

Cognitive Jealousy, Adult Attachment, Romantic Relationship Satisfaction



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COGNITIVE JEALOUSY MEDIATING ADULT ATTACHMENT AND ROMANTIC
RELATIONSHIP SATISFACTION AMONG EMERGING ADULTS IN MALAYSIA

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A RESEARCH PROJECT

SUBMITTED IN

PARTIAL FULLFILLMENT OF THE REQUIREMENTS FOR
THE BACHELOR OF SOCIAL SCIENCE (HONS) PSYCHOLOGY

FACULTY OF ARTS AND SOCIAL SCIENCE

UNIVERSITI TUNKU ABDUL RAHMAN

SEPTEMBER 2024

Cognitive Jealousy, Adult Attachment, Romantic Relationship Satisfaction

Cognitive Jealousy Mediating

Adult Attachment and Romantic Relationship Satisfaction Among Emerging Adults In
Malaysia

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This research project is submitted in partial fulfilment of the requirements for the

Bachelor of Social Science (Hons) Psychology, Faculty of Arts and Social Science, Universiti

Tunku Abdul Rahman. Submitted in September 202

Acknowledgement

First of all, we would like to extend our heartfelt thanks to our research supervisor, Dr Gan Su Wan, whose expertise, patience, and encouragement have greatly contributed to the quality and success of our thesis. We are truly thanks for Dr Gan who spend her time helping and guiding us throughout the research. Without her guidance and support, it is impossible for us to complete this research smoothly.

Our family members play a role in providing emotional support and encouragement which we are also felt appreciated. Furthermore, we would like to express our deepest gratitude to our friends, especially Wendy Ngu Tang Xi, Chang Ke Jing, Ricky Tan Wai Hong, Colette Ang Chien Yueh, Goh Hui Shan, Jolyn Chua Jiaen for providing support and encouragement throughout our study.

Last but not least, we are also immensely grateful to all the respondents who have participated in our study. The willingness of the respondents to spend their time, experience and insights was crucial to the success of our study. Without their valuable contribution, our study would not have been possible.

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APPROVAL FORM

This research paper attached here, entitled “Cognitive Jealousy Mediating Adult Attachment and Romantic Relationship Satisfaction Among Emerging Adults in Malaysia” prepared and submitted by “Ong Rui Tao, Chong Hong Da and Sebastian Chan Kian Sheng” in partial fulfillment of the requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.

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Date 26 August 2024

DECLARATION

I declare that the materials contained in this paper is the end result of our own work and that due acknowledgement has been given in the bibliography and references to all sources be they printed, electronic or personal.

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Abstract

Jealousy may be a detrimental element in a romantic relationship. Past studies in Malaysia focused on adult attachment styles and marital satisfaction, but lack of research studies associated the topic with the effect of cognitive jealousy especially in emerging adults who are in the stage of forming intimate relationship. Hence, this study investigated the mediating role of cognitive jealousy between insecure attachment styles (anxious and avoidant) and romantic relationship satisfaction among Malaysian emerging adults. Two hundred eighty-three participants aged 18 to 29 ($Mean = 22.63$, $SD = 2.13$) were recruited with purposive sampling method. The instruments include the Experiences in Close Relationships Scale (ECR), the Multidimensional Jealousy Scale (MJS)- Cognitive Jealousy subscale, and the Relationship Assessment Scale (RAS). PROCESS macro-Model 4 with 5000 bootstrap samples was used to analyse the results. The result showed that anxious and avoidant attachment styles predict cognitive jealousy positively. The anxious attachment style and avoidant attachment style also predict romantic relationship satisfaction negatively. Cognitive jealousy is also a negative predictor of romantic relationship satisfaction. For the mediating effect, cognitive jealousy partially mediates the relationship between insecure adult attachment styles (anxious and avoidant) and romantic relationship satisfaction. Based on the result of this study, cognitive jealousy plays a crucial role between the relationship of insecure adult attachment styles and romantic relationship among emerging adults. Insecure attached people will arouse more cognitive jealousy in their intimate relationship and have more behaviours that will affect their relationship satisfaction. This study provides an overview of the role of insecure adult attachment styles and cognitive jealousy in the romantic relationship satisfaction of heterosexual emerging adults in Malaysia. Last but not least, the findings could contribute to addressing the issues of fertility and divorce rate in Malaysia and provide a critical insight for future research and government to develop

programs to cope with cognitive jealousy for Malaysia emerging adults to enhance and maintain their relationship satisfaction.

Keywords: Anxious attachment, avoidant attachment, cognitive jealousy, romantic relationship satisfaction, emerging adults, Malaysia

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List of Abbreviations

Abbreviations	
ECR	Experiences in Close Relationship
MJS	Multidimensional Jealousy Scale
RAS	Relationship Assessment Scale
SPSS	Statistical Package for Social Sciences
SERC	Scientific and Ethical Review Committee
UTAR	Universiti Tunku Abdul Rahman
SNS	Social Networking Sites

Chapter I

Introduction

1.1 Background of Study

People usually characterize satisfaction within a relationship as a subjective evaluation of the positive or negative aspects of their relationship (Gable & Poore, 2008). Romantic relationships are distinct from earlier friendships due to heightened emotionality, romantic attraction, and sexual desires triggered by pubertal development (Shulman et al., 2011). A romantic relationship has the highest level of intimacy in five components: mutuality, commitment, physical intimacy, cognitive intimacy, and affective intimacy, compared to a stranger relationship, enemy relationship, and role relationship (Moss & Schwebel, 1993). Positive relationship satisfaction is related to multiple dimensions of human life, such as mental health (DiBello et al., 2017; Gilmour et al., 2021), physical health (Prigerson et al., 1999), happiness (Diener & Seligman, 2002), and life satisfaction (YAM, 2023). An early example of research on married couples in 1992 revealed that significant contentment within romantic relationships correlates with increased relationship stability and reduced instances of relationship breakup (Gottman & Levenson, 1992). Hence, satisfaction is essential in maintaining romantic relationships, including married or unmarried ones.

Young et al. (2010) suggested that adolescents typically initiate romantic relationships, and this trend continues as they progress through various stages of life. The importance and development of a romantic relationship are ongoing throughout life, and numerous emerging adults encounter choices regarding lasting commitments, such as living together and getting married. Erikson suggested psychosocial theory and introduced the eight development stages in 1950 (Erikson, 1950). He described the impact of social experience through people's lifespan, following the epigenetic principle that people continue development only if they successfully resolve and deal with the conflict. According to the

stages of development developed by Erik Erikson, the stages of intimacy versus isolation start from age 19. Emerging adults are between 18 and 29 years old (Munsey, 2006). In the same article, emerging adults are characterized by five distinct age-related traits. These encompass exploring their identity, experiencing instability with frequent residence changes, aiming for independence, feeling in-between adulthood, and embracing a sense of optimism and possibilities about their future, unlike their parents' experiences. Therefore, emerging adults are the people who suffer from developmental conflicts related to romantic relationships.

Past studies found that adult attachment styles are related to intimate relationships (Hazan & Shaver, 1987). There are three types of adult attachment: secure, anxious, and avoidant. They can be categorized into secure and insecure adult attachment styles in their measurement. It is marked by internal mechanisms that foster adaptability and positivity in their interactions. The result of Simmons et al. (2009) suggests that viewing secure attachment as a beneficial psychological asset. Past research stated that people with secure attachment styles tend to show low levels of jealousy until they believe their relationship is at risk (Richter et al., 2022). A study on college students found that people with insecure attachment styles exhibited notable endorsement of relationship-specific irrational beliefs compared to individuals with secure attachment styles, and the irrational beliefs are related to decreased relationship satisfaction (Ainsworth & Bowlby, 1991). Secure attachment style will not be included in this study, because secure attachment adult promotes healthy connections and empowers individuals to function independently and collaboratively as needed (Simmons et al., 2009). The traits of secure attachment are that individuals feel at ease relying on others and establishing close relationships effortlessly (Mickelson et al., 1997), showed a significant positive relationship to romantic relationship satisfaction by past studies (Campbell & Moore, 2005; Sommantico et al., 2019). So, this study will only focus on the role of cognitive jealousy in insecure attachment styles towards romantic relationship satisfaction. Adult

attachment style encompasses a set of beliefs, anticipations, and uncertainties that individuals possess concerning themselves and their intimate connections (Fraley & Roisman, 2019).

Much research has found that adult attachment style development is significant between ages 18 and 27 (Dinero et al., 2008; Fraley & Roisman, 2019; Salort et al., 2011, Zayas et al., 2011). Hence, insecure adult attachment may be essential in negatively affecting romantic relationship satisfaction in emerging adults.

Cognitive jealousy is one of the dimensions of romantic jealousy in people's thoughts regarding suspicion about their partner and a rival (Pfeiffer & Wong, 1989). It shares a particular cognitive foundation with maintaining relationships, uncertainty within relationships, and constructive reactions, all of which can be oriented towards gaining sufficient attention in their close relationships (Bevan, 2015). Past studies found that the insecure attachment style is positively connected with physical, emotional, and behavioural reactions to jealousy, with feelings of inadequacy being a notable cause for such jealousy (Güçlü et al., 2017). Besides, cognitive jealousy, seen as a negative aspect, significantly influences relationship outcomes. It contributes significantly to uncertainty, dissatisfaction, and commitment within relationships, as indicated by various (Andersen et al., 1995; Dainton & Aylor, 2001; Elphinston et al., 2013).

In conclusion, this study draws a brief connection between the adult attachment style and romantic relationship satisfaction and highlights that cognitive jealousy may mediate the connection between the variables. More detailed information will be discussed in chapter two.

1.2 Problem Statement

Nowadays, more adults prefer to live without a spouse or partner. In the United States, statistics show a rise in unpartnered adults from 29% in 1990 to 38% in 2019 (Fry & Parker, 2021). In Malaysia, the median age for women in marriage is rising from 26 years in

2021 to 27 years in 2022 (Department of Statistics Malaysia, 2023). By comparing the statistics from the Department of Statistics Malaysia (DOSM), the marriage rate decreased by 0.5% from 215973 cases in 2021 to 214824 cases in 2022, and the divorce rate increased by 43.1% from 43936 cases in 2021 to 62809 cases in 2022 (Department of Statistics Malaysia, 2023). One of the reasons for the low marriage rate and high divorce rate could be low relationship satisfaction (Solomon & Jackson, 2014).

Furthermore, the ageing population in Malaysia increased, the fertility rate declined, and the population below 14 years decreased. As shown in the infographic posted by Bernama (2018) on Twitter, gathered information on the economic outlook for 2019 and shows that the population age equal to and below 14 years was 44.5% in 1970, 24.1% in 2017, and it predicted that it would continue to decrease to 18.6% in 2040 by following the trend. The ongoing decrease in fertility rates has led to a shortage in the workforce and a swift increase in the population's average age (Tey, 2020). An influx of migrant workers accompanies this demographic shift. The rapid increase in the number of older adults reliant on support poses a significant challenge to the social security system. A past study found that one of the reasons affecting childbearing motivation is marital satisfaction (Beaujot & Tong, 1985). However, a study found that marital satisfaction was negatively related to an individual's age (Dobrowolska et al., 2020). The meta-analysis found a decrease in relationship satisfaction from age 20 until age 40, with a higher proportion of samples with children (Bühler et al., 2021). Hence, the topic of romantic relationship satisfaction among emerging adults is crucial to study.

In Malaysia, most of the studies focus on romantic relationship satisfaction are mainly conducted on married couples with a mean age range between 35 and 42, but there is a lack of research on emerging adults (Ng et al., 2013; Shakir et al., 2021; Yahya et al., 2021; Zainol et al., 2023). Studying the topic of romantic relationships among individuals in middle

adulthood is important. However, it is crucial to understand the topic before they enter middle adulthood. The stages of Erikson's psychosocial development theory show that emerging adults are the population who struggle between intimacy and isolation (Erikson, 1950). Meanwhile, they can only proceed to the next psychosocial development stage if the conflict in the current development stage is solved. A 25-year longitudinal study found that participants who initially reported greater intimacy levels also demonstrated elevated levels of intimacy in the end, correlating with increased marital satisfaction (Boden et al., 2010). The results support Erikson's developmental stages theory, and they indicate that the intimacy abilities learned during late adolescence and continued refinement through young adulthood significantly impact marital adjustment even after 25 years. Furthermore, participants who remained married throughout the study displayed higher levels of marital adjustment and satisfaction compared to those who shifted from being single to married at some point within the duration of the study. Thus, this study examines the factors that can contribute to the satisfaction of emerging adults in their romantic relationships.

One of the well-known reasons to end a relationship is low relationship satisfaction. Apostolou found that the most frequent reasons for male to stay single are they putting little effort into establishing a relationship, low self-confidence, and a previous relationship bringing terrible experiences (Apostolou, 2019). Another study on the reason for staying single, done by the same author, found that females scored higher in the items related to having a negative experience in past romantic relationship experiences (Apostolou, 2017). Therefore, low relationship satisfaction may lead to the end of the relationship and may be one of the reasons to stay single. Thus, examining the relationship satisfaction of emerging adults and its contributing factors is worthwhile.

In this era, internet and social media usage are essential in everyone's life (Stockdale & Conye, 2020), which may lead to cognitive jealousy in romantic refocusing (Tandon et al.,

2021). A study focusing on the impact of social media found a significant relationship between social media use and feelings of jealousy (Van Ouytsel et al., 2019). The research indicates that social media, including platforms such as Snapchat and photo-sharing sites, can induce jealousy in adolescent romantic relationships by displaying images of partners engaged in activities without them, leading to uncertainty and varied responses among teens. An emerging adult with insecure attachment at age 18 is likely to forecast feelings of jealousy by the age of 22 (Choe et al., 2021). Experiencing jealousy correlates with diminished relationship satisfaction and lower overall relationship quality (Dandurand & Lafontaine, 2014). Adults, including emerging adults, experience attachment anxiety, intensifying jealousy and impacting satisfaction in those affected by this behaviour (David & Roberts, 2021). Thus, it is important to examine the association among attachment styles, cognitive jealousy, and romantic relationship satisfaction of emerging adults in this digital era.

Whether romantic relationship satisfaction correlates with adult attachment style or whether the presence of cognitive jealousy changes the satisfaction between the partners. This type of research has been extensively studied around the world (David & Roberts, 2021; Guzmán-González et al., 2020; Kılıç & Altınok, 2021). Limited research has explored whether the insecure adult attachment styles predict the romantic relationship satisfaction, and how cognitive jealousy affects satisfaction among partners in Malaysia. Given differing views on relationship satisfaction in Western and Eastern cultures, it is crucial to conduct empirical studies examining how cognitive jealousy mediates between adult attachment and romantic satisfaction among emerging adults in Malaysia.

Hence, this study aims to explore cognitive jealousy as a mediating role between adult attachment style and romantic relationship satisfaction.

