



Research Paper

Attachment relationships and psychological distress in young adults: The mediating role of self-esteem

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ABSTRACT

Background: The relationship between attachment security and psychological distress (such as depressive and anxiety symptoms) is well established. However, the role of attachment security beyond primary attachment, referred to as secondary attachment, and the mechanism underlying this relationship is under-explored among young adults.

Aims: This study sought to investigate the effects of primary attachment and secondary attachment on psychological distress with self-esteem as a mediator in young adults.

Method: Four hundred and fifty two UK participants aged 18–25 (55.76% females; Mean age = 20.72; SD = 2.29) completed measures of attachment, self-esteem and psychological distress. Using two mediation models, we tested the effects of primary attachment and secondary attachment separately on psychological distress mediated by self-esteem, while controlling for the other type of attachment (i.e. primary or secondary).

Results: The findings supported the mediation effects of both primary attachment and secondary attachment through self-esteem on psychological distress.

Conclusion: This study provides the first empirical evidence for the individual role of primary and secondary attachment relationships through self-esteem, which has important implications for preventive and intervention strategies to lessen psychological distress among young adults.

1. Introduction

Young adulthood, a transitional developmental stage between late adolescence and early adulthood, is considered a crucial point of identity development and relationships exploration (Arnett, 2004, 2016; Gomes et al., 2019; Umemura et al., 2017). These developmental shifts involve complex ways of relating to the world, which may lead to greater instability and negative self-evaluation (Barry et al., 2015; Chung et al., 2014; Riva-Crugnola, 2017) or consolidation of mental health (Burt and Pysnick, 2012; Schulenberg et al., 2004). In the last two decades, the mental health of young adults has received more research attention (Grant & Potenza, 2010; Tanner, 2016), based on the evidence that three quarters of all mental health problems start by the age of 24 years (Kessler et al., 2005); and young adults between 18 and 25 years show increased vulnerabilities to mental health difficulties worldwide (Kessler et al., 2007; Lugata et al., 2020). Notably, in young adults, depressive and anxiety symptoms are the largest burden of psychological distress (Copeland et al., 2014; Tomitaka et al., 2019). Given

this, recent research has explored protective factors, such as secure attachment and self-esteem, that may contribute to enhancing youths' perception of self as valued and worthwhile (Imran et al., 2020a).

Although studies have recognised the relationship of secure attachment to reduced psychological distress (e.g. Mikulincer and Shaver, 2015; Riva-Crugnola et al., 2020; Umemura et al., 2017), little is known about the underlying mechanism between this relationship, such as through self-esteem (Ein-Dor and Doron, 2015; Lee and Hankin, 2009). Additionally, until now research has only studied primary attachment and not explored this relationship with secondary attachment (Imran et al., 2020a). Secondary attachment, such as that with romantic partners, friends or siblings, is important for young adults (Arnett, 2004; Rosen, 2016) and therefore could show a similar relation to psychological distress as primary attachment (Imran et al., 2020a). Understanding this as well as the underlying mechanism of this relationship has the potential to aid in the development of preventive and intervention strategies to lessen psychological distress among young adults (Arnett, 2016; Ein-Dor and Doron, 2015; Gomes et al., 2019).

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Attachment theory provides a conceptual framework indicating that patterns of adult relationships are rooted in early attachment relationships (Bowlby, 1973, 1980; Hazen and Shaver, 1987). Based on childhood interactions with primary attachment figures, individuals develop “internal working models” of the self and others (Levine and Heller, 2010). Self-model is based on the beliefs about self as being esteemed, worthy of love and care whereas other model is based on the beliefs about others as being reliable and trustworthy (Levine and Heller, 2010; Mikulincer and Shaver, 2012). Individuals who have both positive self and other models are considered secure, while having any negative dimension is broadly considered an insecure form of attachment (Shi, 2003). Current evidence supports the two-dimensional factors of attachment: Anxiety and avoidance (Brennan et al., 1998; Mikulincer and Shaver, 2007). Attachment anxiety corresponds to negative value of self-model but positive value of other model while attachment avoidance is consistent with positive value of self but negative value of other model (Brennan et al., 1998; Mikulincer and Shaver, 2007; Simpson and Rholes, 2017).

