

Age and Sex Differences in the Influence of Attachment Relationships on  
Adolescent Psychological Health

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### Abstract

The quality of adolescent attachment with mothers, fathers, and peers, and the impact of these relationships on psychological health and self-esteem is examined in a sample of 615 high school students. Using an attachment theory perspective, it is argued that different attachment relationships have different affects on adjustment depending on age and gender. Results support the view that attachment develops in peer relationships before withdrawing from parental relationships in adolescence and that this process occurs at different ages and has different consequences for self-esteem and depression. Maternal attachment had a greater impact on psychological adjustment for girls while paternal attachment had a greater impact for boys. It is concluded that while an attachment framework is useful for understanding developmental changes in relationship networks during adolescence, further individual difference and developmental factors may need to be considered.

## Age and Sex Differences in the Influence of Attachment Relationships on Adolescent Psychological Health

Adolescents face the challenge of marked biological and psychological changes taking place in an evolving social environment. It has been argued that these changes increase vulnerability to experiencing declines in psychological health (Brooks-Gunn & Petersen, 1991; Weller & Weller, 2000) and, although a range of factors contribute to adaptive adjustment in adolescence, it is the quality of interpersonal relations that has often been identified as a key determinant (Youniss & Smollar, 1985). Parental and peer relationships are often considered the most central in adolescence, although their impacts on adolescent psychological health are not necessarily the same (Wilkinson, 2004).

Traditional views of adolescent—parent relationships argue that adolescents desire independence from their parents and that a primary developmental task of adolescence is to achieve emotional autonomy from them (Erikson, 1968). As children enter adolescence a wider social network becomes available and sustaining and supportive relationships with peers and friends are developed (Furman & Buhrmester, 1992; Youniss & Smollar, 1985). The increased importance of extra-familial relationships through childhood and adolescence is widely accepted and there is increased recognition that positive and supportive parental and peer relationships are adaptive for normative challenges such as achieving independence, self-reliance, and establishing identity (Allan & Land, 1999).

Attachment theory (Bowlby, 1969/1997) provides a theoretical framework for understanding how the quality of interpersonal relationships develop and influences psychological health across the life-span. This theory proposes that cognitive relationship

schemas (internal working models), developed during infancy and childhood, influence current and future relationships and psychological adjustment. Research with infants, children, and both younger and older adults supports the contention that positive beliefs and expectations about interpersonal relationships are intimately involved with psychological well-being and adaptation, while negative beliefs and expectations are implicated in psychological distress and dysfunction (Shaver & Mikulincer, 2002). The existing literature also supports a link between the perceived quality of attachment relationships and mental health outcomes in adolescence (Armsden & Greenberg, 1987; Wilkinson, 2004; Wilkinson & Walford, 2001). The objective of the current study is to present and evaluate an attachment perspective of how the relationship between the matrix of major adolescent relationships and psychological health changes with age and differs according to gender.

#### *Attachment in Adolescence*

Attachment theory argues that intimate relationships play a central role in the development of personal identity and adaptive interpersonal functioning and early attachment experiences are argued to influence the individual's pattern of interpersonal relationships and functioning across the lifespan (Ainsworth, 1979; Doherty & Feeney, 2004). The study of attachment in adolescence has been considered challenging and complex as it is during this developmental period that the attachment network of individuals expands beyond the immediate family to include peers and romantic partners and attachment orientations begin to change (Hazan & Zeifman, 1994).

Empirical research has supported the continued importance of parental attachments for adolescent psychological health. Adolescents who have secure attachments with their

parents display higher self-esteem, greater social competence, and better emotional adjustment. Insecurely attached adolescents display increased depression, anxiety, and distress (Rice, Cunningham, & Young, 1997). Wilkinson and Walford (2001), in a study of senior high school students, found that positive parental attachment was associated with increased positive affect, life-satisfaction and happiness and decreased negative affect and anxiety, independent of personality or life events. A limitation of many studies in this area, however, is their failure to differentiate between the relative influences of mother and father attachment. It is known that infants form different patterns of attachment with their mother and father (Fox, Kimmerly, & Schafer, 1991) and that there is a shift in the relative influence of mother—child and father—child attachment during childhood (Kerns, Tomich, Aspelmier, & Contreras, 2000). Beyond childhood, Doherty and Feeney (2004) found that different aspects of attachment were associated with relationships with mothers and fathers across the lifespan.

Kerns and Barth (1995) report that maternal and paternal attachments foster different competencies in childhood and they argue that gender differences in attachment-related behaviours are to be expected. Sex differences in adolescent parental attachment relationships have also been reported. Some studies report that girls rate attachment to parents higher than do boys (e.g., Benson, Harris, & Rogers, 1992; Papini, Roggman, & Anderson, 1991). Newman (1989) found that mothers and daughters became increasingly close while mothers and sons became increasingly distant. Rice and Mulkeen (1995) found that while there were similar levels of mother and father attachment with adolescents overall, different patterns of intimacy in maternal and paternal relationships developed over

time. A number of studies, however, have not found significant differences in reports of overall parental attachments (e.g., Greenberg, Siegel, & Leitch, 1983; Kenny & Gallagher, 2002; Raja, McGee, & Stanton, 1992).