1.3 Research Objectives

1. To investigate the predicting effect of anxious attachment on romantic relationship

- satisfaction among emerging adults in Malaysia.
2. To investigate the predicting effect of avoidance attachment on romantic relationship satisfaction among emerging adults in Malaysia.
 3. To examine the predicting effect of anxious attachment on cognitive jealousy among emerging adults in Malaysia.
 4. To examine the predicting effect of avoidance attachment on cognitive jealousy among emerging adults in Malaysia.
 5. To investigate the predicting effect of cognitive jealousy on romantic relationship satisfaction among emerging adults in Malaysia
 6. To investigate the mediating role of cognitive jealousy on the relationship between anxious attachment and romantic relationship satisfaction among emerging adults in Malaysia.
 7. To investigate the mediating role of cognitive jealousy on the relationship between avoidance attachment and romantic relationship satisfaction among emerging adults in Malaysia.

1.4 Research Questions

1. Does anxious attachment positively predict romantic relationship satisfaction among emerging adults in Malaysia?
2. Does avoidance attachment positively predict romantic relationship satisfaction among emerging adults in Malaysia?
3. Does anxious attachment positively predict cognitive jealousy among emerging adults in Malaysia?
4. Does avoidance attachment positively predict cognitive jealousy among emerging adults in Malaysia?
5. Does cognitive jealousy negatively predict romantic relationship satisfaction among

emerging adults in Malaysia?

6. Does cognitive jealousy play a mediating role between anxious attachment and romantic relationship satisfaction among emerging adults in Malaysia?
7. Does cognitive jealousy play a mediating role between avoidance attachment and romantic relationship satisfaction among emerging adults in Malaysia?

1.5 Research Hypotheses

H1: Anxious attachment negatively predicts romantic relationship satisfaction among emerging adults in Malaysia.

H2: Avoidance attachment negatively predicts romantic relationship satisfaction among emerging adults in Malaysia.

H3: Anxious attachment positively predicts cognitive jealousy among emerging adults in Malaysia.

H4: Avoidance attachment positively predicts cognitive jealousy among emerging adults in Malaysia.

H5: Cognitive jealousy negatively predicts romantic relationship satisfaction among emerging adults in Malaysia.

H6: There is a significant mediating effect of cognitive jealousy on the relationship between anxious attachment and romantic relationship satisfaction among emerging adults in Malaysia.

H7: There is a significant mediating effect of cognitive jealousy on the relationship between avoidance attachment and romantic relationship satisfaction among emerging adults in Malaysia.

1.6 Conceptual Definition of Terms

1.6.1 Adult Attachment

Adult attachment is the inherent need and how an individual forms a close and sustaining relationship that aims to bring pleasure and gain protection (Sable, 2008). There are two dimensions underlying insecure adult attachment orientations: avoidant and anxiety attachment styles (Vollmann et al., 2019). According to Hazan and Shaver (1987), avoidant people reported fear of closeness, and ambivalent respondents were marked to have jealousy, emotional instability, desire for reciprocation, increased conflict, and insecurity in relationships.

1.6.2 Cognitive Jealousy

Cognitive jealousy pertains to an individual's rational or irrational thoughts, concerns, and suspicions regarding their partner's potential infidelity, whether imagined or factual (DiBello et al., 2015). Cognitive jealousy is primarily interpersonal and typically resides within an individual's thoughts, often not significantly noticeable or relevant to both partners (Guerrero et al., 1993). Cognitive jealousy can be the presence of suspicion in a partner's loyalty, which will affect relationship satisfaction (Pfeiffer & Wong, 1989).

1.6.3 Romantic Relationship Satisfaction

Romantic relationship satisfaction pertains to individuals' positive or negative feelings regarding their romantic relationship (Rusbult et al., 1998). People create an overarching evaluative standpoint about their romantic relationship, positioning it along a spectrum from good to bad, and this assessment influences their perceptions of satisfaction and quality (Fletcher et al., 2000).

1.6.4 Emerging Adult

Emerging adults are between 18 and 29 and are described as periods that reach the

end of adolescence and transform into young adults who start to bear the responsibilities of jobs, marriage, and parenthood (Munsey, 2006).

1.7 Operational Definitions of Terms

1.7.1 Adult Attachment

Experiences in Close Relationship (ECR) measure is one of the well-known self-report scales often used and validated in Malaysia (Azhar & Ghazali, 2020). Brennan et al. (1998) developed the ERC to assess attachment anxiety and avoidance by comprising 36 items, 18 on each of the two subscales. Respondents report themselves on the levels of agreement on each item, and high scores refer to the high level of the relevant construct (Zavattini & Busonera, 2017).

1.7.2 Cognitive Jealousy

Cognitive jealousy will be accessed using the Multidimensional Jealousy Scale (MJS) subscale constructed by Pfeiffer and Wong (1989). MJS consists of 24 items, divided into three subscales with eight items each. This study will only use the cognitive jealousy subscale. Higher scores in the cognitive jealousy subscale represent a higher level of cognitive jealousy.

1.7.3 Romantic Relationship Satisfaction

The Relationship Assessment Scale (RAS) is an instrument developed by Hendrick and colleagues to measure the individual's satisfaction with their romantic relationship (Hendrick et al., 1998). The RAS, a 7-item scale, assesses overall romantic relationship satisfaction, which includes two reversed items. Participants rate each item using a 5-point scale from 1 (*low satisfaction*) to 5 (*high satisfaction*); the greater scores indicate higher satisfaction with the individual's romantic relationship.

1.7.4 Emerging Adult

Emerging adults in this study refers to individuals aged between 18 to 29. Emerging adults in this study are individuals living in Malaysia and currently engaged in intimate relationships, such as couples or married couples.

1.8 Significant of Study

This study aimed to underscore the significance of the negative outcome of insecure adult attachment styles on emerging adults' romantic relationship satisfaction and understand the potential role of cognitive jealousy in enhancing emerging adults' satisfaction within romantic relationships.

Primarily, this research will enhance individuals' concern about the impact of insecure attachment styles on navigating the complexities and conflicts within intimate relationships among emerging adults. By comprehending how cognitive jealousy influences romantic relationship satisfaction, individuals can make informed decisions, cultivate secure attachment styles, and mitigate jealousy, fortifying their relationships and fostering greater satisfaction.

Moreover, this study fills the literature gap in adult attachment among emerging adults and provides valuable insights into the cultural context of romantic relationships in Malaysia. Besides, people in romantic relationships who are married or may participate in a romantic relationship can identify the risk factors that affect relationship satisfaction or may result in ending the relationship. By understanding the negative outcome brought by insecure attachment, people may start taking this topic more seriously and seek therapy to modify the attachment style. This more transparent comprehension of relationship contentment could elevate the overall marriage rate and decrease Malaysia's divorce rate.

Additionally, this study can provide future research or institutions that want to study adult attachment or produce various courses and training such as family counselling and

couple's therapy. Overall, this study's insights hold the potential to equip individuals with the knowledge necessary for nurturing suitable attachment styles, reducing jealousy, and fostering greater satisfaction in romantic relationships, thereby potentially contributing to a more fulfilled and stable relationship in Malaysia.

Chapter II

Literature Review

2.1 Overview of Adult Attachment

The theory of adult attachment was fully developed by Hazan and Shaver (1987). The theory of adult attachment states that variations in early social experiences will significantly affect relationship styles when becoming an adult. The three attachment styles (secure attachment, avoidant attachment, and anxiety attachment) described in the infant literature can explain the attachment styles implied in adult romantic love. Attachment theory also enables researchers to access how the forms develop and how the same dynamics familiar to everyone can be shaped by social experience to have a different outcome on relationship styles (Hazan & Shaver, 1987). However, past studies claimed that an insecure adult attachment style based on the attachment theory can be conceptualised into two dimensions: avoidance and anxiety (Brennan et al., 1998; Fraley et al., 2000; Griffin & Bartholomew, 1994). A past study found that secure attachment leads to a decrease in expected negative emotion triggered by relationship risk, contributing to why secure attachment individuals tend to report lower levels of jealousy than insecure attachment individuals in their relationship (Selterman & Maier, 2013). The researcher stated that the consistent feelings of security lessen the strength of romantic jealousy and related feelings, likely because individuals with secure attachments do not perceive significant threats to their relationships, such as betrayal, abandonment, or intimidating rivals, as frequently as insecure attachment individuals do. Since this study aimed to determine the role of cognitive jealousy in the relationship between adult attachment and romantic relationship satisfaction, secure attachment will not be included. Therefore, this study will focus on the mediating effects of cognitive jealousy between insecure adult attachment, including anxious and avoidant styles and romantic relationship satisfaction.

Expanding the research on adult attachment from infant attachment is being explained in terms of the persistence of one's working model and relationship, a.k.a. mental models (Feeney & Noller, 1990). Mikulincer et al. (2003) proposed a model that specifies the working model of the adult attachment system. The model comprises three essential parts: the first focuses on evaluating threats, activating the primary attachment strategy of seeking proximity; the second assesses the presence of attachment figures, contributing to differences in attachment security and security-based strategies; the third assesses the effectiveness of seeking proximity in managing attachment distress, leading to various secondary attachment strategies. The child's attachment figure may be their parent, while attachment figures of adults tend to be friends or romantic partners (Hazan & Shaver, 1987). Based on Mikulincer's system, primary and secondary strategies refer to seeking proximity to attachment figures, such as romantic partners and deactivation or hyperactivation, respectively. According to Mikulincer et al. (2003), the primary strategies explained that individuals produced a sense of security when attachment figures provided support on time and were responsive to them. Secure attachment can be developed when primary strategies apply to the attachment figure. On the other hand, when an attachment figure cannot provide sufficient response or proximity-seeking is unsuccessful, secondary strategies or deactivation will be implied to inhibit proximity-seeking behaviour from an unresponsive or unavailable attachment figure. Avoidant individuals implied secondary strategies to respond to the often-absent attachment figure (Mikulincer et al., 2003). They seek independence and self-reliance to avoid any chances of activation of the attachment system. Moreover, anxious individuals reflect the other goal of the hyperactivating system, which is to get attention from an unresponsive attachment figure. Hence, anxious individuals try to maintain proximity to attachment figures and keep track of their romantic partners to gain physical or emotional proximity (Mikulincer & Shaver, 2007).

The theory of adult attachment relates to the previous formation of love, including accounts of romantic love and the styles involved in love (Hazan & Shaver, 1987). For some emerging adults, romantic relationships become central sources that provide more emotional and social support than friendship and family relationships (Weisskirch, 2016). Lascano et al. (2014) further confirm that romantic relationships play important developmental, psychological, and social roles among emerging adult college students. Emerging adults with greater intimacy in romantic relationships were reported to have better work performance and develop better self-identity. According to adult attachment theory, individuals with avoidant attachment have a low level of attachment security, compulsive self-reliance and avoid being emotionally too close to others; individuals with anxiety attachment refer to people who also lack attachment security, desire for closeness, excessive worries about their relationships and fear of being rejected (Mikulincer et al., 2003).

2.2 Insecure Adult Attachment

2.2.1 Anxious Attachment

Anxious or anxious attachment assesses the degree of worry that being underappreciated or worried about their romantic partner will leave them away (Simpson & Rholes, 2017). Anxious-attached individuals invest plenty of effort in their relationships and strive to get emotionally attached to romantic partners to gain security. In contrast to avoidant attachment, anxious individuals viewed themselves negatively while viewing their romantic partner more positively or better than them (Hazan & Shaver, 1987). This results in anxious individuals questioning their self-worth, excessive worries about being abandoned by their romantic partner and being overly sensitive towards any signs that their romantic partner is leaving them. Hence, they are motivated to attempt to catch the attention of the attachment figure, such as exaggerating negative emotions (Cassidy & Berlin, 1994). Besides, a study found that highly anxious and avoidant individuals are prone to seek information about their

partner, which aims to create emotional bonds between them and their romantic partners (Rholes et al., 2007).

Furthermore, individuals with attachment anxiety are reported to have unstable self-esteem. Past studies on attachment processes defined attachment anxiety as associated with excessive jealousy and unstable emotional status (Foster et al., 2007). Consistent with the above statement, preoccupied or anxious individuals strongly desire attention and physical affection. Once the needs have not been met, they will feel distressed (Collins, 1996). Hence, anxious attachment is said to have a statistically significant negative relationship towards relationship satisfaction (Ayenew, 2016).

Emerging adulthood refers to the phases of brain growth, mutual support, deepening of pre-existing friendships, family-oriented socialisation, and acquiring social skills required for mating and reproduction (Hochberg & Konner, 2020). Some people who are considered emerging adults will begin attending university, beginning a profession, or even managing early love relationships. All these experiences will influence the individuals with anxious attachment in their relationships.

2.2.2 Avoidance Attachment

Avoidant attachment refers to individuals uncomfortable with closeness and intimacy (Wardecker et al., 2020). Highly avoidant attachment individuals will have opposing views on their romantic partners but have positive or sometimes brittle self-views (Bartholomew, 1990). Avoidant individuals are eager to sustain independence, control, and autonomy in their relationships (Mikulincer, 1998), as they do not want to seek psychological or emotional support from their partner as they believe it is impossible to gain support from their partner. Having such a mindset further reinforces the distancing behaviour and forces them to suppress their negative emotions or thoughts to make themselves independent of others. Fraley et al. (1998) found that individuals with avoidant attachment significantly negatively

correlated with intimacy and closeness-related behaviours. For example, holding hands, mutual gazing or even cuddling.

On the other hand, avoidant adults are frustrated with the need for attachment. They desire social contact and intimacy but simultaneously are stopped by interpersonal distrust and fear of rejection as they strive to gain social approval (Bartholomew, 1990). Adding to the characteristics of avoidant individuals, they experience lower trust in their partners, lack of intimacy, and lower stability in their relationships (Barbaro, 2020; Simpson, 1990). However, an avoidant individual avoids intimacy and is socially avoidant owing to a sense of unlovability and a perception that others would reject and be untrustworthy (Duggan & Brennan, 1994). Avoidant individuals will affect their psychological well-being since they must suppress their emotions. According to Liu et al. (2017), avoidant people are used to suppressing emotional reactions and maintaining emotional distance from others by deactivating emotion processing.

Therefore, this study will investigate the two insecure adult attachments, avoidant and anxious, conceptualized by Griffin and Bartholomew (1994) and their relationships towards romantic satisfaction among emerging adult couples in Malaysia.

2.3 Cognitive Jealousy

Romantic jealousy is defined as a set of thoughts, feelings, and actions that respond to threats to one's self-esteem and affect the existence or quality of one's relationship (White, 1981). The Multidimensional Jealousy Scale developed in 1989 by Pfeiffer and Wong (1989) divide the romantic jealousy into three subtypes: cognitive, emotional, and behavioural. This study focuses primarily on cognitive jealousy for its significance in predicting relational satisfaction over emotional jealousy (Anderson et al., 1995). Chin et al. (2017) found that cognitive jealousy was negatively correlated with individuals' self-esteem. A study on emerging adults found that a high level of cognitive jealousy will lead to lower relationship

satisfaction, lower mindfulness, and more conflict in romantic relationship (De Cristofaro et al., 2023).