Additionally, attachment theorists have suggested that primary attachment security is predictive of attachment to other supportive figures later in life, such as: Siblings, friends and romantic partners, hereafter defined as secondary attachments (Anisworth and Bell, 1970; Ainsworth, 1989). Yet, there is not one permanent form of attachment for each relationship and an individual can have different levels and forms of attachment models in different relationships (Collins and Allard, 2001), suggesting that quality of different attachment relationships may contribute towards individuals’ mental health in different ways (Imran et al., 2020a). Despite the attachment system expanding to multiple relationships in young adults (Rosenthal and Kobak, 2010), to date, the role of secondary attachment is under-explored among young adults. This is perhaps particularly important during young adulthood when uncertainties are likely to be high within relationships beyond primary attachment (Rowen & Emery, 2014), and quality of both primary and secondary attachment relationships are important (Arnett, 2004; Imran et al., 2020a; Rosen, 2016).

The effect of primary attachment security on psychological distress is well-researched in young adults (e.g Leung et al., 2011; Wadman et al., 2019). Individuals with insecure attachment are likely to present psychological distress and lower self-esteem; conversely, secure individuals are likely to exhibit lower distress and better self-esteem (Mónaco et al., 2019). However, in contrast, research into the role of secondary attachment and psychological distress among young adults is limited, and most previous studies focused on romantic attachment for the secondary attachment dimension (e.g Petersen and Le, 2017), neglecting the roles of friends, siblings etc. Given this, in the current study, we examined the most significant secondary attachment in participants lives (be it romantic, friends or siblings), we also investigated security within both primary and secondary attachment relationships separately, considering that they are equally and independently related to young adults’ psychological distress.

The theoretical conceptualisations of attachment point to other mechanisms underpinning the association between attachment and psychological distress in young adults, namely self-esteem (Hankin et al., 2005; Roberts et al., 1996). Self-esteem is defined as an overall evaluation of self-worth (Marsh and O’Mara, 2008; Rosenberg, 1965). The relationship between low self-esteem and depression and anxiety symptoms holds across studies (Chen et al., 2020; Henriksen et al., 2017; Orth & Robins, 2013). Furthermore, attachment theory (see Ainsworth, 1973; Bowlby, 1973, 1980, 1982, 1988) establishes the relationship between attachment and self-esteem with findings showing that attachment security sets the assumptions about the self and others (Sroufe, 2002; Thompson, 2006). As such, research has illustrated that secure attachment to parents has been linked to high self-esteem (Pasanisi et al., 2015; Rosen, 2016), while insecure individuals tend to present low self-esteem which in turn leads to more psychological distress (Chen et al., 2020). Roberts et al. (1996) suggested that

attachment insecurity leads to negative beliefs about oneself, which in turn activate negative cognitions of psychological distress. Essentially, the attachment bond makes a person identify oneself as a worthy or an unworthy person (Feeney et al., 2008; Hazan and Shaver, 1994). Further, the meta-analysis of Harris and Orth (2019) into longitudinal studies evidenced the positive contribution of relationships in shaping individual’s self-esteem in all phases of life. Likewise, Shen et al. (2021) indicate an association between childhood attachment with adult attachment, self-esteem and psychological distress. Of note, there seems to be a conceptual link between the self-model of attachment and self-esteem as both view self as valued and competent (Harris and Orth, 2019). This link has been supported by other theoretical models such as object relational theory (Klein, 1933) and symbolic interactionism (Aksan et al., 2009); as both consider that individuals’ self-evaluations are influenced by external validation from significant others in day to day life (Shrauger and Schoeneman, 1979). This aspect seems to be of particular interest in young adults within secondary attachment relationships as they are continually reshaping the self-model beyond primary attachment relationships (Arnett, 2004; Imran et al., 2020a).

