to larger groups in society. Furthermore, all participants were university students implicating a certain level of health and education. Generalizability of the results to clinical setting is therefore limited. Replications of this and previous research in clinical settings will help further our understanding of the mechanisms in question and can lead to indications for interventions when problems arise in interpersonal relationships.

The second set of limitations that could have an impact on the study and the findings concerns the chosen research measures. Specifically, the measure of attachment in the current study is limited. Designation of participants to a specific attachment style group was based on their answer to a single question. This calls into question the reliability of this measure and assigning method. Self-report questionnaires can be subject to bias, personal interpretation, and social desirability (Vazire & Mehl, 2008) which could result in a skewed representation of one group compared to the other. In this current study the secure attachment group was larger (48.8%) than the other groups, however, research has indicated a population

distribution of around 55-65% secure attachment among adult (Collins & Read, 1990; Levy et al., 2011). Using a different measure could improve the reliability of the data and the results from the study. The Adult Attachment Scale (AAS) developed by Collins and Read (1990) is a scale based on the division used by Hazan and Shaver (1987) and could be used as a more objective measure to assess the attachment style of young adults. Although the division of participants to the different attachment groups was not significantly different from what would be expected based on population statistics, the relatively small sample size meant that for the preoccupied attachment group, there were only 27 participants. This makes it hard to confidently generalize any results that are obtained to the population. Furthermore, the loneliness questionnaire did not differentiate between the different types of loneliness making it impossible to determine whether high feelings of loneliness are caused by lack of a romantic relationship (i.e., emotional loneliness) or whether those feelings of loneliness were a result of social loneliness (Deckx et al., 2018). Future research will need to focus attention on differentiating between the types of loneliness to see if this has an impact on the association between attachment and adaptive coping strategies

Conclusion

The present study was able to support findings from previous research that suggest attachment style impacts the way people cope in life (e.g., Dawson et al., 2014; Trejnowska et al., 2019). Support for the moderating effects of loneliness and relationship status was not found. Human interactions are subject to a great variety of factors that influence them. People are always influenced by other people and their relationships with them. The attachments people form with people around them are also influenced by many factors that can contribute to or interfere with a healthy development and employment of coping strategies. Future investigation will need to focus attention on gaining insight into bigger, more diverse groups of people, using more reliable measurement tools, and differentiating between sources of

loneliness to broaden our understanding of all factors that impact the link between attachment style and adaptive coping strategies among young adults. However, the current findings provide a base to build on to further our understanding of the mechanisms involved in the way people learn to deal with adversities in life, whether it be bad traffic on your way to work, moving to a new city, or losing a loved one. This in turn, can provide indications for interventions and treatment within clinical practice.

References

American Psychological Association. (2016). APA college dictionary of psychology (2nd ed.). Washington, DC: Author

Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Journal of Social and Personal Relationships, 7*, 147-178, doi: 10.1177/0265407590072001

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226-244, doi: 10.1037/0022-3514.61.2.226

Bernardon, S., Babb, S. A., Hakim-Larson, & Gragg, M. (2011). Loneliness, attachment, and the perception and use of social support in university students. *Canadian Journal of Behavioural Sciences, 43*, 40-51, doi: 10.1037/a0021199

Bogaerts, S., Vanheule, S., & Desmet, M. (2006). Feelings of subjective emotional loneliness: And exploration of attachment. *Social Behavior and Personality, 34*, 797-812, doi: 10.2224/sbp.2006.34.7.797

Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology, 28*, 759-775, doi: 10.1037/10155-029

Brown, S. L., Teufel, J. A., Birch, D. A., & Kancherla, V. (2006). Gender, age, and behavior differences in early adolescent worry. *Journal of School Health, 76*, 430-437l, doi: 10.1111/j.1746-1561.2006.00137.x

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine, 4*, 92-100.

Chapman, P. L., & Mullis, R. L. (1999). Adolescent coping strategies and self-esteem. *Child Study Journal, 29*, 69, https://link.gale.com/apps/doc/A57603787/HRCA?u=anon~3ec5d1ed&sid=googleScholar&xid=90ba07a1

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58,* 644-663.