According to Nelson and Barry (2005), the ambivalence that emerging adults experience regarding their adulthood distinguishes this stage of development, in which the individuals need to be responsible for their actions, autonomous decision-making, and financial independence from parents. Also, individuals considered emerging adults tend to form romantic relationships (Fincham & Ming, 2011). According to Khurana and Ahuja (2020), individuals in the relationship will form jealousy. Cognitive jealousy has correlated with poor self-esteem, confidence, and trust, among other indicators of negative impressions and illogical attitudes about oneself (Deng et al., 2023).

According to previous research, attachment anxiety and avoidance styles are among the factors contributing to the occurrence of cognitive jealousy within a relationship (Deng et al., 2023; Sullivan, 2021). People with this insecure attachment may worry about abandonment and difficulty trusting others.

2.4 Adult Attachment Style and Cognitive Jealousy

2.4.1 Anxious Attachment Style and Cognitive Jealousy

Individuals with anxious adult attachment styles usually feel insecure in their romantic relationships because of worrying about the availability of their partner (Shaver & Hazan, 1993). Past studies found there is a significant correlation between anxious attachment and cognitive jealousy. Research by Aracı-İyiyaydın et al. (2022) found that, partners with an anxious attachment tend to be overthinking regarding their romantic relationship, and the tendency to overthink often increases feelings of jealousy. Another study focused on the predicting effect of attachment anxiety on jealousy; the result shows that attachment anxiety is positively significant in predicting jealousy (Deng et al., 2023). The researchers stated that, people with anxious attachments are more likely to have higher

emotional responses in their relationships, such as overestimating their emotional experiences and constantly second-guessing their partner (Skowron & Dendy, 2004). So, they are more likely to deal with problems emotionally and tend to have negative experiences in their relationship due to insecure attachment.

Furthermore, according to Morey et al. (2013), the individual with higher anxiety attachment tends to use more social networking sites (SNS). The researcher stated that individuals tend to be more concerned about their partner's availability and faithfulness, which leads them to use more advanced technologies. Anxious attachment also predicts cognitive jealousy in online platforms. A study on university students found that attachment anxiety predicts jealousy (Sullivan, 2021). Participants with lower negative attitudes towards online communication have the stronger predicting effects of attachment anxiety to jealousy compared to those with higher negative attitudes towards online communication. The researcher explained that misunderstanding and apprehension are more concerns by those with attachment anxiety when they are communicating online.

2.4.2 Avoidance Attachment Style and Cognitive Jealousy

Avoidant adult attachment style is usually seen as people not being comfortable with the closeness with their partner and being more driven to avoid emotional and physical closeness in romantic relationships (Shaver & Mikulincer, 2008). According to Barbaro et al. (2016), more frequent mate retention behaviours, such as intrasexual negative inducement and concealment of mate, were reported in females who were high in avoidant attachment. A study conducted in Russia found that avoidant attachment styles involve more cognitive jealousy, which refers to thoughts about a partner's potential unfaithfulness (Chursina, 2023). The researchers highlighted that individuals with avoidant adult attachment styles perform suspicious and emotionally sensitive traits. They concluded that cognitive and behavioural jealousy tendencies are most pronounced in individuals with avoidant and ambivalent

attachment styles.

Attridge (2013) stated that the general level of intimacy and the behavioural dimension of intimacy, specifically referring to the limited recent interaction time with the partner, were linked to cognitive or suspicious jealousy. In the avoidance attachment style, people are less likely to have closeness and behavioural intimacy with their partner, and cognitive jealousy may increase. The researcher also found that the notable outcomes of this study highlight the substantial distinction between emotional/ reactive jealousy, predominantly viewed as positive, and cognitive/ suspicious jealousy, largely considered negative.

According to Arnett et al. (2014), when individual is in the emerging adulthood stages, they have attained physical and sexual maturity, and their educational and vocational combinations and trajectories differ. On the other hand, the individual has undergone many experiences to maturity. Negative memories or experiences may lead to a negative attachment style (McCarthy & Taylor, 1999). Furthermore, through attachment style, poor parenting experiences contribute to the sensation of shame (Sedighimornani et al., 2021).

2.5 Adult Attachment Style and Romantic Relationship Satisfaction

2.5.1 Anxious Attachment and Romantic Relationship Satisfaction

Anxious attachment was conceptualized as one of the other adult attachments (Griffin & Bartholomew, 1994). Anxiously attached individuals are characterized by having an obsession for love, emotional ups and downs, and a desire for union (Mikulincer & Nachshon, 1991). Like avoidant-attached individuals, anxious individuals tend to be less interdependent, maintain a high level of distrust, and significantly have low relationship satisfaction (Simpson, 1990). Insecure individuals tend to have vulnerable self-concepts, which will later promote more and more irrational beliefs. Accumulated irrational beliefs will then become the obstacles that hinder them from achieving relationship goals (Stackert &

Bursik, 2003).

The study by Lascano et al. (2014) clarifies that individuals who were able to manage situations in romantic relationships and had less anxiety when in groups were reported to have more happiness. As stated by Gómez-López et al. (2019), anxiety attachment is suggested to predict a low level of well-being, which will then lead to arguments, violence, and transgressions. It is impossible to overestimate the importance of these interactions in developing their self-identity and offering developmental, psychological, and social roles (Lascano et al., 2014). As a result, knowing the connection between anxiety attachment and romantic relationship satisfaction is critical in understanding the obstacles and triumphs that emerging adults face in this critical element of their lives.

2.5.2 Avoidant Attachment and Romantic Relationship Satisfaction

Avoidant attachment is one of the adult attachments that Griffin and Bartholomew (1994) conceptualized. Mikulincer and Nachshon (1991) claimed that avoidant attachment is significantly correlated with patterns of self-disclosure. Avoidant individuals have a significantly low level of self-disclosure towards romantic partners compared to the level of self-disclosure to their mothers and friends. This scenario may be due to avoidant individuals failing to find romantic partners that satisfy them. According to Simpson (1990), individuals with avoidant attachment reported less independence, low trust, and relationship satisfaction. Avoidant individuals will produce high distrust and show low gratitude toward their partner, decreasing the closeness and commitment to their partner (Vollmann et al., 2019).

Romantic relationships play a significant role in the development of emerging adults. Romantic relationships can contribute to well-being and negative outcomes for emerging adults (Gómez-López et al., 2019). Young adults who engage in romantic relationships are reported to be happier, have higher levels of life satisfaction, are rarely involved in physical or mental illness, reflect higher levels of positive affect, and have higher levels of self-esteem

compared to single individuals (Gómez-López et al., 2019). Also, higher commitment and intimacy in romantic relationships contribute to a higher level of well-being. However, a high level of avoidance is characterized by high self-reliance and discomfort when depending on others or even avoiding becoming emotionally close to others (Hazan & Shaver, 1987). An avoidantly attached individual shows low intimacy and commitment in romantic relationships, related to bad conflict management (Fraley et al., 1998).

2.6 Cognitive Jealousy and Relationship Satisfaction

According to Kılıç and Altınok (2021), cognitive jealousy in a romantic relationship has been proven to correlate with romantic relationships. Reduction in cognitive jealousy could help decrease the conflict between a couple or partner, consequently improving relationship satisfaction (De Cristofaro et al., 2023). Trust is essential for a successful relationship's basis. According to Campbell and Stanton (2019), lower levels of trust show a partner's assurance that he or she would not act in a pro-relationship manner in the future, indirectly indicating that decreasing trust level will impact the relationship satisfaction between the partners.

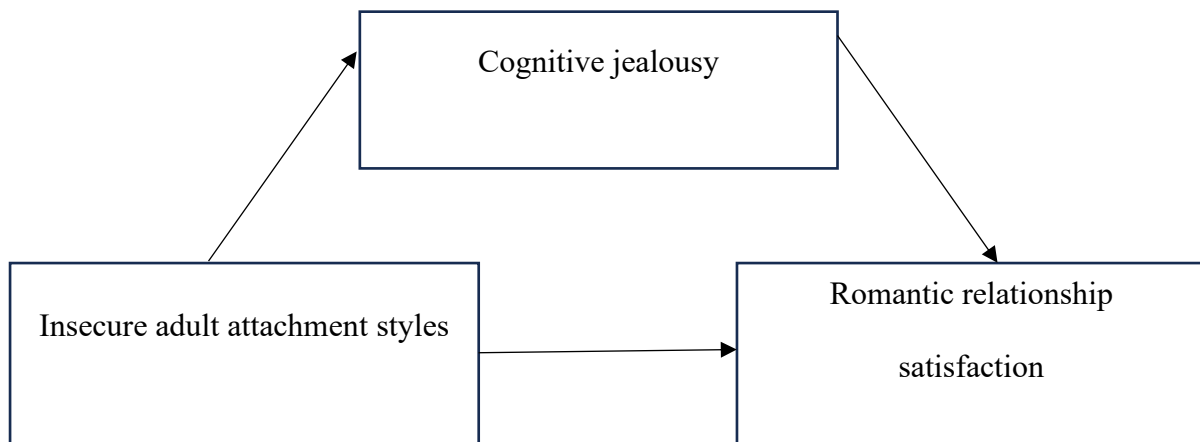
David and Roberts (2021) have stated that the association between partner phubbing and relationship happiness will be mediated by romantic jealousy. According to David and Roberts (2021), cognitive jealousy refers to the frequency with which someone fears or guesses that the other person in the relationship is romantically linked with another person on some level. The increasing cognitive jealousy between partners might cause one partner to feel that the other person receives equal advantages such as financial benefit and emotional attention. Through cognitive, Facebook intrusion induces jealousy and marital satisfaction (Elphinston et al., 2011).

Specifically looking into cognitive jealousy and relationship satisfaction among emerging adults, cognitive jealousy has more impact on relationship satisfaction, such as

depression, divorce, domestic violence, and marital unhappiness, than emotional jealousy among emerging adults (Andersen et al., 1995). Hochberg and Konner (2020) have stated that emerging adulthood is a period of learning about intimacy and mutual support, intensifying pre-existing friendships, family-oriented socialisation, political awareness, developing new relationships, and attaining biosocial skills required for successful mating and reproduction. According to Fincham and Ming (2011), individuals in their late teens and mid-twenties are in a distinct and critical developmental stage in which people obtain interpersonal experience before deciding on a mate. Attridge (2013) has stated that cognitive jealousy correlates with ambiguity towards their relationship, influencing how the partner interprets his or her actions.

2.7 Conceptual Framework

This study investigated the mediating role of cognitive jealousy between the adult attachment style and romantic relationship satisfaction among emerging adults in Malaysia (see Figure 2.7.1). Adult attachment style, cognitive jealousy, and romantic relationship satisfaction are the variables to be examined in this study. The adult attachment style is the independent variable (IV), romantic relationship satisfaction is the dependent variable (DV), and cognitive jealousy is the mediator.

Figure 2.7.1*Conceptual Framework Model*

2.8 Theoretical Framework

This study will investigate cognitive jealousy as the mediator between adult attachment and romantic relationship satisfaction. The two types of insecure attachment styles, anxious attachment and avoidant attachment styles focused on in this study are also the focus of the inventory proposed by Brennan et al. (1998).

Adult attachment is a concept derived from attachment theory. John Bowlby initially introduced attachment theory during the 1960s, and the contributions of Mary Salter Ainsworth aided its evolution. It represents a comprehensive viewpoint, embracing a systemic approach that emphasizes behaviours within specific environments and the recurring nature of communication patterns (Erdman & Caffery, 2013; Kobak & Duemmler, 1994). The attachment theory aims to preserve closeness and nurture connections between primary caregivers and children (Bowlby, 1988). The researchers found that children's future relationships are influenced by their interactions with caregivers during times of need (Shaver et al., 2019). Hazan and Shaver (1987) developed the adult attachment theory. Adult attachment theory extends the principles of attachment theory to comprehend how attachment patterns persist and influence adult romantic relationships while also relating to prior

experiences of love formation, encompassing accounts of romantic love and the various styles inherent in love (Shaver & Hazan, 1988). Adult attachment is the inherent need and how an individual forms a close and sustaining relationship that aims to bring pleasure and gain protection (Sable, 2008).

Past studies found that the adult attachment style based on the attachment theory can be conceptualized into two dimensions: avoidance and anxiety (Brennan et al., 1998; Fraley et al., 2000; Griffin & Bartholomew, 1994). People with attachment-related avoidance will feel discomfort with closeness and prefer self-reliance and emotional distance; people with attachment-related anxiety have an intense worry about the availability and responsiveness of their partner and tend to feel insecure and distressed (Obegi & Berant, 2009). They indicate that individuals with insecure attachment styles tend to experience more romantic jealousy compared to those with secure attachment styles. Besides, the study by Khanchandani and Durham (2009) found that jealousy often stems more from personal feelings of insecurity, self-doubt, and a lack of confidence rather than being solely triggered by the actions of one's partner.

Hence, the framework of this study is structured upon attachment theory, delineating how adult insecure attachments evolve from its concepts. Individuals with insecure attachment tendencies may exhibit higher levels of cognitive jealousy. Moreover, adult insecure attachment styles have been found to correlate with satisfaction levels within romantic relationships. Cognitive jealousy potentially serves as a mediating factor within this framework.

Chapter III

Methodology

3.1 Research Design

In this study, adult attachment was chosen as the independent variable, romantic relationship satisfaction as the dependent variable and cognitive jealousy as the mediator. A quantitative research method will be used while collecting the data. Quantitative methods emphasize generalizability and aim to apply the knowledge gained from the target sample being successfully generalized to the population (Palinkas et al., 2015). A cross-sectional correlation quantitative research design will be used to examine the degree of relationship between adult attachment, cognitive jealousy, and romantic relationship satisfaction (Apuke, 2017). RM 10 Touch'n Go reload pin will be given to 50 random participants who completed the questionnaire as a token of appreciation.

3.2 Research Sample

3.2.1 Sampling Method

Emerging adults in Malaysia aged between 18 and 29 were selected as the target participants for this study (Munsey, 2006). Purposive sampling is categorized as non-probability sampling (Berndt, 2020), also known as judgmental sampling, selective or subjective sampling. Purposive sampling depends on the characteristics required by the researchers to specify the target sample for the study (Sharma, 2017). Purposive sampling is widely used to choose a target sample and gather data based on the experience and understanding of the issue that this study wishes to examine (Palinkas et al., 2015). The explanations above are functions to recruit the target sample for this study, which is Malaysian emerging adults. Besides, the explanation above can be better for the current study's reliability and validity on the collected data and the outcomes. Hence, participants

should fulfil the criteria below to be qualified for this study: (i) one must be Malaysian between the ages of 18 and 29, and (ii) one must be engaging in a romantic relationship with an opposite-sex partner.