The above highlights that both primary and secondary attachment relationships appear to make a significant and unique contribution towards self-esteem (Harris and Orth, 2019; Shen et al., 2021); however, the relations between multiple attachment relationships and self-esteem are yet to be explored. Further, the pathways between different attachment relationships, psychological distress and self-esteem are unknown. Therefore, the aim of this study was to examine the mediative relationship of primary attachment (such as parents, carer) and secondary attachment (such as friends, siblings, romantic partners) separately, with psychological distress through self-esteem in young adults. Two mediation models were tested with one attachment relationship as a predictor and other as a covariate (see Fig 1 and 2). We hypothesised that the effect of both primary and secondary attachment on psychological distress will be mediated by self-esteem, while controlling for the effect of other type of attachment (i.e., primary or secondary).

2. Method

Participants Four hundred and fifty two UK young adults (Mean age = 20.72; SD = 2.29) took part in this online study. Any individuals aged between 18 and 25 years and without the diagnosis of depression and anxiety disorders were invited to take part. Participants were asked to self-screen and any individuals with diagnosed depression and anxiety were excluded as the current study was a non-clinical study. The majority of the sample identified as White (75.22%) and were educated to undergraduate level (84.62%). Participants were recruited via social media using platforms such as Facebook (see details below). Further demographic information is presented in Table 1.

2.1. Measures

2.1.1. The experiences in close relationship scale - short form (ECR-S)

The ECR-S (Wei et al., 2007) was used twice first to measure Primary and then Secondary attachment security. The measure was selected in line with Imran et al. (2020a, 2020c) who also used it to measure primary attachment. This 12-item scale was designed to assess a general “trait” pattern of adult attachment as independently as possible particularly measuring attachment avoidance and attachment anxiety following Brennan et al. (1998) attachment insecurity dimensions. Wei et al. (2007) report the ECR-S to be reliable with Cronbach’s $\alpha = 0.86$ for the anxiety subscale and 0.88 for the avoidance subscale. Here, the composite score of anxiety and avoidance subscales was used and a higher score indicated more attachment insecurity.

2.1.2. The Rosenberg’s self-esteem scale (RSES)

The RSES (Rosenberg, 1965) was used to measure self-esteem. The RSES has 10 items and its reliability and validity with young people are

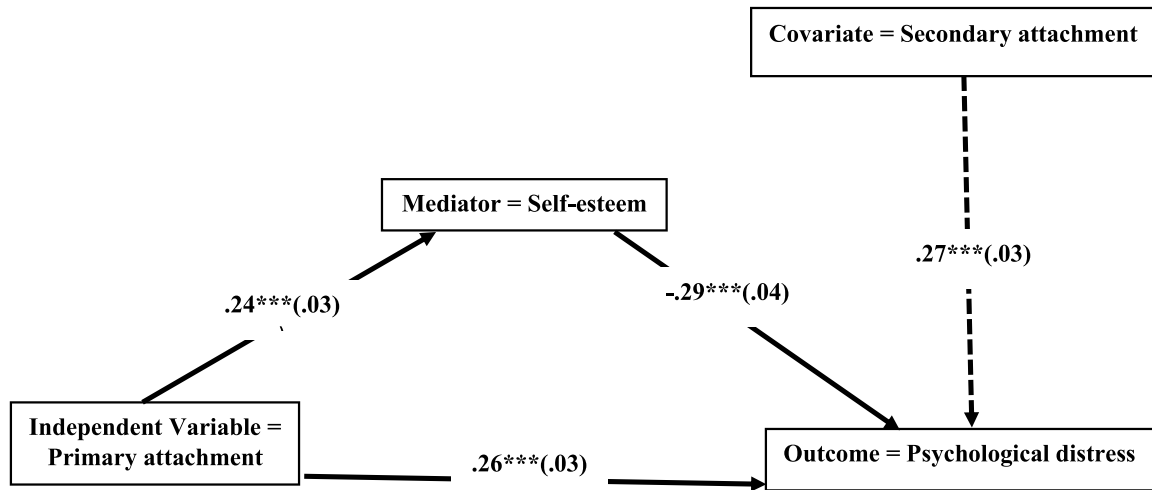


Fig 1. Results of the mediation model of primary attachment for psychological distress through self-esteem (N = 452)
 Note–Unstandardized regression coefficients are reported with standard errors in parentheses.
 *** = p < .001.