Curto, J. D., & Pinto J. C. (2011). The corrected VIF (CVIF). *Journal of Applied Statistics, 38,* 1499-1507, doi: 10.1080/02664763.2010.505956

Davis, D., Shaver, P. R., & Vernon, M. L. (2003). Physical, emotional, and behavioral reactions to breaking up: The role of gender, age, emotional involvement, and attachment style. *Personality and Social Psychology Bulletin, 29,* 871-884, doi: 10.1177/0146167203252884

Dawson, A. E., Allen, J. P., Marston, E. G., Hafen, C. A., & Schad, M. M. (2014). Adolescent insecure attachment as a predictor of maladaptive coping and externalizing behaviors in emerging childhood. *Attachment and Human Development, 16,* 462-478, doi: 10.1080/14616734.2014.934848

Deckx, L., Van den Akker, M., Buntinx, F., & Van Driel, M. (2018). A systematic literature review on the association between loneliness and coping strategies. *Psychology, Health and Medicine, 23,* 899-916, doi: 10.1080/13548506.2018.1446096

Doyle, C., & Cicchetti, D. (2017). From the cradle to the grave: The effect of adverse caregiving environments on attachment and relationships throughout the lifespan. *Clinical Psychology: Science and Practice, 24,* 203-217, doi: 10.1111/cpsp.12192

Dufour, J., & Dagenais, M. G. (1985). Durbin-Watson test for serial correlation in regressions with missing observations. *Journal of Econometrics, 27,* 371-381, doi: 10.1016/0304-4076(85)90012-0

Eaton, Y. M., Mitchell, M. L., & Jolley, J. M. (1991). Gender differences in the development of relationships during late adolescence. *Adolescence, 26,* 565

Eisenbarth, C. (2012). Does self-esteem moderate the relations among perceived stress, coping, and depression? *College Student Journal, 46,* 149-157

Faul, F., Erdfelder, E., Lang, A.-G. & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior Research Methods, 39, 175-191.

Goldberg-Looney, L. D., Perrin, P. B., Snipes, D. J., Calton, J. M. (2016). Coping styles used by sexual minority men who experience intimate partner violence. *Journal of Clinical Nursing*, *25*, 3687–3696, doi: 10.1111/jocn.13388

Granqvist, P. (2005). Building a bridge between attachment and religious coping: Tests of moderators and mediators. *Mental Health, Religion and Culture, 8,* 35-47, doi: 10.1080/13674670410001666598

Hampel, P (2007). Brief report: Coping among Australian children and adolescents. *Journal of Adolescence, 30*, 885-890, doi: 10.1016/j.adolescence.2007.04.005

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Publications.

Hazan, C. & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524, doi: 10.4324/9781351153683-17

Hazan, C., & Shaver, P. R. (1994) Attachment as an Organizational Framework for Research on Close Relationships. *Psychological Inquiry, 5*, 1-22, doi: 10.1207/ s15327965pli0501_1

Hinkle, D. E, Wiersma, W., & Jurs, S. G. (2003). *Applied statistics for the behavioral sciences* (5th ed.). Wadsworth, Cengage Learning; Brooks/Cole Cengage Learning

Hoang Diem Ngo, T. (2012). The steps to follow in a multiple regression analysis. Statistics and Data Analysis. Available online at http://support.sas.com/resources/papers/proceedings12/333-2012.pdf

IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.

Igarashi, T., Takai, J. & Yoshida, T. (2005). Gender differences in social network development via mobile phone text messages: A longitudinal study. *Journal of Social and Personal Relationships, 22,* 691-713, doi: 10.1177/0265407505056492

Jou, Y.-J., Huang, C.-C. L., & Cho, H.-J. (2014). A VIF-based optimization model to alleviate collinearity problems in multiple linear regression. *Computational Statistics, 29,* 1515-1541, doi: 10.1007/s00180-014-0504-3