3.2.2 Research Location

This study was conducted online using online questionnaire. Qualtrics questionnaire surveys were distributed via social media such as WhatsApp, Instagram, and Facebook at the same time. Spreading the questionnaire through different online platforms and approaching participants physically ease the data-collecting process and reaching out to target participants from different backgrounds to avoid response bias.

3.2.3 Plan to Obtain Ethical Clearance Approval

Before the questionnaire for the pilot study was given out, ethical issues were appropriately addressed when administering this research. A complete set of questionnaires was submitted to the UTAR Scientific and Ethical Review Committee (SERC) for review. The cover page, informed consent, the Experiences in Close Relationship Scale (ECR), the cognitive subscale of the Multiple Jealousy Scale (MJS), and the Relationship Assessment Scale (RAS) were included to be submitted to the SERC before being distributed. Ethical clearance aimed to clarify that the data was ethically approved by letting participants fill out informed consent before participating in the questionnaire. The reference number of the ethical approval letter is U/SERC/78-227/2024 (Refer to Appendix B)

3.2.4 Sample Size

The sample size is calculated using Monte Carlo Power Analysis (Schoemann et al., 2017). The correlation value for each variable was inserted into the calculator following the default system. The calculator showed the sample sizes, upper and lower limits, and statistical power. The sample size with 95% power was selected as the number of participants. Since

the independent variable, adult attachment, is separated into anxious and avoidant attachment, the number of participants has to be obtained twice, and the average number of participants will be divided. The sample size suggested by Monte Carlo Power Analysis was 249 participants at 95% statistical power (refer to Appendix A). Hence, this study collected 610 participants, and 285 were left after the excluded participants did not meet the inclusion criteria or finished the questionnaire.

3.3 Research Instruments

3.3.1 Experiences in Close Relationships Scale (ECR)

ECR consists of a 36-item questionnaire examining two dimensions, anxious and avoidance attachment, developed by Brennan et al. (1998), consisting of 18 items on each subscale. Responses are reflected on a 7-point Likert scale, ranging from 1 (Disagree Strongly) to 7 (Agree Strongly). The two subscales are nearly uncorrelated, indicating that both subscales measure different dimensions of adult attachment. The original Cronbach's alpha for the avoidance subscale is .94, and the anxious subscale is .91, which allocates high reliability of the measure (Brennan et al., 1998). Items 3, 15, 19, 22, 25, 27, 29, 31, 33, and 35 must be reversed-keyed before computing the average score (Brennan et al., 1998). The example item for avoidant attachment is "I prefer not to show others how I feel deep down", and the example of the reverse item in the avoidant subscale is "I am very comfortable being close to other people." The example items for anxious attachment are "I worry about being rejected or abandoned", and the example for a reverse item of anxious subscale is "I do not often worry about being abandoned." Avoidant and anxious attachment scores are calculated by averaging the 18 odd-numbered and 18 even-numbered items, respectively. The higher reported score on the two subscales refers to the greater avoidance attachment or anxious attachment. With the dimensional score, this instrument is suitable for correlation and regression analysis (Mikulincer & Shaver, 2007).

3.3.2 *Multidimensional Jealousy Scale (MJS)-Cognitive Subscale*

Cognitive jealousy will be measured using the cognitive jealousy subscale from the Multidimensional Jealousy Scale (MJS) by Pfeiffer and Wong (1989). Cognitive subscales ranged from 1 (never) to 7 (all the time). As the items in the cognitive component were being reversed in MJS, the scoring for the subscale will be reversed. The example items are “I suspect that X is secretly seeing someone of the opposite sex” and “I am worried that some member of the opposite sex may be chasing after X.” The cognitive subscale consists of 8 items, Cronbach’s alpha is .92. Higher scores in the cognitive subscale represent a higher level of cognitive jealousy.

3.3.3 *Relationship Assessment Scale (RAS)*

The Relationship Assessment Scale (RAS) is an instrument developed to measure satisfaction in a romantic relationship (Hendrick, 1998). RAS is a 7-item scale measuring the relationship satisfaction of individuals who are in intimate relationships. RAS was stated to have a high and good coefficient alpha of .86, which reflects high reliability. The scoring of RAS ranges from 1 (low satisfaction) to 5 (high satisfaction) for the respondents to identify their preferences. Items 4 and 7 in RAS were reversed items. The example items are “How well does your partner meet your needs” and an example of reverse question “How many problems are there in your relationship?” The total score ranges from 7 to 35, and the higher score indicates a higher satisfaction level.

3.4 Research Procedure

A complete questionnaire and informed consent were submitted to the UTAR Scientific and Ethical Review Committee (SERC) for review before being distributed. This study was approved by UTAR Scientific and Ethical Review Committee (SERC) with the reference number U/SERC/78-227/2024 (Refer to Appendix B). The online questionnaire was sent to Malaysians who met the criteria. The qualifications of the participants were (i)

one must be a Malaysian aged between 18 and 29, (ii) one must be engaged in a romantic relationship with an opposite-sex partner. The questionnaires were sent to target participants through different platforms, such as Instagram and WhatsApp. Informed consent was included on the first page of the questionnaire to make sure participants were acknowledged and voluntarily participated in the questionnaire. Informed consent also guarantees that the data of the participants are kept confidential. Participants were directed to the body of the questionnaire after clicking “I acknowledge and would like to continue” to continue with the questionnaire. Basic demographic information, such as nationality, sexual orientation, marital status, age and gender, and ethnicity, together with the responses to Experiences in Close Relationship (ECR), Multiple Jealousy Scale (MJS), and Relationship Assessment Scale (RAS), were collected. Responses that did not meet the inclusion criteria of this study had been filtered out from the total responses. This study took two months, from April 2024 to June 2024, and collected 610 responses, and 283 responses were left after data cleaning. After the data collection, we distributed fifty RM 10 Touch’n Go reload pins to respondents who participated in the lucky draw, fulfilled the inclusion criteria, and completed the questionnaire. The lucky draw session was recorded and the winners were informed through email. The gift, RM 10 Touch’n Go reload pin, was also emailed to the winner.

3.5 Pilot Study

Conducting pilot study aimed to determine whether the proposed method is applicable and how the study result able to apply to the broader population (Leon et al., 2011). It can also be used as data collection instruments, sample recruitment strategies, and other research methods for broader study. Furthermore, a pilot study is also a crucial step in research, acting as a tool to determine the potential problems and deficiencies in the research instruments during the study (Lancaster et al., 2004). It also aids members to familiarize with the research procedures to ease the research process.

A pilot study was conducted before the actual study to analyse and assess the reliability of the instruments that will be used in the actual study. Data of 35 participants from UTAR Faculty of Arts and Social Science Year 3 students were collected for the pilot study, and the results were used to examine the reliability test. The reliability of the Experiences in Close Relationships Scale (ECR) - Anxious subscale shows a Cronbach's alpha coefficient ($\alpha = .85$), and the ECR - Avoidant subscale shows a Cronbach's alpha coefficient ($\alpha = .86$), which both considered high and acceptable reliability. Multidimensional Jealousy Scale (MJS) - Cognitive Subscale showed a Cronbach's alpha coefficient ($\alpha = .91$), which was considered high and acceptable. The Relationship Assessment Scale (RAS) also showed an acceptable Cronbach's alpha coefficient ($\alpha = .69$). All in all, the reliability of the three instruments falls within the acceptable range of reliability, which allows this study to proceed to the actual study with the instruments chosen (Refer to Appendix C1- C4).

3.6 Data Analysis

The data was analysed using IBM Statistical Package for the Social Science (SPSS) Statistics software. This study aimed to explore the mediating effect of cognitive jealousy between insecure adult attachment styles and romantic relationship satisfaction. The data was analysed to investigate the hypotheses using PROCESS macro by Hayes (2022) in SPSS. Firstly, the Pearson Correlation was used to examine the correlation of the variables. After confirming the correlation between the variables, PROCESS macro was used to examine whether adult attachment (anxious and avoidant) and cognitive jealousy can predict satisfaction with romantic relationships. Last, the PROCESS macro examined the mediating effect of cognitive jealousy between adult attachment and romantic relationship satisfaction.

The collected data from the actual study was used to examine the reliability of all three instruments. Table 1 shows all the three instruments obtained good and acceptable reliability. The ECR – anxious subscale showed Cronbach's alpha coefficient of ($\alpha = .89$), the

ECR – avoidant subscale showed Cronbach’s alpha coefficient of ($\alpha = .76$), the MJS - cognitive subscale showed Cronbach’s alpha coefficient ($\alpha = .91$) and RAS showed Cronbach’s alpha coefficient of ($\alpha = .80$). (Refer to Appendix D1- D4)

Table 1

Cronbach's Alpha of Instruments

Instrument	Number of items	Pilot study	Actual study
ECR_Anxious	18	0.847	0.889
ECR_Avoidant	18	0.855	0.764
MJS_Cognitive	8	0.909	0.911
RAS	7	0.694	0.796

Note. ECR= Experiences in Close Relationships Scale, MJS= Multidimensional Jealousy Scale (Cognitive subscale), RAS= Relationship Assessment Scale

Chapter IV

Result

4.1 Descriptive Statistics

During the data collection period, a total of 610 data were collected. 327 data were excluded due to incomplete responses or not fulfilling the participation criteria, such as disagreeing with the informed consent, not emerging adult, not being in a romantic relationship with an opposite partner, and not a Malaysian. After data cleaning, only 283 responses fulfilled all the participation criteria and completed the questionnaire (Refer to Appendix E). Table 2 presents the descriptive statistics of the participants and variables. All the respondents were Malaysian and aged between 18 and 29 ($Mean = 22.63$, $SD = 2.13$). There were 182 females and 101 males participating in the study, of which the majority of them were Chinese 96.4% ($n = 273$), 3.2% ($n = 9$) were Malay, and 0.4% ($n = 1$) was Indian.

The statistics of the variables are also presented in Table 2. The anxious attachment ($Mean = 4.12$, $SD = 1.03$), avoidant attachment ($Mean = 3.56$, $SD = .73$), cognitive jealousy ($Mean = 20.65$, $SD = 10.35$), and relationship satisfaction ($Mean = 26.99$, $SD = 4.73$) among participants.

Table 2*Descriptive Statistics of Participants (N=283)*

Variables	<i>n</i>	%	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Age			22.63	2.13	18	29
	18	2	0.7			
	19	10	3.5			
	20	27	9.5			
	21	40	14.1			
	22	70	24.7			
	23	69	24.4			
	24	21	7.4			
	25	13	4.6			
	26	12	4.2			
	27	9	3.2			
	28	4	1.4			
	29	6	2.1			
Gender						
	Male	101	35.7			
	Female	182	64.3			
Ethnicity						
	Chinese	272	96.4			
	Malay	9	3.2			
	Indian	1	0.4			
Anxious			4.12	1.03	1.44	5.67
Avoidant			3.56	0.73	1.33	6.67
Jealousy			20.65	10.35	8	56
Satisfaction			26.99	4.73	12	35

Note. *N*= Number, %= Percentage, *M*= Mean, *SD*= Standard Deviation, *Min*= Minimum,

Max= Maximum, Anxious= Anxious Attachment, Avoidant= Avoidant attachment, Jealousy=

Cognitive jealousy, Satisfaction= Romantic relationship satisfaction

4.2 Normality Assumptions

The normality test was conducted before the inferential data analysis. There were no violations of normality in the histogram, and most of the data was plotted on the diagonal line in the Q-Q plot (Refer to Appendix F). Table 3 presents the skewness and kurtosis of the four variables. According to George and Mallery (2010), skewness and kurtosis fall between ± 2 and were considered normal. All the values fell between ± 2 . For Kolmogorov-Smirnov's normality test, the anxious attachment $D(283) = .05, p > .05$ was not significant, indicating that the variable was normally distributed. The avoidant attachment $D(283) = .10, p < .001$, cognitive jealousy $D(283) = .13, p < .001$, and romantic relationship satisfaction $D(283) = .09, p < .001$ did not meet the assumption of Kolmogorov-Smirnov's normality test, indicating that these variables were not normally distributed (Refer to Appendix G).

Even though three of the variables failed to meet the assumption of Kolmogorov-Smirnov's normality test, four out of five assumptions of the normality test were met. Therefore, it was concluded that the variables were normally distributed.

Table 3

Skewness, Kurtosis, and KS test

Variables	Skewness	Kurtosis	Kolmogorov-Smirnov			Shapiro-Wilk		
			Statistic	df	Sig.	Statistic	df	Sig.
Anxious Attachment	.02	.09	.05	283	.200*	.98	283	.201*
Avoidant Attachment	-.43	-.10	.10	283	<.001	.99	283	<.001
Cognitive Jealousy	.62	-.37	.13	283	<.001	.98	283	<.001
Relationship Satisfaction	-.50	-.07	.09	283	<.001	.93	283	<.001

Note. * This is a lower bound of the true significance

4.3 Inferential statistics

Pearson correlation analysis was conducted prior to the PROCESS regression analysis and mediation test to confirm the mediating effect of cognitive jealousy between the insecure attachment styles and romantic relationship satisfaction (Refer to Appendix H).

Table 4 presents the results of the Pearson Correlation. The results show that the correlation between all variables was statistically significant. Anxious attachment style $r(283) = -.20, p < .05$ and avoidant attachment style $r(283) = -.27, p < .001$, were statistically negatively correlated with romantic relationship satisfaction. Positive relationships were shown between both anxious attachment $r(283) = .20, p < .05$ and avoidant attachment $r(283) = .25, p < .001$ and the cognitive jealousy. Lastly, a significant negative relationship between cognitive jealousy and romantic relationship satisfaction $r(283) = -.44, p < .001$.

Table 4

Correlations of the Variables

Variables	1	2	3	4
1. Anxious Attachment	-	0.22**	0.20*	-.20*
2. Avoidant Attachment	-	-	0.25**	-0.27**
3. Cognitive Jealousy	-	-	-	-0.44**
4. Relationship Satisfaction	-	-	-	-

Note. * $p < .05$, ** $p < .001$

4.4 PROCESS Analysis

PROCESS analysis was conducted to confirm the predictive effect of the independent variables on the mediator, the predictive effect of the independent variables and the mediator on the dependent variable, and the mediating effect of the mediator between the independent and dependent variables. Before conducting the analysis, the independence of errors was tested by calculating the Durbin-Watson value, and multicollinearity was tested by analyzing

the variance inflation factor (VIF) and the tolerance value. The residuals are uncorrelated if the value of Durbin- Watson is close to 2. The Durbin- Watson value is 1.83, which falls between 1 and 3 and is close to 2. Indicated multicollinearity will be regarded if the tolerance value is close to 0 and the VIF is greater than 10. The multicollinearity assumptions were met as the VIF values were not greater than 10, and the tolerance values were not close to 0 (Refer to Appendix I). The model was statistically significant, $F(3, 279) = 27, p < .001$ and accounted for 21.7% of the variance.