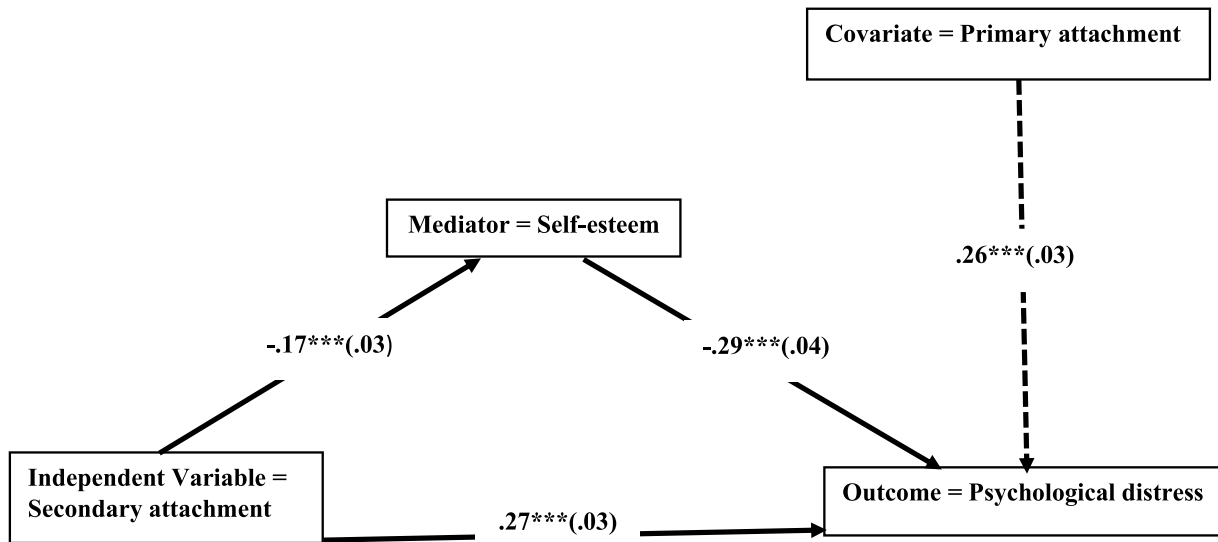


Fig 2. Results of the mediation model of secondary attachment for psychological distress through self-esteem (N = 452)
 Note–Unstandardized regression coefficients are reported with standard errors in parentheses.
 *** = p < .001.

Table 1
 Demographic characteristics of the study sample (N = 452).

Variables and Categories	N (%)
Gender	
Female	252 (55.75)
Male	200 (44.25)
Ethnicity	
White	340 (75.22)
Black/African	55 (12.17)
Asian	44 (9.74)
Other	13 (2.87)
Level of Education	
Some College	12 (2.56)
Undergraduate	382 (84.62)
Postgraduate	58 (12.82)
Other	0

Note: N = number of participants,% = Percentage.

well established across studies (i.e., Alessandri et al., 2015; Imran et al., 2020b). A higher score indicates high self-esteem.

2.1.3. The revised child anxiety and depression scale (RCADS)

The RCADS (Ebesutani et al., 2017) was used to measure psychological distress. The RCADS has 25 items and was developed to screen out anxiety and depression symptoms among children and adolescents with sound psychometric properties (Chorpita et al., 2005; De-Ross et al., 2002; Sandin et al., 2010) but has been validated to use with adults (McKenzie et al., 2019; Omega reliability = 0.93). A higher score indicates more psychological distress.