Levy, K. N., Ellison, W. D., Scott, L. N. & Bernecker, S. L. (2011). Attachment style. *Journal of Clinical Psychology: In Session, 67,* 193-203, doi: 10.1002/jcl p.20756

Lippert, T. & Prager, K. (2001). Daily experiences of intimacy: A study of couples. *Personal Relationships, 8,* 283-298, doi: 10.1111/j.1475-6811.2001.tb00041.x

Mak, L., & Marshall, S. K. (2004). Perceived mattering in young adults' romantic relationships. *Journal of Social and Personal Relationships, 21,* 469-486, doi: 10.1177/0265407504044842

Muhonen, T., & Torkelson, E. (2011). Exploring coping effectiveness and optimisms among municipal employees. *Psychology, 2,* 584-589, doi: 10.4236/psych.2011.26090

Osborne, J. W. & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research, and Evaluation, 8*. Doi: https://doi.org/10.7275/r222-hv23 Available online: http://PAREonline.net/getvn.asp?v=8&n=2.

Pallant, J. (2016). SPSS survival manual: A step by step guide to data analysis using IBM SPSS (6th ed.). McGraw-Hill Education

Pascuzzo, K., Cyr, C., & Moss, E. (2013). Longitudinal association between adolescent attachment, adult romantic attachment, and emotion regulation strategies. *Attachment and Human Development, 15,* 83-103, doi: 10.1080/14616734.2013.745713

Reis, H. T., Lemay Jr, E. P., & Finkenauer, C. (2017). Toward understanding understanding: The importance of feeling understood in relationships. *Social and Personality Psychological Compass, 11*, 1-22, doi: 10.1111/spc3.12308

Roekel, E. van (2014). Lonely reflections: Variations in adolescents' trait and state loneliness (doctoral dissertation, Radboud Universiteit Nijmegen). https://repository.ubn.ru.nl/bitstream/handle/2066/127135/127135.pdf

Rokach, A. & Brock, H. (1998). Coping With Loneliness. *The Journal of Psychology*, *132*, 107-127, doi: 10.1080/00223989809599269

Romero, D. H., Riggs, S. A., Raiche, E., McGuffin, J., & Captari, L. E. (2020). Attachment, coping, and psychological symptoms among military veterans and active duty personnel. *Anxiety, Stress, and Coping, 33*, 326-351, doi: 10.1080/10615806.2020.1723008

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology, 39,* 472-480, doi: 10.1037/0022-3514.39.3.472

Smith, T. W. (2019). Relationships matter: Progress and challenges in research on the health effects of intimate relationships. *Psychosomatic Medicine, 81*, 2-6, doi: 10.1097/PSY.0000000000000660

Stansfeld, S., Head, J., Bartley, M., & Fonagy, P. (2008). Social position, early deprivation and the development of attachment. *Social Psychiatry and Psychiatric Epidemiology, 43*, 516-526, doi: 10.1007/s00127-008-0330-4

Szwedo, D. E., Hessel, E. T., & Allen, J. P. (2017). Supportive romantic relationships as predictors of resilience against early adolescent maternal negativity. *Journal of Youth and Adolescence, 46*, 454-465, doi: 10.1007/s10964-016-0507-1

Trejnowska, A., Goodall, K., Rush, R., Ellison, M., & McVittie, C. (2019). The relationship between adult attachment and coping with brain tumour: The mediating role of social support. *Psycho-Oncology, 29*, 729-736, doi: 10.1002/pon.5325

Vazire, S., & Mehl, M. R. (2008). Knowing me, knowing you: The accuracy and unique predictive validity of self-ratings and other-ratings of daily behavior. Journal of Personality and Social Psychology, 95 (5), 1202-1216, DOI: 10.1037/a0013314

Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques*. (2nd ed.) Sage Publications.