Outliers were detected by casewise diagnosis, where the residuals of the detected cases were out of 2 standard deviations. A total of 11 cases were detected. See Table 5. The critical value of Mahalanobis Distance for more than 100 cases is greater than 15. The value of Cook's Distance larger than 1 indicates a potential outlier (Cook & Weisberg, 1982). The calculated Leverage's value is 0.014, and cases with more than 2 times this value were considered outliers (Hoaglin & Welsh, 1978). There is no violation in Mahalanobis Distance, Cook's Distance, and Centered Leverage value. Therefore, it was concluded that there were no influential cases, and the outliers did not need to be deleted (Refer to Appendix J).

Table 5*Residual Statistics of Outliers*

Case Number	Mahalanobis	Cook's	Leverage
4	2.15	.02	.01
5	2.08	.03	.01
10	3.22	.04	.01
62	3.06	.03	.01
68	1.41	.01	.01
72	3.70	.03	.01
118	6.90	.05	.02
174	1.47	.01	.01
204	2.35	.02	.01
219	2.24	.03	.01
245	5.27	.03	.01

*4.4.1 Hypothesis testing: Anxious Attachment, Cognitive Jealousy, and Romantic**Relationship Satisfaction*

A mediation analysis was conducted to examine whether cognitive jealousy mediates the relationship between anxiety attachment and romantic relationship satisfaction. The analysis used the PROCESS Model 4 with 5000 bootstrap samples. This analysis was also used to test Hypotheses 1, 3, 5, and 6.

Based on the result, anxious attachment negatively predicts romantic relationship satisfaction $B = -.92, p < .05$. Therefore, Hypothesis 1, anxious attachment negatively predicts romantic relationship satisfaction among emerging adults in Malaysia, was supported.

Hypothesis 3, anxious attachment positively predicts cognitive jealousy among emerging adults in Malaysia, was supported by the regression of anxious attachment to cognitive jealousy, which was also significant $B = 2.01, p < .05$.

The mediation process showed that cognitive jealousy was significant when the anxious attachment was being controlled $B = -.19, p < .001$. This result proved that

Hypothesis 5, cognitive jealousy negatively predicts romantic relationship satisfaction among emerging adults in Malaysia, was supported.

While controlling the cognitive jealousy, the anxious attachment also significant $B = -.54, p < .05$. The direct effect of anxious attachment on romantic relationship satisfaction $B = -.54, p < .05, 95\% \text{ CI } [-1.03, -.04]$ was significant, while the indirect effect when cognitive jealousy was also presenting significant $B = -.38, SE = .13, 95\% \text{ CI } [-.65, -.13]$. See Figure 4.4.1.1. Hence, Hypothesis 6, there is a significant effect of cognitive jealousy on the relationship between anxious attachment and romantic relationship satisfaction among emerging adults in Malaysia, was supported.

The findings from the PROCESS mediation analysis suggested the mediating effect was significant as there was a reduction in effect while cognitive jealousy was present in the relationship between anxious attachment and romantic relationship satisfaction. In conclusion, cognitive jealousy partially mediated the relationship between anxious attachment and romantic relationship satisfaction with both direct and indirect effects that were significant (Refer to Appendix K).

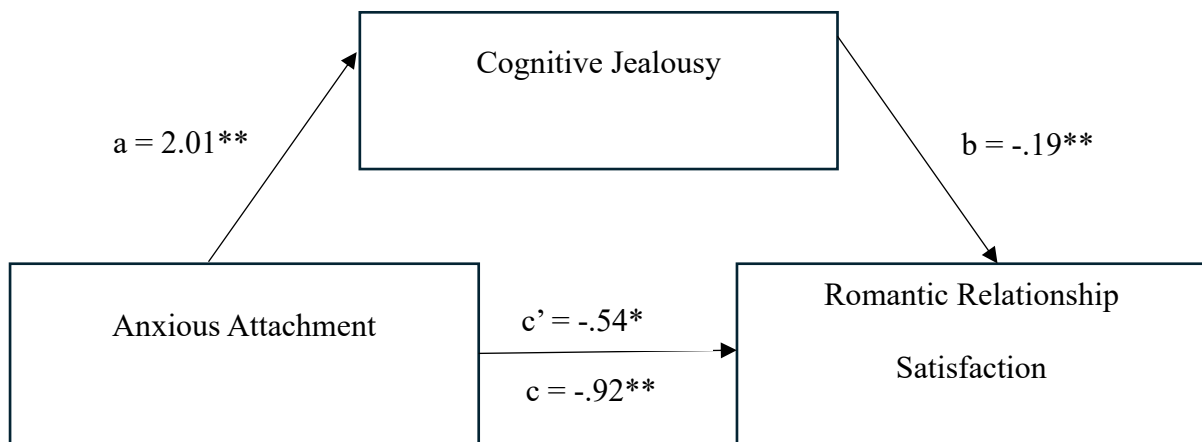
Figure 4.4.1.1*Regression Coefficients of Variables*

Figure 4.4.1.1. Standardized regression coefficients for the relationship between anxious attachment and romantic relationship satisfaction as mediated by cognitive jealousy. The regression coefficient of total effect between anxious attachment and romantic relationship satisfaction. *Note.* * $p < .05$, ** $p < .001$.

4.4.2 Hypothesis testing: Avoidant Attachment, Cognitive Jealousy, and Romantic Relationship Satisfaction

A mediation analysis was conducted to examine whether cognitive jealousy mediates the relationship between avoidant attachment and romantic relationship satisfaction. The analysis used the PROCESS Model 4 with 5000 bootstrap samples and was also used to test Hypotheses 2, 4, and 7.

Based on the result, avoidant attachment is negatively predicting romantic relationship satisfaction $B = -1.74, p < .001$. Which the Hypothesis 2, avoidance attachment negatively predicts romantic relationship satisfaction among emerging adults in Malaysia, was supported.

Hypothesis 4, avoidant attachment positively predicts cognitive jealousy among emerging adults in Malaysia, was supported by the regression of avoidant attachment to

cognitive jealousy, which was also significant $B = 3.57, p < .001$.

The mediation process showed that cognitive jealousy was significant when the avoidant attachment was being controlled $B = -.18, p < .001$; while controlling the cognitive jealousy, the avoidant attachment was also significant $B = -1.1, p < .05$. The direct effect of avoidant attachment on romantic relationship satisfaction $B = -1.1, p < .05, 95\% \text{ CI } [-1.79, -.40]$ was significant, while the indirect effect when cognitive jealousy was presenting also significant $B = -.64, SE = .17, 95\% \text{ CI } [-.99, -.34]$. See Figure 4.4.2.1. Hence, the result supported Hypothesis 7: There is a significant mediating effect of cognitive jealousy on the relationship between avoidance attachment and romantic relationship satisfaction among emerging adults in Malaysia.

The mediation test result was significant, as the effect of avoidant attachment on romantic relationship satisfaction was reduced while cognitive jealousy was present in the model. The findings suggested that cognitive jealousy was partially mediating the relationship between avoidant attachment and romantic relationship satisfaction, as both the direct and indirect effects were significant (Refer to Appendix L).

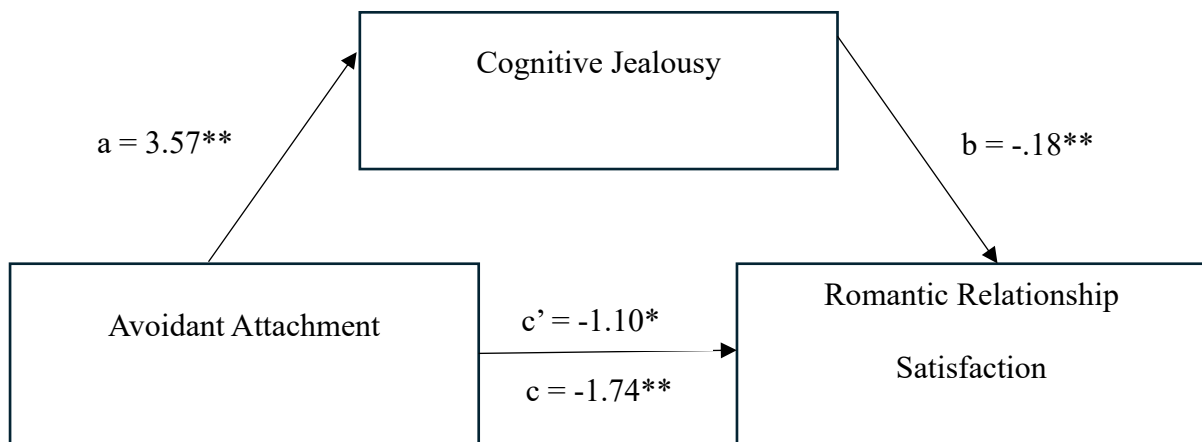
Figure 4.4.2.1*Regression Coefficients of Variables*

Figure 4.4.1.1. Standardized regression coefficients for the relationship between avoidant attachment and romantic relationship satisfaction as mediated by cognitive jealousy. The regression coefficient of total effect between avoidant attachment and romantic relationship satisfaction. *Note.* * $p < .05$, ** $p < .001$.

4.5 Conclusion

All the results, including the regression analysis and mediating test tested by PROCESS, were significant. Therefore, all the hypotheses were supported.

Chapter V

Discussion

5.1 Introduction

This study aims to investigate the relationship between adult attachment and romantic relationship satisfaction, with cognitive jealousy as the mediator among emerging adults in Malaysia. This chapter will explore the findings about the relationship between the variables and discuss the theoretical and practical implications. Furthermore, limitations and recommendations of this study will be addressed.

Hypothesis 1: Anxious attachment negatively predicts romantic relationship satisfaction among emerging adults in Malaysia

The findings of this study have proved that anxious attachment significantly predicts romantic relationship satisfaction among emerging adults in Malaysia. This finding is consistent with the findings by Towler and Stuhlmacher (2013), where anxious attachment has a negative relationship towards romantic relationship satisfaction. Emerging adults tend to develop or be involved in romantic relationships because a romantic partner has become an important source of emotional support (Suh & Fabricius, 2019; Shulman & Connolly, 2013). Therefore, emerging adults with higher levels of anxious attachment may tend to rely on their partner in order to satisfy their emotional needs (Simpson & Rholes, 2017). Consequently, the emerging adult with a higher anxious attachment may constantly seek reassurance from their partner to reduce the feeling of abandonment (Evraire et al., 2014). However, this may lead that particular emerging adult to experience negative thoughts, such as constant worry that their partner is going to leave them, which may lead to lower relationship satisfaction.

Besides, researchers Sumer and Yetkili (2018) stated that attachment anxiety is more prevalent in collectivist cultures. According to Sumari et al. (2019), Malaysia is a country that practices collectivist culture. Emerging adults in collectivist societies tend to be more

altruistic towards their partner, which can lead to forming a stronger relationship with the partner (Sorokowski et al., 2023). However, an anxious partner may experience a decline in relationship satisfaction due to dissonance between expectation on their collectivist partner's support and the genuine commitment they received. A Malaysian emerging adult may expect more support from the partner, while it can also lead to heightened anxiety when the partner's help or attention is unavailable. This excessive dependence can cause them to become anxious in the relationship and constantly worry that their partner wouldn't care on them, thus reported a lower satisfaction on their romantic relationship quality.

Hypothesis 2: Avoidance attachment negatively predicts romantic relationship satisfaction among emerging adults in Malaysia

Based on the findings of this study, hypothesis 2 has been supported as the avoidance of attachment negatively predicts romantic relationship satisfaction among emerging adults in Malaysia. This study was consistent with the past study of a negative relationship between avoidance attachment and romantic relationship satisfaction (Vollman et al., 2019; Candel & Turliuc, 2019). According to Pistle et al. (1995), individuals with a higher level of avoidance attachment tend to reduce their investment in their relationship. For example, an individual with avoidance attachment tends to be independent without relying on their partner, with reduced emotional support towards their partner. More specifically, the researchers Read et al. (2018) have stated that individuals with high avoidance attachment will perceive their partner as untrustworthy or unreliable. They will believe their partner could not assist them when they were most in need. As a result, the individual will decide to rely on themselves instead of others, resulting in a decrease in their relationship satisfaction. This study also found that Malaysian emerging adults with high levels of avoidance attachment are less likely to rely on their partner and avoid engaging in a close relationship, leading to decreased romantic relationship satisfaction.

Furthermore, Mohammadi et al. (2016) stated that individuals with a higher level of avoidance attachment are usually characterised by a lack of self-confidence in their ability of dealing stressful event in the future. The individual may tend to feel inferior to themselves compared to others and have low expectations of their relationship's future. Not only that, individual with avoidance attachment also tend to have lower engagement interaction with their partner, which will induce greater distress in the relationship (Barry & Lawrence, 2013). As a result, the individual with a higher level of avoidant attachment is less likely satisfied with their romantic relationship.

Hypothesis 3: Anxious attachment positively predicts cognitive jealousy among emerging adults in Malaysia

In addition, the third hypothesis also supported by the result of this study, which is that anxious attachment positively predicts cognitive jealousy among emerging adults in Malaysia. This finding was consistent with past studies (Rodriguez et al., 2015; Chursina, 2023). According to Lee and Hankin (2009), individuals with a high level of anxious attachment are associated with a lower level of self-esteem and tend to question their attractiveness and overall value as partners frequently. They may wonder why his or her partner chose them instead of someone else who is more attractive or deserving and will constantly worry that their partner may leave them for someone better (Guerrero, 1998; Rodriguez et al., 2015). Individuals with anxious attachment are characterised by an intense need for intimacy with others (Gasiorowska et al., 2022; Deng et al., 2023). Therefore, they are afraid of being abandoned by their partners (Evraire et al., 2022) and be suspicious in a relationship (Rydell & Bringle, 2007). Anxiously attached individuals seek an extremely high sense of security from close engagement with their partners, such as needing a lot of reassurance from their partner or even forcing their partner to show more feelings towards themselves and so on (Arriaga et al., 2017). Anxious partners who constantly feel insecure

and worry that their partner is losing interest in them are more likely to suspect the involvement of third party in their romantic relationship (Freeman & Bentall, 2017). This research found that an anxious emerging adult who desires to be very close with partners has a higher level of cognitive jealousy while forming a romantic relationship.

Hypothesis 4: Avoidance attachment positively predicts cognitive jealousy among emerging adults in Malaysia.