2.1.4. Procedure

Participants completed the battery of measures online. They also answered demographic questions including their gender, age and the highest level of education. The online survey was available via social networking sites (such as Facebook) between November 2019 and April 2020. The participant’s IP address was monitored to prevent a person re-

entering the survey. To avoid missing data, the option in the survey that automatically oblige respondents to respond to all items, was used. Participants were given an electronic link to the Qualtrics survey, where the invitation information was repeated, and participants were then required to give informed consent to proceed. Participants were given full right-to-withdraw information at this stage, as well as contact details of the researchers if they had any queries. Participants were asked to generate a unique 4-digit personal identifier to ensure confidentiality, and to record this code and use it should they wish to withdraw. Debriefing information was provided at the end of the survey, where participants were again reminded of their right to withdraw up to 2 weeks after data collection.

2.1.5. Ethical approval

The study followed the guidelines of the British Psychological Society’s Code of Human Research Ethics (BPS, 2014) and Guide to the General Data Protection Regulation (GDPR) set by the Information Commissioner’s Office (ICO, 2018). This study obtained ethics approval from University of Derby ethics committee. No reference numbers are used by the ethics committee when projects are approved. The Chair William Van Gordon can be contacted for verification of ethical approval. Ethics: W.vangordon@derby.ac.uk. Participants gave consent for their data to be used in the research.

2.1.6. Data analyses

Correlations between variables were first assessed using Pearson’s correlation. It was hypothesised that primary and secondary attachment insecurity would be positively related and both would have a positive relationship with psychological distress but a negative relationship with self-esteem. Mediation analysis was then performed to test path models using the PROCESS procedure in SPSS (Hayes, 2013). For total, direct and indirect effects, 5000 bootstrap samples with a 95% bias corrected confidence interval was used (Hayes, 2018, 2020). If zero resides within the confidence interval the effects are not different from zero. Therefore, the final decision about the significance of the mediation effects was based on this (Hayes, 2018; Hayes and Rockwood, 2020). For the two predictors (primary attachment and secondary attachment) a sample of 452 participants had the sufficient power (0.8) required to detect an effect of 0.13 (medium effect size) with alpha 0.05 (Field, 2013). Further, reliability of measures was assessed using Cronbach’s alphas (0.7–0.8 acceptable, 0.8–0.9 good and > 0.90 excellent; George and Mallery, 2003). Prior to all analyses, data were screened for multivariate normality, homoscedasticity, and multicollinearity. Overall, no significant violation of assumptions was detected (see Table 2).

3. Results

3.1. Descriptive statistics and preliminary analysis

Moderate to high Cronbach alphas (0.81 to 0.93) were found across the scales (see Table 2). All the skewness and kurtosis values were considered within acceptable normality as consistent with Kim (2013)

Table 2
Descriptive statistics of the study scales (N = 452).

Variables	α	M	SD	Skewness	Kurtosis
ECR-S PA	.81	34.37	9.75	.26	-1.57
ECR-S SA	.84	32.11	10.36	.57	-0.84
RSES Total	.93	24.51	6.63	-1.52	.82
RCADS total	.86	18.25	7.86	-1.34	.61

Note: N = number of participants, α = Cronbach’s alpha, M = Mean, SD = Standard deviation, ECR-12 PA = Experiences in Close Relationship Scale for Primary attachment, ECR-S SA = Experiences in Close Relationship Scale for Secondary attachment, RSES = Rosenberg’s Self-Esteem Scale, RCADS = Revised Child Anxiety and Depression Scale.

who states for sample sizes greater than 300 skewness value should be no greater than 2 and kurtosis values no greater than 7. Descriptive statistics can be found in Table 2. It should be noted that the RCADS mean score was 18.25 which is lower than the clinical level of psychological distress (M = 20.82) (Ebesutani et al., 2017). Further, the mean scores of 15-item anxiety and 10-item depression subscales were 9.15 and 9.10 respectively. These values are also below the cut-off of RCADS-related anxiety (M = 12.3) and depression diagnoses (M = 11.98) (Ebesutani et al., 2017).