Washington, T. D. (2009). Psychological stress and anxiety in middle to late childhood and early adolescence: Manifestations and management. *Journal of Pediatric Nursing, 24*, 302-313, doi: 10.1016/j.pedn.2008.04.011

Williams, M. N., Grajales, C. A. G., & Kurkiewicz, D. (2013). Assumptions of multiple regression: Correcting two misconceptions. *Practical Assessment, Research, and Evaluation, 18*, doi: https://doi.org/10.7275/55hn-wk47 Available at: https://scholarworks.umass.edu/pare/vol18/iss1/11

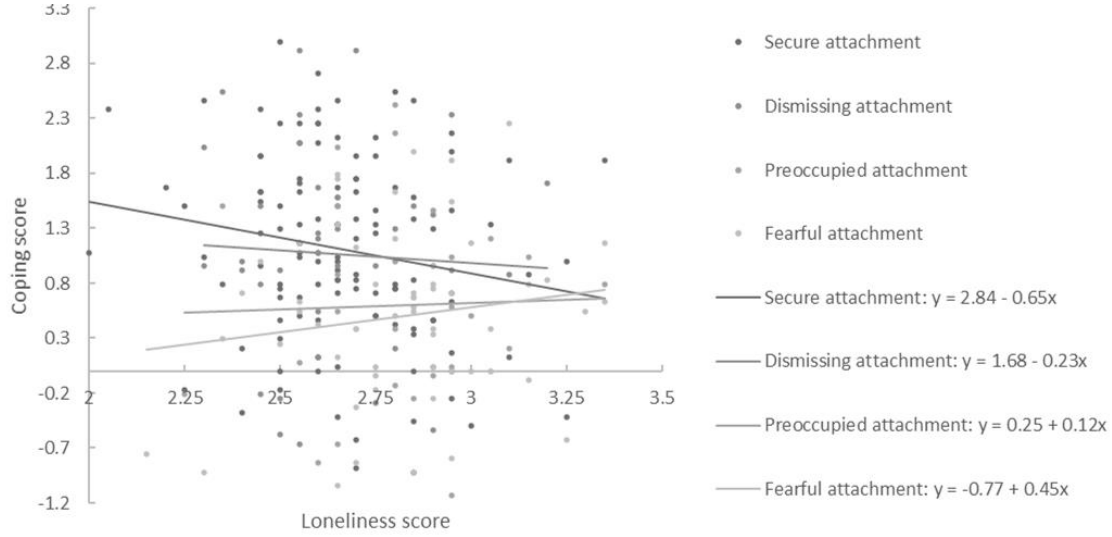
Williams, K., & McGillicuddy-De Lisi, A. (2000). Coping strategies in adolescents. *Journal of Applied Developmental Psychology, 20*, 537-549, doi: 10.1016/S0193-3973(99)00025-8

Appendix A

Linear relationships between coping scores and loneliness scores used to check the assumption of linearity

Figure A1

Linear relationship between coping and loneliness for the four adult attachment styles