Based on Hypothesis 4, avoidant attachment significantly predicts cognitive jealousy among emerging adults in Malaysia, as proved by this study. The findings corresponded to the past studies that found that the emerging adult with high level of avoidance attachment tends to develop with cognitive jealousy (Chursina, 2023; Güçlü et al., 2017). According to Gruda and Kafetsios (2022), individuals with avoidant attachment are characterised by autonomy, self-reliance, and poor tolerance for interpersonal closeness and dependency due to their desire to avoid experiencing pain or distress due to not having a partner they can consistently rely on (Vollmann et al., 2019). Even though individuals with avoidant attachment tend to express self-reliance and discomfort with intimacy and dependency, they still have an underlying desire to preserve their partner's interest and commitment (Bartholomew, 1990). Therefore, the individual with avoidance attachment who has started a relationship with others tends to be more emotionally sensitive towards their partner's action such as how often they communicate or spend time together. The individual with high avoidance attachment may start concerning about their partner's potential infidelity (Chursina, 2023). Hence, when these individuals sense that their partner is becoming emotionally or physically involved with someone else, they may start worrying about whether their partner might leave them.

According to Inkaya and Güngör (2023), an emerging adult with avoidance attachments who does not have a high level of intimacy with their partner generally uses less

constructive communication. Lack of communication between the partners will lead to jealousy due to many unresolved doubts or assumptions regarding their partners (Simion, 2024). So, the individual will quickly develop irrational thoughts such as worrying their partner has invested their emotions in others. According to Ahmad et al. (2018), Malaysia is a collectivistic country which is more emphasize on harmony. The individual who lives in the collectivist culture to have the habit of not expressing their negative emotions to their partner in order to maintain the harmony of their romantic relationship (Oyserman et al., 2002), the conflict may be worse for the emerging adults with a higher level of avoidance attachment. When problems arise, they may choose to remain silence rather than address the issues directly. As the time passes, the individual will suspect their partner and start thinking that their partner is no longer interested towards themselves anymore.

H5: Cognitive jealousy negatively predicts romantic relationship satisfaction among emerging adults in Malaysia

The result of this study supported hypothesis 5, which posited that cognitive jealousy negatively predicts romantic relationship satisfaction. Emerging adults with higher cognitive jealousy will lead to lower satisfaction in their romantic relationships. Our result was supported by past research that cognitive jealousy predicts relationship satisfaction (Dandurand & Lafontaine, 2014; David & Roberts, 2021). Cognitive jealousy is an individual's thoughts awakened by a threat that may present suspicion in a partner's loyalty, which plays a crucial role in a romantic relationship. People with high cognitive jealousy may heighten the chances of engaging in cyber-abusive behaviours towards their dating partner to seek closeness (Toplu-Demirtaş et al., 2022). The researcher stated that people with higher jealousy feel more insecure in maintaining a romantic relationship. To alleviate their insecurity, a jealousy partner may resort to tactics like sending provocative messages to provoke anger or jealousy in his or her partner (Muscanell & Guadagno, 2015). This

behaviour, fuelled by mistrust and doubt, showed a vicious cycle of escalating jealousy and insecurity. According to Batik (2023), jealousy is not a motivating factor for striving for superiority, but it may be linked with quarrelsomeness and thus a negative evaluation on the romantic relationship satisfaction. The result of the study found that jealousy is associated with the development of partner violence both psychologically and physically including control, abuse, and violence (Batik, 2023). Furthermore, a study focused on romantic relationship satisfaction among emerging adults found that cognitive jealousy heightens the stress levels in romantic relationships (Retossa et al., 2024). Therefore, the partner who showed cognitive jealousy like constantly suspect the partner's honesty and feeling mistrust led to a lower intimate relationship satisfaction.

H6: There is a significant mediating effect of cognitive jealousy on the relationship between anxious attachment and romantic relationship satisfaction among emerging adults in Malaysia

The result of this study supported hypothesis 6. As hypothesised, there is a significant mediating effect of cognitive jealousy on the relationship between anxious attachment and romantic relationship satisfaction among emerging adults in Malaysia. Results of this study showed that anxious attachment positively predicts cognitive jealousy and cognitive jealousy negatively predicts romantic relationship satisfaction, indicating that anxious individuals will develop cognitive jealousy, which will then lead to a lower level of relationship satisfaction. The anxious attachment was a significant predictor of cognitive jealousy as the prerequisite for developing cognitive jealousy towards a partner, which further supports the above statement (Chursina,2023; Deng et al.,2023). A recent study by Buunk and Dijkstra (2021) claimed that uncertainty over an individual's partner fidelity was closely related to anxious attachment and cognitive jealousy, the results stated that cognitive jealousy is strongly associated with negative romantic relationship outcomes, which is significant to a high level

of uncertainty on their partner's fidelity and low level of relationship satisfaction. Deng et al. (2023) claimed that jealousy and anxiously attached individuals sharing similar working models and are often associated with low self-esteem, low self-confidence, and untrust to partners. Aracı-İyiyaydın et al. (2022) mentioned that anxious individuals are easily to be triggered by potential relational threats and then induce feelings of jealousy in their romantic relationship. Due to the excessive worry and feeling of jealousy, individuals frequently seek for clarification potentially cause their partner to be mentally exhausted, directly affected their relationship satisfaction.

Furthermore, anxious attached individuals with excessive worry and fear in maintaining romantic relationship led them to have jealousy-inducing situations that trigger their anger, fear and sadness towards their partner, which will also potentially affect their relationship satisfaction (Sharpsteen & Kirkpatrick, 1997; Tani & Ponti, 2016). Adding on, anxious-attached individuals may also induce a feeling of guilt in their partner responding to negative event throughout the relationship as they might blame themselves to avoid their partner to leave them (Overall & Simpson, 2015). Current study corresponds to past studies showing that cognitive jealousy mediated the relationship between anxious attachment and relationship satisfaction as anxious-attached individuals reported to have higher jealousy leads to lower relationship esteem (Radecki-Bush et al., 1993; Knobloch et al., 2001). Besides, Radecki – Bush et al. (1993) stated that anxious attached individuals perceived threat more severe than secure attached individuals. As anxious attached individuals magnify the perceived threat, it then leads to the develop of more severe of suspicious concerning towards their partner's infidelity and negative emotions that fulfilled the prerequisite of the development of cognitive jealousy. With suspicious thinking and negative emotions further negatively affect the relationship between he or she with their partner.

The results of this are further supported by Kabiri (2017), the result of the study

showed cognitive jealousy in romantic jealousy had increased the negative relationship between anxious attachment and marital quality. In the study, anxious attached individuals were said to be having over excessive fear of being abandon by their partner, which makes them to be overreacting to the non-threatening threats released by other people around their partner and seeking confirmation from their partner to make sure their partner will not leave them. Therefore, this result of the current study also revealed that the Malaysian emerging adults who are anxious in a relationship are more likely to report a lower level of relationship satisfaction through a formation of cognitive jealousy and doubt on their partner.

H7: There is a significant mediating effect of cognitive jealousy on the relationship between avoidance attachment and romantic relationship satisfaction among emerging adults in Malaysia.

Hypothesis 7 was supported as per result of this study. There is a significant mediating effect of cognitive jealousy on the relationship between avoidance attachment and romantic relationship satisfaction among emerging adults in Malaysia. As a supporting reference, Guzmán-González et al. (2020) stated that limited intention to form closeness and intimacy among avoidantly attached individuals towards their partner would potentially affect their relationship satisfaction due to the unsatisfied intimacy needs for both individuals in the relationship. Avoidant-attached individuals were said to be emotionally unstable and suspicious that they would have intrusive cognitive jealousy thoughts related to different forms of potential infidelity to their romantic partners (Chursina, 2023). Besides, avoidantly attached individuals tend to have negative self-images and significant negative images of their partner that bring "double doubt" on their own value in the relationship and their partner's positive qualities, such as questioning regarding "I don't think my partner will be my side when I need him/her." (Chursina, 2023). Study by Güçlü et al. (2017) mentioned avoidant attached individuals are characterized with fearful in developing intimate

relationship, having emotional ups and downs in intimate relationship and can be said to involve in experiencing jealousy. Avoidant individuals who showed detached and distrust towards their partner are more likely to experiencing more jealousy as they doubt their partner availability and infidelity due to they do not believe in their partner thus develop the cognitive jealousy and be suspicious, such as the items in the Multiple Jealousy Scale – Cognitive Jealousy subscale “I think that X is secretly developing an intimate relationship with someone of the opposite sex (Rodriguez et al., 2015).

Furthermore, avoidant attached individuals showed a significantly low trust towards their partner due to their deactivating strategies to protect themselves instead of choosing to trust their partners, such as cognitive, emotionally and physical distancing themselves or suppressing their emotions from their romantic partner as they are not trusting them. They also tend to have inconsistent self-views and negative views of their partners, which can negatively affect their relationship and deteriorate the level of trust in the partner's experiences (Cassidy & Kobak, 1988; Fitzpatrick & Lafontaine, 2017; Simpson, 2007).

A study by Kabiri (2017) showed that there was a significant mediation effect of cognitive jealousy between avoidant attachment and marital quality. In the study, Kabiri claimed that avoidant attached individuals feel discomfort to enclose themselves and their emotions to their partner. This restricted to the communication between avoidant attached individuals and their partner due to distrust. Hence, developing cognitive jealousy that worry about their partner exhibit intimate relationship with someone opposite sex. The result showed avoidant attachment negatively correlated with relationship satisfaction, and there was a significant increase in the mediation effect when romantic jealousy took place. It can be interpreted that cognitive jealousy in romantic jealousy does increase the negative relationship between avoidant attachment and romantic relationship satisfaction as a mediator. La Guardia et al. (2000) explained this situation as individuals with avoidant

attachment style is afraid of being abandon. Guerero et al. (1995) further connect jealousy to avoidant attachment calming that jealousy is rooted to the fear of abandonment and losing Hence, the results of this study were supported by the studies above, showing that detached and avoiding a close relationship characteristic in avoidant attached individual leads to the development of cognitive jealousy as they do not express themselves well and, becoming suspicious of their partner, which then further negatively affects their relationship satisfaction.

5.2 Implication of study

Romantic relationship satisfaction plays a crucial role in a romantic relationship, especially in the decision to marry and childbearing (Beaujot & Tong, 1985). This study was conducted under the adult attachment theory, developed by Hazan and Shaver (1987), as a framework to study the effects of insecure adult attachment styles and cognitive jealousy on romantic relationship satisfaction. The result showed that anxious attachment style and avoidance attachment style are both a significant positive predictor of cognitive jealousy and negative predictors of relationship satisfaction. The results of this study, which focused on emerging adults in Malaysia, were supported by the concept of adult attachment theory, which is commonly believed. Furthermore, this study also found that cognitive jealousy has a mediating effect between insecure adult attachment styles and relationship satisfaction. This insight enhances the comprehension of how anxious and avoidant attachment styles diminish relationship satisfaction. It also highlights the significance of accounting for cognitive jealousy, which serves as a negative predictor of relationship satisfaction and functions as a mediator in this model. Thus, this study paves the way for future researchers to explore the mechanisms of insecure adult attachment styles and the development of cognitive jealousy to investigate their long-term effects on relationship satisfaction and the psychological conditions of emerging adults.

The fertility rate in Malaysia has decreased, the percentage of the population below 14 years old in Malaysia has decreased over the years (Nor & Ghazali, 2021), and the divorce rate has increased from the year 2021 to the year 2022 (Department of Statistics Malaysia, 2023). Solomon and Jackson (2014) claimed that one of the reasons for the above situations was low relationship satisfaction. More research is needed on emerging adults, as past studies focus more on married couples between the ages of 35 and 42. Knowing the factors that contribute to lower romantic relationship satisfaction will indirectly aid the couple within emerging adults in learning and developing a higher intimacy level that will contribute to higher marital satisfaction as time passes.

This study also provides a framework for emerging adults to understand better and higher their awareness to manage their relationship dynamics through managing their attachment styles to secure style. Insecure attachment styles showed a negative effect on relationship satisfaction, and it partially affected relationship satisfaction through higher cognitive jealousy. The findings will also increase the awareness of the people who have insecure attachment styles currently suffering in their intimate relationships to seek help from professionals. It serves as a foundation for developing educational programs aimed at couples, particularly emerging adults. The programs emphasize the advantages of secure attachment styles as well as the potential risks of insecure attachment styles, such as romantic jealousy. Additionally, professionals can design strategies to manage negative expressions of jealousy while preserving the type of jealousy that may safeguard or benefit the relationship, such as reactive jealousy (Buunk & Dijkstra, 2021). These programs could also be valuable in Malaysia by aiding emerging adults in recognizing the significance of adult attachment, which can be helpful in developing and strengthening their romantic relationships and supporting progression to the next stage of their relationship.

Furthermore, this study fills a gap in the literature by providing insights into the

dynamics of romantic relationships among emerging adults in Malaysia. It emphasizes the impact of insecure attachment styles on intimate relationships within this demographic. The study also serves as a valuable resource for future research and educational institutions focusing on adult attachment and cognitive jealousy. Based on these findings, government bodies and counselling centres can develop targeted programs and interventions to cope with the negative outcomes of insecure adult attachment styles, such as romantic jealousy and stress in emerging adults' intimate relationships, to enhance romantic relationship satisfaction.

5.3 Limitations and Recommendations

This study provides valuable insights, such as avoiding attachment negatively predicts romantic relationship satisfaction and anxious attachment has an inverse relationship with romantic relationship satisfaction and others. However, this research still has some limitations. The first limitation is that the questionnaire needs to be shorter. According to Galesic and Bosnjak (2009), the length of the questionnaire has an inverse relationship with the completion of the questionnaire. In this study, the questionnaire distributed to the participants contained over 50 questions or items, which may lead to a lower completion rate of the questionnaire. In other words, a lengthy questionnaire decreases the willingness of the respondents to complete it. The respondents may become fatigued and bored with the questionnaire, causing them to quit filling out the questionnaire and directly affect the response rate. Not only that, respondents who feel bored but continue to fill out the questionnaire may give their responses without reading and understanding the questions correctly. Simultaneously, the quality of their responses could also deteriorate. As a prevention step, the researchers could have utilised shorter versions of the questionnaires in printed form for respondents to fill out. The questionnaire should be limited to at most 30 questions or items in order to prevent missing data or increases in response rate (Sharma,

2022).

Another limitation of this study is the need for more diversity among the respondents. In this study, out of the total 283 participants, 96.4% of the respondents were Chinese, which indicates that our participants come from similar ethnic backgrounds. The homogeneous sample may lead to a decreased generalizability of the results (Jager et al., 2017), which may lead to our study's results not applying to a more diverse population. According to Koh and Harris (2020), Malaysia is a multi-ethnic country with a population divided into various ethnic groups, such as Chinese, Malay, and Indian. Due to the different groups of population, it leads to the development of their own culture. Therefore, it is recommended that future studies should include more other populations, such as Malay and Indian respondents, in order to increase the generalizability of the sample. The researcher could collaborate with community organisations such as different religious groups or cultural associations. Collaborating with these organisations allows the researchers to access the possible participants who would otherwise be difficult to reach.