All correlations were as per the hypotheses except that primary attachment insecurity showed positive correlation with self-esteem, which was not expected (Table 3).

3.1.1. Mediation model one

This model examined the effect of primary attachment on psychological distress mediated by self-esteem, while controlling for the effect of secondary attachment. Result indicated (Fig 1) that primary attachment had a direct positive effect (b = 0.26, SE = 0.03, p < .001) on psychological distress. Self-esteem as a mediator showed a negative effect (b = -0.29, SE = 0.04, p < .001) on psychological distress. Further, based on bootstrapping 95% confidence range 0.12 to 0.25 the total effect of primary attachment on psychological distress through self-esteem with a coefficient b = 0.19, SE = 0.03 was significant (p < .001). In addition, the direct effect of primary attachment on psychological distress was significant b = 0.26, SE = 0.03, CI = 0.19 to 0.33, p < .001. Whereas the significant indirect effect (0.22 minus 0.19) of primary attachment on psychological distress was b = 0.07, SE = 0.01, CI = -0.10 to -0.04, p < .001. Together, partial mediation model was supported.

3.1.2. Mediation model two

This model tested the effect of secondary attachment on psychological distress mediated by self-esteem, while controlling for the effect of primary attachment. As indicated in Fig 2, secondary attachment had a direct positive effect (b = 0.27, SE = 0.03, p < .001) on psychological distress. Self-esteem as a mediator showed a negative effect (b = -0.29, SE = 0.04, p < .001) on psychological distress. Further, based on bootstrapping 95% confidence range 0.25 to 0.38 the total effect of secondary attachment on psychological distress through self-esteem with a coefficient b = 0.32, SE = 0.03 was significant (p < .001). In addition, the direct effect of secondary attachment on psychological distress was significant b = 0.27, SE = 0.03, CI = 0.20 to 0.33, p < .001. Whereas the significant indirect effect (0.32 minus 0.27) of secondary attachment on psychological distress was b = 0.05, SE = 0.01, CI = 0.03 to 0.07, p < .001. Overall, partial mediation model was supported. Both models explained 41% of the variance in psychological distress, respectively.

4. Discussion

This study sought to examine the effects of primary attachment and secondary attachment on psychological distress, with self-esteem as a mediator in young adults (18 to 25 years), relations previously

Table 3
Bivariate correlations between the study variables (N = 452).

Variables	1	2	3	4
1 ECR-12 PA	-	.41**	.25**	.41**
2 ECR-12 SA	-	-	-0.11*	.52**
3 RSES total	-	-	-	-0.21**
4 RCADS total	-	-	-	-

Note: N = number of participants, ECR-12 PA = Experiences in Close Relationship Scale for Primary attachment, ECR-12 SA = Experiences in Close Relationship Scale for Secondary attachment, RSES = Rosenberg’s Self-Esteem Scale, RCADS = Revised Child Anxiety and Depression Scale. ** = p < .01; * = p < .05.

unexplored. The study findings support the mediating effects of self-esteem on both primary and secondary attachment relationships with psychological distress.

In the mediation Model One (with primary attachment as a predictor), primary attachment insecurity showed positive significant effect on psychological distress both directly and indirectly through self-esteem. The result regarding the direct positive effect of primary attachment insecurity on psychological distress, is consistent with previous studies, for example, Wadman et al. (2019) and Davila et al. (2004). This finding points to the affective impact of primary attachment insecurity such as development of distress through negative social interaction within relationships (Lee and Hankin, 2009), which also resonates with the notion of depression-rejection linkage as explained from the interactional theory of depression (Coyne, 1976), suggesting that primary attachment insecurity may serve as a risk factor for psychological distress in young adults (Davila et al., 2004; Mikulincer and Shaver, 2012). However, within the indirect path (Fig 1) primary attachment insecurity showed positive relationship with self-esteem as well as in the correlation analyses (Table 3), which was somewhat surprising as a negative link between primary attachment insecurity and self-esteem has been theoretically and empirically supported (Gomez and McLaren, 2007; Passanisi et al., 2015; Sroufe, 2005). One possible explanation of this could be that individuals systematically altered their evaluation of self in the context of relationships beyond primary attachment while attaining autonomy in adolescence and young adulthood (Allen et al., 2007; Imran et al., 2020a). This finding may point to the need of examining increased autonomy in young adults, which may potentially mediate the association between primary attachment security and self-esteem in this developmental stage.