Appendix B

Normal Q-Q plots used to check the assumption of multivariate normality

Figure B1

Normal Q-Q plot for total coping score

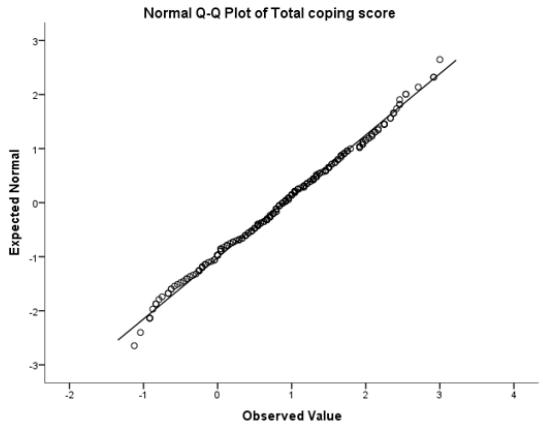


Figure B2

Normal Q-Q plot for loneliness score

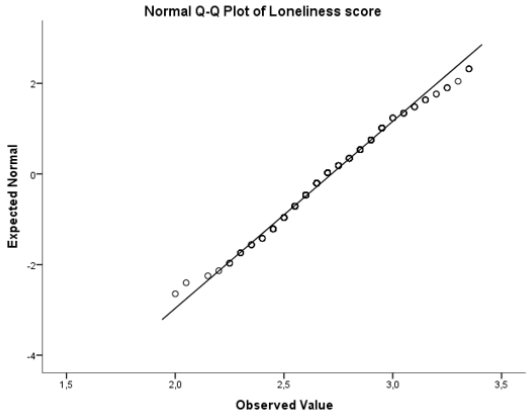


Figure B3

Normal Q-Q plot for total coping score for the four different attachment styles

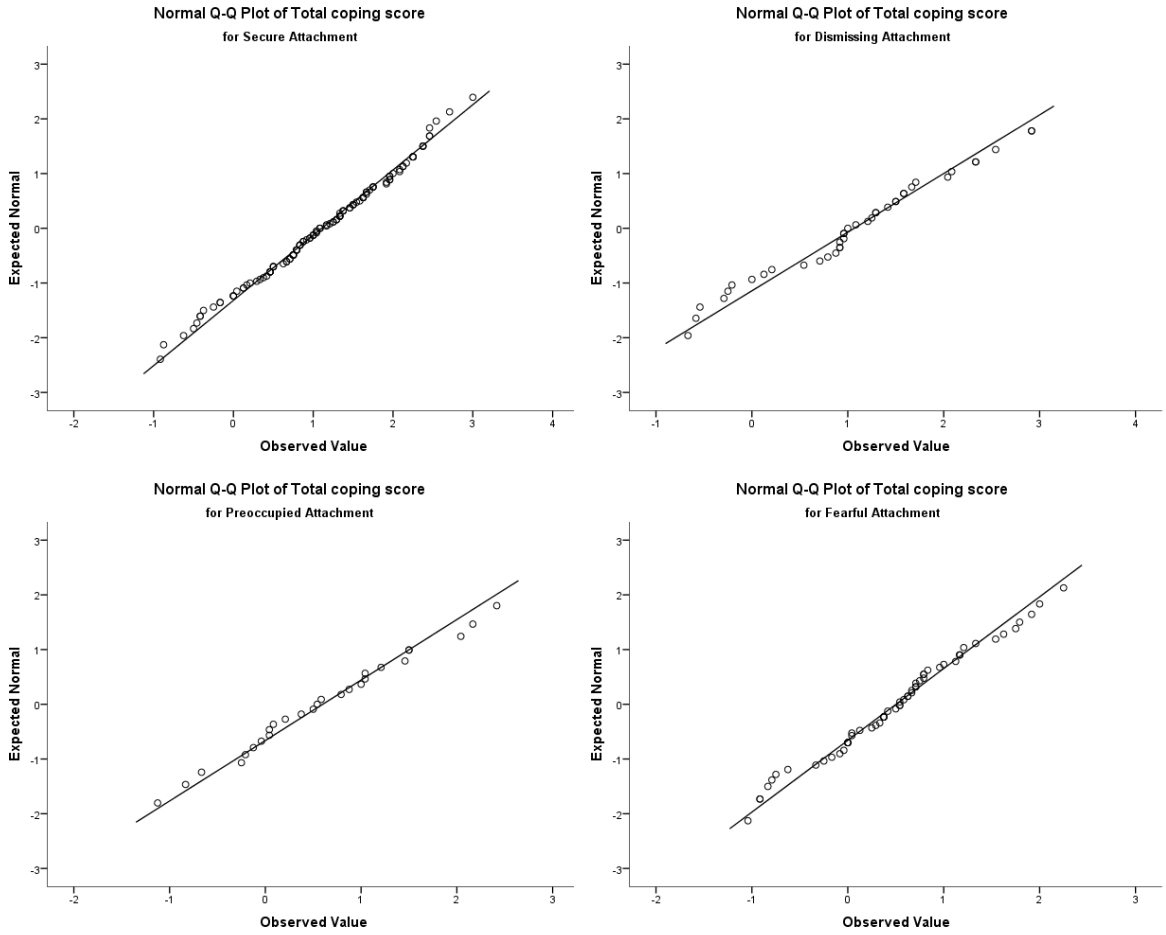


Figure B4

Normal Q-Q plots of total coping score for relationship status