Last but not least, another limitation is that this study was conducted in cross-sectional design. Cross-sectional was chosen in this study because it is time-saving and inexpensive to conduct, and the data on all the variables in the study were collected at one time. For example, the questionnaire was created free and distributed through online platforms without any necessary spending, and the questionnaire includes the instruments to access the three variables, which are insecure attachment (anxious and avoidant), cognitive jealousy, and romantic relationship satisfaction. However, the cross-sectional studies collected all the data only one time. Hence, it is difficult to examine causal relationships from the cross-sectional studies (Wang & Cheng, 2020). Thus, participants who just developed into a romantic relationship may have a higher relationship satisfaction, while participants who have already developed a romantic relationship for a period may have a lower or higher

relationship satisfaction. Conducting a longitudinal study is more accurate as a researcher can follow up with the satisfaction of the romantic couple as time passes. It undergoes some events or situations that may be affecting their satisfaction. Bühler and Orth (2024) claimed that romantic relationship satisfaction tends to drop during the first ten years and will increase when it reaches twenty years and decrease after. It can be said that satisfaction with romantic relationships varies as time passes. Hence, a longitudinal study will be more suitable for studying relationship satisfaction as the data varies over time.

5.4 Conclusion

This study has contributed to the research pool by examining the relationship between insecure attachment (anxious and avoidant), cognitive jealousy, and romantic relationship satisfaction. Besides, this study also studies the mediation of cognitive jealousy on the relationship between insecure attachment (anxious and avoidant) and romantic relationship satisfaction among emerging adults in Malaysia. Data were collected from 285 emerging adult couples via online survey. The findings revealed that the cognitive effect partially mediated the relationship between insecure attachment (anxious and avoidant) and romantic relationship satisfaction. Moreover, the direct and indirect relationship of insecure attachment and romantic relationship satisfaction was found to be significant. As per this study's results, insecurely attached individuals (anxious or avoidant) negatively predict romantic relationship satisfaction. Consequently, anxious, attached individuals tend to develop cognitive jealousy due to excessive worry and negative cognitive thoughts that contribute to negative romantic relationship satisfaction. On the other hand, avoidant-attached individuals develop cognitive jealousy due to distrust towards their partner and become suspicious and insecure about expressing their emotions, which leads to further negative effects on their relationship.

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Appendices

Appendix A – Sample Size Calculation

Monte Carlo Power Analysis

Avoidant attachment, cognitive jealousy, and romantic relationship satisfaction

Monte Carlo Power Analysis for Indirect Effects
 Written by Alexander M. Schoemann (Contact), Aaron J. Boulton, & Stephen D. Short

ab	147.00	0.93	0.95	0.97
ab	148.00	0.93	0.95	0.97
ab	149.00	0.93	0.95	0.97
ab	150.00	0.93	0.96	0.97

N= 149 at 0.95 power

Anxiety attachment, cognitive jealousy, and romantic relationship satisfaction

Monte Carlo Power Analysis for Indirect Effects
 Written by Alexander M. Schoemann (Contact), Aaron J. Boulton, & Stephen D. Short

ab	273.00	0.93	0.95	0.97
ab	274.00	0.93	0.95	0.97
ab	275.00	0.93	0.95	0.97
ab	276.00	0.94	0.96	0.97
ab	277.00	0.94	0.96	0.97

N= 275 at 0.95 power

Total sample size:

N= (149+275)/ 2= 212

Appendix A1

Adult Attachment and Relationship Satisfaction (Vollmann et al., 2019)

Article

JSPR

Adult attachment and relationship satisfaction: The mediating role of gratitude toward the partner

Journal of Social and Personal Relationships
2019, Vol. 36(11-12) 3875–3886
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SAGE

Manja Vollmann^{1,2,3}, Sem Sprang³,
and Femke van den Brink³

Abstract

Previous research indicated that insecure attachment, that is, higher levels of attachment avoidance and attachment anxiety, is negatively associated with relationship satisfaction. The present study investigated the mediating role of gratitude toward the partner in this association. In a cross-sectional design, 362 participants (84% female, age range 18–70 years) involved in a romantic relationship completed an online questionnaire assessing attachment avoidance and anxiety, gratitude toward the partner, and relationship satisfaction. Data were analyzed by means of regression and bootstrap analyses. The regression analysis revealed significant negative total and direct effects of both avoidance and anxiety on relationship satisfaction. The bootstrap analyses revealed a significant negative indirect effect of avoidance, but not anxiety, on relationship satisfaction via gratitude toward the partner. Specifically, higher levels of avoidant attachment were related to less gratitude toward the partner, which in turn was associated with lower relationship satisfaction. These findings suggest that it might be valuable applying gratitude interventions to clients high in attachment avoidance attending couples therapy.

Adult attachment. The Experiences in Close Relationship Scale–short form (Wei, Russell, Mallinckrodt, & Vogel, 2007) was used to measure attachment avoidance and anxiety. Avoidance (e.g., “I am nervous when partners get too close to me.”) and anxiety (e.g., “My desire to be very close sometimes scares people away.”) were measured with 6 items each. Responses were given on a 7-point Likert-type scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Items were recoded if appropriate and averaged so that higher scores indicate higher levels of **avoidance** ($\alpha = .77$, $M = 1.92$, $SD = 0.88$) and **anxiety** ($\alpha = .68$, $M = 2.96$, $SD = 1.13$), respectively.

Gratitude toward the partner. Gratitude toward the partner was measured with a modified version of the Gratitude Questionnaire (GQ-6) (McCullough et al., 2002; Vogt, 2013). Four items were adjusted so that they focus on gratitude toward the partner instead of gratefulness in daily life and toward unspecified others (i.e., “There is so much in my partner to be thankful for,” “If I had to list everything that I feel grateful for in my partner, it would be a very long list,” “When I look at my partner, I don’t see much to be grateful for,” and “Long amounts of time can go by before I feel grateful to my partner”). Items were answered on a 7-point Likert-type scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Items were recoded if appropriate and averaged so that higher scores indicate higher gratefulness toward the partner ($\alpha = .78$, $M = 6.22$, $SD = 0.82$).

Relationship satisfaction. Relationship satisfaction was assessed with the Relationship Assessment Scale (Hendrick, 1988) consisting of 7 items (e.g., “In general, how satisfied are you with your relationship?”). Participants indicated their responses on 5-point Likert-type scales that fit the content of the item, e.g., ranging from 1 = *unsatisfied* to 5 = *extremely satisfied*. Items were recoded if appropriate and averaged so that higher scores indicate higher **relationship satisfaction** ($\alpha = .86$, $M = 4.31$, $SD = 0.59$).

Table 1. Bivariate correlations of study variables.

	1	2	3	4
1. Attachment avoidance		.29*	-.62*	-.63*
2. Attachment anxiety	.29*		-.25*	-.39*
3. Gratitude toward partner	-.62*	-.25*		.60*
4. Relationship satisfaction	-.63*	-.39*	.60*	

* $p < .001$.

Appendix A2

Correlation Between Adult Attachment and Cognitive Jealousy (Chursina, 2023)

FAMILY PSYCHOLOGY

The Impact of Romantic Attachment Styles on Jealousy in Young Adults

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Background. Romantic attachment is reflected in various aspects of dyadic interaction in a couple, since it is a self-reinforcing system of cognitive, emotional and behavioral patterns. Romantic jealousy was shown to be associated with dimensions of attachment insecurity in various studies worldwide.

Objectives. To identify differences in expressions of romantic jealousy based on romantic attachment style. To determine the influence of attachment-related anxiety and attachment-related avoidance on cognitive, emotional, and behavioral jealousy.

Design. The sample comprised 171 heterosexual individuals. The "Experiences in Close Relationships — Revised" questionnaire (ECR-R; Fraley, Waller, & Brennan, 2000; adapted for Russian by Chursina, 2022) and "Multidimensional Jealousy Scale" (MJS; Pfeiffer, & Wong, 1989) were used.

Results. A number of significant differences were identified between insecure and secure attachment styles. *Avoidant attachment* is characterized by cognitive jealousy, *ambivalent attachment* is characterized by cognitive and behavioral jealousy, while *dismissing attachment* showed no significant differences in the manifestations of jealousy in comparison with secure attachment style. Emotional jealousy is equally characteristic of all types. The primacy of romantic attachment in relation to cognitive and behavioral jealousy was also proved.

Conclusion. The experience of jealousy differs among romantic attachment styles. *Attachment-related anxiety* is a predictor of intrusive thoughts and behavioral manifestations of jealousy, while *attachment-related avoidance* is less, the greater the manifestation of jealousy behaviors.

Keywords:

romantic attachment, romantic jealousy, two-dimensional model of attachment, attachment-related anxiety, attachment-related avoidance

Results

Relationship Between the Indicators of Romantic Attachment and Jealousy

In a study of jealousy in adults with different romantic attachment styles, significant correlations were identified between the scores on the multidimensional jealousy scale and measures of insecure romantic attachment. Correlations were found between the cognitive jealousy scale and both dimensions of romantic attachment insecurity: anxiety ($r = 0.50, p < 0.00$) and avoidance ($r = 0.29, p < 0.00$), as well as with the type of romantic attachment variable ($r = 0.21, p < 0.01$). Romantic attachment anxiety also showed a significant correlation with behavioral jealousy ($r = 0.41, p < 0.00$).

Appendix A3

Correlation between Cognitive Jealousy and Romantic Relationship Satisfaction

(Elphinston et al., 2013)

Western Journal of Communication
Vol. 77, No. 3, May–June 2013, pp. 293–304



Romantic Jealousy and Relationship Satisfaction: The Costs of Rumination

Rachel A. Elphinston, Judith A. Feeney,
Patricia Noller, Jason P. Connor, &
Jennifer Fitzgerald

The experience of romantic jealousy and its influence on relationship outcomes is unclear. Romantic jealousy is often associated with damaging effects; on the other hand, jealousy is linked to positive relationship outcomes such as increased commitment. In this study, we aimed to address inconsistencies in previous research by proposing rumination as a mediator between romantic jealousy (cognitive jealousy and surveillance behaviors) and relationship dissatisfaction. We also aimed to extend our understanding of behavioral responses to jealousy, and in particular, partner surveillance and its link to relational dissatisfaction by proposing a research question. Overall, there were two paths to relationship dissatisfaction: Cognitive jealousy and surveillance behaviors were associated with relationship dissatisfaction via rumination, and cognitive jealousy was also directly associated with relationship dissatisfaction. Interestingly, surveillance behaviors were directly associated with relationship satisfaction. From these results, rumination is highlighted as a factor in explaining the link between romantic jealousy and relationship dissatisfaction. Clinical implications are discussed.

Table 1 Correlations, Means, and Standard Deviations for the Variables in Model 1

Variables	M	SD	1	2	3	4
1. Cognitive Jealousy	8.58	4.38	1			
2. Surveillance	13.85	5.81	.32***	1		
3. Rumination	18.06	6.41	.51***	.44***	1	
4. Satisfaction	32.09	7.72	-.36***	-.02	-.31***	1

Note. In the partial disaggregation approach, the following items were collapsed to form single indices. Rumination (1): Items 1, 3, 5, 10; Rumination (2): 2, 4, 7, 9. Cognitive jealousy (1): 1, 4, 8; Cognitive jealousy (2): 3, 7. Surveillance behaviors: Items 1, 5, 7; Surveillance behaviors (2): 2, 3, 6. Satisfaction (1): Items 6, 8, 10. Satisfaction (2): Items 7, 9.

** $p < .01$. *** $p < .001$.

Appendix B - Questionnaire (Online Survey)

Informed Consent



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Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman

Introduction

We are final-year students at Universiti Tunku Abdul Rahman studying Bachelor of Social Science (Honours) Psychology currently conducting research for our final-year project on the title of "Cognitive Jealousy mediating Adult Attachment and Romantic Relationship Satisfaction among Emerging Adults in Malaysia".

If your response is complete and meets the participation criteria, you will be eligible for our **lucky draw** and have the chance to win the **RM10 Touch 'n Go eWallet reload pin**. There will have 50 winners and will be selected randomly through picker wheel. For the lucky draw winners, we will send the reload pin to you via email. You may choose to provide your email or opt not to participate in the lucky draw. Rest assured, your email will remain private and confidential, only used for sending the reward.

The requirements for participants are as follows: 1) **Malaysian citizens aged between 18 and 29**, and 2) **married or in a romantic relationship with an opposite-sex partner**.

This research will take around **5 to 10 minutes to complete** and all responses will be kept confidential. Please try to complete the questionnaire and answer as honestly as possible. Your participation will greatly contribute to the success of this research.

PERSONAL DATA PROTECTION NOTICE

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion. Among others it includes:

- a) Name
- b) Identity card
- c) Place of Birth
- d) Address
- e) Education History
- f) Employment History
- g) Medical History
- h) Blood type
- i) Race
- j) Religion
- k) Photo
- l) Personal Information and Associated Research Data

2. The purposes for which your personal data may be used are inclusive but not limited to:

- a) For assessment of any application to UTAR
- b) For processing any benefits and services
- c) For communication purposes
- d) For advertorial and news
- e) For general administration and record purposes
- f) For enhancing the value of education
- g) For educational and related purposes consequential to UTAR
- h) For replying any responds to complaints and enquiries
- i) For the purpose of our corporate governance
- j) For the purposes of conducting research/ collaboration

3. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

4. Any personal information retained by UTAR shall be destroyed and/or deleted in

accordance with our retention policy applicable for us in the event such information is no longer required.

5. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.

7. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

8. You may access and update your personal data by writing to us at:

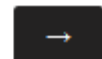
Ong Rui Tao (ongruitao@1utar.my)

Chong Hong Da (chd0511@1utar.my)

Sebastian Chan Kian Sheng (sebastianchan120802@1utar.my)

I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.

I disagree, my personal data will not be processed.



Appendix B1

Demographic information

1. Nationality:

Malaysian

Non-Malaysian



2. Are you a **FAS Year 3** student studying at **UTAR (Kampar campus)**?

Yes

No



3. Sexual orientation:

Heterosexual (I am attracted by the individual with opposite gender)

Homosexual (I am attracted by the individual with same gender)

Others



4. Marital status:

In a relationship

Married

Single

Divorced



5. Age:

6. Gender:

Male

Female

7. Ethnicity:

Malay

Chinese

Indian

Others (specify)

8. If you wish to participate in the lucky draw, please provide your email below. Reload Pins will be sent out to winners within 2-4 weeks upon the completion of our data collection procedure. If you choose to NOT participate in the lucky draw, you can leave this section blank.



Appendix B4

Relationship Satisfaction Scale (RAS)

Instructions: Select the number for each item which best answers that item for you.