In the mediation Model Two (with secondary attachment as a predictor), secondary attachment insecurity showed a significant effect both directly and indirectly through self-esteem on psychological distress. Consistent with attachment theory with focus on secondary attachment this finding evidences the conceptual link between the negative model of self and low self-esteem (Levine and Heller, 2010), which in turn leads to psychological distress (Gomez and McLaren, 2007; Liable, Carlo and Roesch, 2004). Other theoretical perspectives such as object relational theory and symbolic interactionism have common explanations regarding the link between attachment security and self-esteem that individual's self-concept is shaped by how the individual is seen or treated by close relationships (Davila et al., 2004). Previous research indicated that self-esteem in terms of sense of worth develops within the context of attachment security and mediates its link to depression and anxiety symptoms (Parker and Benson, 2004; Rohner, 2004). This result could be explained in line with what Arnett (2004, 2016) illustrated that in emerging adulthood individuals are pursuing stability in relationships beyond primary attachment thereby the quality of secondary attachment relationship may influence individuals' evaluation of self-worth and psychological health (Rosen, 2016). Of importance, this result supports the theoretical stance of this study that secondary attachment security plays a significant and independent role in young adults' mental health.

Comparing the two mediation models, the overall findings indicate insecurity within attachment relationships as potential risk factor directly and through self-esteem for psychological distress in young adults, supporting and expanding relevant theoretical and empirical realm (Goh and Wilkinson, 2017; Imran et al., 2020a; Wadman et al., 2019). Interestingly, for both independent variables, primary and secondary attachment, partial mediation models were supported which perhaps point to the fact that there are other potential mediators (such as self-criticism; Cantazero and Wei, 2010) not considered in this study, suggesting complex attachment patterns in young adulthood. Further, unlike primary attachment, secondary attachment's effect on self-esteem was negative, it may indicate that there is a more direct link between secondary attachment security and self-esteem than between primary attachment security and self-esteem in young adults.

4.1. Limitations and future research

There are several limitations of this study that should be acknowledged. Firstly, the majority of the sample were White and undergraduate university students in the UK, thus the results are only generalisable to this population. Secondly, this study considered self-esteem as a person's global sense of self-worth, but previous studies have indicated two dimensions of self-esteem implicit versus explicit (Pietschnig et al., 2018) that may impact individuals' mental health differently within the context of close relationships, perhaps future studies may consider different dimensions of self-esteem rather than the global measure of self-esteem. Additionally, the current study used composite scores for all scales, future studies may use subscales' scores to examine relations between the variables of interest more specifically. Levine and Heller (2010) posit that secure attachment beyond primary attachment may buffer the insecurities within primary attachment relationships, given this future research may seek to examine secondary attachment as a moderator.

5. Conclusions

To conclude, to the authors' knowledge this study provides the first empirical evidence about the mediative relationship between primary attachment and secondary attachment through self-esteem with psychological distress in young adults. The study findings have theoretical implications as attachment insecurity within both primary and secondary attachment relationships is indicated as a risk factor for psychological distress, emphasizing the need to explore attachment networks among young adults rather than focusing on a single attachment dimension. For clinical implications, the underpinning mechanism between primary and secondary attachment relationships and distress may help to design more specific interventions focusing on enhancing self-esteem in order to lessen psychological distress among young adults.

CRedit authorship contribution statement

Somia Imran: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Writing – original draft. **Sophie Jackson:** Supervision, Visualization, Writing – review & editing.

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Declaration of Interest Statement

No potential conflict of interest was reported by the authors.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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