	Low	Moderately low	Moderate	Moderately high	High
How well does your partner meet your needs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Low	Moderately low	Moderate	Moderately high	High
In general, how satisfied are you with your relationship?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Low	Moderately low	Moderate	Moderately high	High
How good is your relationship compared to most?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Low	Moderately low	Moderate	Moderately high	High
How often do you wish you hadn't gotten into this relationship?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Low	Moderately low	Moderate	Moderately high	High
To what extent has your relationship met your original expectations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Low	Moderately low	Moderate	Moderately high	High
How much do you love your partner?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Low	Moderately low	Moderate	Moderately high	High
How many problems are there in your relationship?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Appendix C – Ethical Approval Letter



UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/78-227/2024

6 February 2024

Dr Pung Pit Wan
Head, Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Dr Pung,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research project from Bachelor of Social Science (Honours) Psychology programme enrolled in course UAPZ3023. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	A Study of Music in Mood Regulation and Positive Emotions Among University Students in Malaysia	1. Bradley Chia Lian-Kit 2. Tan Kar Jiun	Dr Gan Su Wan	16 January 2024 – 15 January 2025
2.	Cognitive Jealousy Mediating Adult Attachment and Romantic Relationship Satisfaction Among Emerging Adults in Malaysia	1. Ong Rui Tao 2. Chong Hong Da 3. Sebastian Chan Kian Sheng		

The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my



Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,



Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Arts and Social Science
 Director, Institute of Postgraduate Studies and Research

Appendix D - Reliability of Pilot Test

Reliability

Scale: RELIABILITY OF ANXIETY

Case Processing Summary

		N	%
Cases	Valid	35	100.0
	Excluded ^a	0	.0
	Total	35	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.847	.847	18

Reliability

Scale: RELIABILITY OF JEALOUSY

Case Processing Summary

		N	%
Cases	Valid	35	100.0
	Excluded ^a	0	.0
	Total	35	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.909	.912	8

Reliability

→ Scale: RELIABILITY OF AVOIDANT

Case Processing Summary

		N	%
Cases	Valid	35	100.0
	Excluded ^a	0	.0
	Total	35	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.851	18

Reliability

Scale: RELIABILITY OF RELATIONSHIP SATISFACTION

Case Processing Summary

		N	%
Cases	Valid	35	100.0
	Excluded ^a	0	.0
	Total	35	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.694	.723	7

Appendix E - Reliability of Actual Study

Reliability

Scale: ECR anxious

Case Processing Summary

		N	%
Cases	Valid	283	100.0
	Excluded ^a	0	.0
	Total	283	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.889	.889	18

Reliability

Scale: MJS

Case Processing Summary

		N	%
Cases	Valid	283	100.0
	Excluded ^a	0	.0
	Total	283	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.911	.912	8

Reliability

Scale: ECR avoidant

Case Processing Summary

		N	%
Cases	Valid	283	100.0
	Excluded ^a	0	.0
	Total	283	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.764	.760	18

Reliability

Scale: RAS

Case Processing Summary

		N	%
Cases	Valid	283	100.0
	Excluded ^a	0	.0
	Total	283	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.796	.810	7

Appendix F - Descriptive Statistics**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
5. Age:	283	18	29	22.63	2.134
Valid N (listwise)	283				

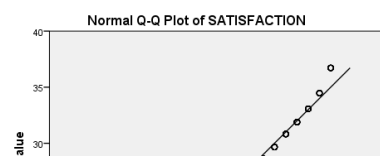
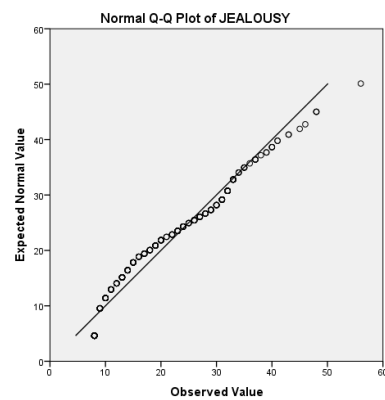
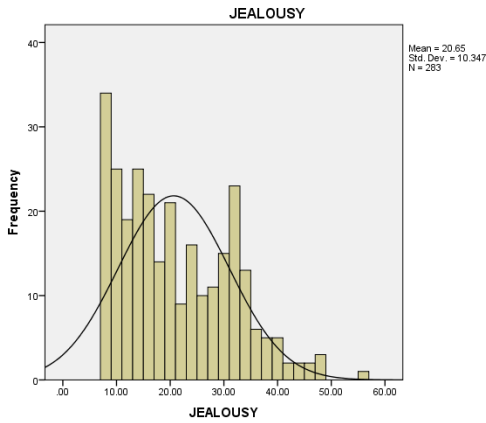
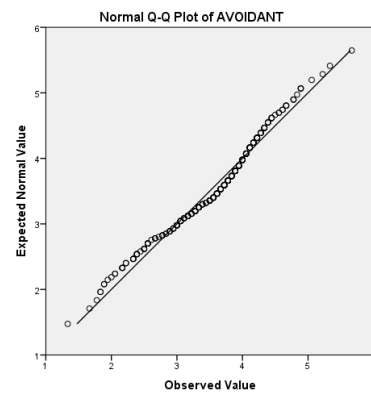
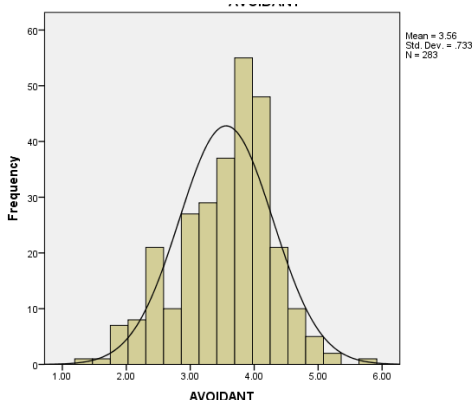
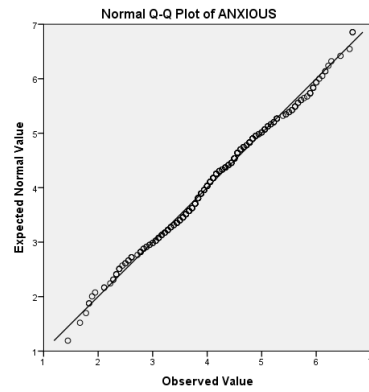
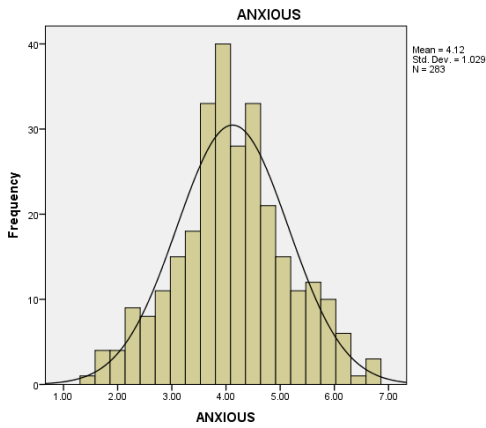
6. Gender:

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	101	35.7	35.7	35.7
Female	182	64.3	64.3	100.0
Total	283	100.0	100.0	

7. Ethnicity: - Selected Choice

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Malay	9	3.2	3.2	3.2
Chinese	272	96.1	96.1	99.3
Indian	1	.4	.4	99.6
Others (specify)	1	.4	.4	100.0
Total	283	100.0	100.0	

Appendix G - Histogram and Q-Q Plot



Appendix H - Skewness and Kurtosis, KS Test**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AVOIDANT	283	1.33	5.67	3.5605	.73264	-.430	.145	.091	.289
ANXIOUS	283	1.44	6.67	4.1221	1.02937	.022	.145	-.099	.289
JEALOUSY	283	8.00	56.00	20.6537	10.34683	.616	.145	-.372	.289
SATISFACTION	283	12.00	35.00	26.9929	4.72806	-.495	.145	-.068	.289
Valid N (listwise)	283								

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SATISFACTION	.087	283	.000	.974	283	.000
ANXIOUS	.048	283	.200 [*]	.993	283	.201
AVOIDANT	.104	283	.000	.978	283	.000
JEALOUSY	.128	283	.000	.930	283	.000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendix I - Pearson Correlation

Correlations

		ANXIOUS	AVOIDANT	JEALOUSY	SATISFACTIO N
ANXIOUS	Pearson Correlation	1	.217**	.200**	-.199**
	Sig. (2-tailed)		.000	.001	.001
	N	283	283	283	283
AVOIDANT	Pearson Correlation	.217**	1	.253**	-.270**
	Sig. (2-tailed)	.000		.000	.000
	N	283	283	283	283
JEALOUSY	Pearson Correlation	.200**	.253**	1	-.436**
	Sig. (2-tailed)	.001	.000		.000
	N	283	283	283	283
SATISFACTION	Pearson Correlation	-.199**	-.270**	-.436**	1
	Sig. (2-tailed)	.001	.000	.000	
	N	283	283	283	283

** . Correlation is significant at the 0.01 level (2-tailed).

Appendix J - Durbin- Watson, Tolerance, VIF**Model Summary^b**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.474 ^a	.225	.217	4.18468	1.832

a. Predictors: (Constant), JEALOUSY, ANXIOUS, AVOIDANT

b. Dependent Variable: SATISFACTION

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	35.827	1.450		24.705	.000	32.972	38.682		
	ANXIOUS	-.414	.251	-.090	-1.650	.100	-.908	.080	.931	1.075
	AVOIDANT	-.997	.357	-.155	-2.792	.006	-1.700	-.294	.907	1.102
	JEALOUSY	-.173	.025	-.379	-6.876	.000	-.223	-.124	.914	1.094

a. Dependent Variable: SATISFACTION

Appendix K - Residual, Cook's Distance, Mahalanobis Distance, Leverage Value**Casewise Diagnostics^a**

Case Number	Std. Residual	SATISFACTIO N	Predicted Value	Residual
4	-2.465	16.00	26.3144	-10.31436
5	-3.258	16.00	29.6331	-13.63308
10	-3.144	12.00	25.1557	-13.15572
62	-2.629	14.00	25.0009	-11.00085
68	2.348	35.00	25.1736	9.82639
72	2.773	35.00	23.3974	11.60257
118	-2.582	16.00	26.8050	-10.80505
174	-2.107	17.00	25.8173	-8.81726
204	-2.751	17.00	28.5122	-11.51215
219	-3.077	16.00	28.8754	-12.87536
245	-2.434	15.00	25.1851	-10.18511

Case Summaries^a

	Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value
GROUPING 0 1	4	2.14648	.01731	.00761
2	5	2.08479	.02964	.00739
3	10	3.22191	.03809	.01143
4	62	3.06373	.02561	.01086
5	68	1.41391	.01199	.00501
6	72	3.69705	.03308	.01311
7	118	6.90075	.04940	.02447
8	174	1.47124	.00988	.00522
9	204	2.35013	.02300	.00833
10	219	2.24356	.02783	.00796
11	245	5.26689	.03440	.01868
Total N		11	11	11

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1418.263	3	472.754	26.997	.000 ^b
Residual	4885.723	279	17.512		
Total	6303.986	282			

a. Dependent Variable: SATISFACTION

b. Predictors: (Constant), JEALOUSY, ANXIOUS, AVOIDANT

Appendix L - Anxious Attachment, Cognitive Jealousy, Romantic Relationship

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 4
Y : SATISFAC
X : ANXIOUS
M : JEALOUSY

Sample
Size: 283

OUTCOME VARIABLE:
JEALOUSY

Model Summary

R	R-sq	MSE	F	df1	df2	p
.200	.040	103.142	11.703	1.000	281.000	.001

Model

	coeff	se	t	p	LLCI	ULCI
constant	12.369	2.496	4.955	.000	7.455	17.282
ANXIOUS	2.010	.588	3.421	.001	.853	3.166

Standardized coefficients

	coeff
ANXIOUS	.200

OUTCOME VARIABLE:
SATISFAC

Model Summary

R	R-sq	MSE	F	df1	df2	p
.451	.203	17.937	35.729	2.000	280.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	33.101	1.085	30.497	.000	30.964	35.237
ANXIOUS	-.537	.250	-2.146	.033	-1.029	-.044
JEALOUSY	-.189	.025	-7.582	.000	-.238	-.140

Standardized coefficients

	coeff
ANXIOUS	-.117
JEALOUSY	-.413

Test(s) of X by M interaction:

F	df1	df2	p
1.950	1.000	279.000	.164

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

SATISFAC

Model Summary

R	R-sq	MSE	F	df1	df2	p
.199	.040	21.542	11.633	1.000	281.000	.001

Model

	coeff	se	t	p	LLCI	ULCI
constant	30.768	1.141	26.973	.000	28.523	33.013
ANXIOUS	-.916	.269	-3.411	.001	-1.444	-.387

Standardized coefficients

	coeff
ANXIOUS	-.199

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI	c_cs
-.916	.269	-3.411	.001	-1.444	-.387	-.199

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
-.537	.250	-2.146	.033	-1.029	-.044	-.117

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
JEALOUSY	-.379	.130	-.647	-.131

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
JEALOUSY	-.083	.028	-.140	-.029

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

WARNING: Variables names longer than eight characters can produce incorrect output when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

----- END MATRIX -----

Appendix M - Avoidant Attachment, Cognitive Jealousy, Romantic Relationship

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 4
 Y : SATISFAC
 X : AVOIDANT
 M : JEALOUSY

Sample
 Size: 283

OUTCOME VARIABLE:
 JEALOUSY

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.253	.064	100.571	19.185	1.000	281.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	7.942	2.963	2.680	.008	2.110	13.774
AVOIDANT	3.570	.815	4.380	.000	1.966	5.175

Standardized coefficients

	coeff
AVOIDANT	.253

OUTCOME VARIABLE:
 SATISFAC

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.466	.217	17.619	38.896	2.000	280.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	34.620	1.256	27.567	.000	32.148	37.092
AVOIDANT	-1.100	.353	-3.120	.002	-1.794	-.406
JEALOUSY	-.180	.025	-7.193	.000	-.229	-.130

Standardized coefficients

	coeff
AVOIDANT	-.170
JEALOUSY	-.393

Test(s) of X by M interaction:

F	df1	df2	p
.135	1.000	279.000	.714

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

SATISFAC

Model Summary

R	R-sq	MSE	F	df1	df2	p
.270	.073	20.800	22.069	1.000	281.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	33.193	1.347	24.635	.000	30.541	35.846
AVOIDANT	-1.741	.371	-4.698	.000	-2.471	-1.012

Standardized coefficients

	coeff
AVOIDANT	-.270

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI	c_cs
-1.741	.371	-4.698	.000	-2.471	-1.012	-.270

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
-1.100	.353	-3.120	.002	-1.794	-.406	-.170

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
JEALOUSY	-.641	.165	-.988	-.344

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
JEALOUSY	-.099	.025	-.152	-.053

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000