Perhaps a more important issue than the relative levels of parental attachment is their differential impact on adolescent adjustment. Allen, Hauser, Bell, and O'Connor (1994) report that fathers have a greater impact on adolescent well-being than mothers. Similarly, Rice et al. (1997) found that attachment to fathers was a better predictor than maternal attachment of social adjustment and self-efficacy for adolescent males. However, for females in that study, both parental attachments were strong predictors. Kenny, Lomax, Brabeck and Fife (1998) found that both maternal and paternal attachment at grade eight contributed to longitudinal changes in psychological well-being for males, but not for females. On the other hand, Kenny and Gallagher (2002) found that for both girls and boys there were similar relationships between paternal and maternal attachment and instrumental and social/relational competence.

A number of studies have focussed on age differences in parental attachment relationships. Paterson, Field and Prior (1994) found that while females continue to utilise their mothers for support in late adolescence, males decreased their reliance on mothers for support and proximity. Papini et al. (1991), however, found that as girls mature they perceive less closeness to both parents while boys actually feel closer to mothers and less attached to fathers. Others have shown that older adolescent girls perceive their fathers as less available than do younger girls, and report being less dependent on their fathers than mothers (Lieberman, Doyle, & Markiewicz, 1999). A Dutch study of mid-adolescents (van

Wel, Linssen, & Abma, 2000) found that the relationship between girls and parents was less positive and had greater negative consequences for psychological well-being than for males.

Despite the argument that parents remain the primary attachment figures in adolescence (Hazan & Zeifman, 1994), the equivocal research findings makes it difficult to conclude that there is certainty about the relative contributions of maternal and paternal attachment to the psychological health of adolescents. Further, these potential differences have not generally been examined in the context of the broader and developing attachment network of adolescents. It is central to the developmental view of attachment that adolescence is seen as a period where attachment networks expand beyond the immediate family (Bowlby, 1988; Doherty & Feeney, 2004). Several studies have established that close friends may serve as important attachment figures among adolescents and young adults (Burhmester, 1992; Doherty & Feeney, 2004; Hazan & Zeifman, 1994; Trinke & Bartholomew, 1997). The importance of close friendships in adolescence is demonstrated by evidence that positive peer relationships are linked to increased psychological health and self-esteem and a decreased risk of emotional and behavioural problems (Armsden & Greenberg, 1987; Youniss & Smollar, 1985). While some authors have concluded that peer attachment relationships are more important than parental relationships for adolescent well-being (e.g., Laible, Carlo, & Raffaelli, 2000), others have argued that the quality of parental attachments remain critical for adolescent mental health (Raja, et al., 1992). In a series of studies, Wilkinson (2004) found that the quality of parental and peer relationships impacted on different aspects of adolescent psychological health. While positive parental attachment was directly associated with decreased depression and increased self-esteem, self-esteem fully

mediated the relationship of peer attachment to depression.

Overall, there is a dearth of research examining the joint impact of parental and peer attachment on adolescent psychological health outcomes and the little that there is has been inconsistent. In part, this may be due to a failure to take into account shifts in adolescent attachment relationships over time. Hazan and Zeifman (1994) found that from childhood to late adolescence attachment orientation moved from parents towards peers, and that for older adolescents there was a clear preference for peers for some aspects of attachment. Allan and Land (1999) argue that peers increasingly take on the role of attachment relationships by mid-adolescence and by late adolescence long term relationships can be formed (e.g., romantic partners) which serve as 'complete' attachment figures.

There is good evidence, then, that peers are increasingly utilised as attachment figures as adolescents undertake the task of developing independence from parents. However, although this change is sometimes viewed as a *transfer* of attachment (e.g., Doherty & Feeney, 2004; Fraley & Davis, 1997; Hazan & Zeifman, 1997), previous attachment relationships are not completely forsaken for these new attachment figures. Research indicates that family bonds are not supplanted by friendships in adolescence (Greenberg, et al., 1983; Paterson et al., 1994) and it can be argued that there is not a complete withdrawal of attachment from parents in favour of peers. While there is a developmental shift of some components of attachment from parents to peers, parents remain primary attachment figures until late adolescence (Hazen & Zeifman, 1994) and attachment to parents remains important into adulthood (Doherty & Feeney, 2004).

*The Present Study*



While the evidence is clear that attachment networks expand beyond the immediate family in adolescence, it is not clear what the consequences of this are for current parental relationships and psychological health. Previous research has linked self-esteem and depression to the quality of either parental or peer relationships (e.g., Paterson et al., 1994; Wilkinson, 2004) but has not compared the relative influence of maternal, paternal, and peer attachments for adolescents according to sex and age.

A number of hypotheses are proposed with regard to the specific psychological health impacts of age and sex differences in relationships during adolescence. Following Wilkinson (2004) it is predicted that the quality of peer attachments will have a similar and significant influence on self-esteem for both younger and older adolescents. However, based on the argument that the influence of parental attachments diminishes through adolescence with respect to adolescent identity (Benson et al., 1992), the quality of parental attachment is predicted to have a larger influence on self-esteem for younger than older adolescents. With regard to depression, it is predicted that parental attachment will have an influence on depression irrespective of the adolescents age (Wilkinson, 2004). However, because peer attachments become increasingly important for emotional support as adolescence progresses (Hazan & Zeifman, 1994), it is expected that peer attachment will have a stronger influence on depression for older adolescents than younger adolescents.

The existing evidence with respect to sex differences in the effect of maternal, paternal, and peer attachments appears quite contradictory but on balance there appears some evidence to support the existence of a sex identification or 'allegiance' effect (Rice et al., 1997) such that maternal relationships are more influential for girls and paternal

relationships are more influential for boys with respect to psychological health outcomes. No specific differences with regard to gender and the effect of peer attachment on adjustment are predicted, although it is expected that the strength of peer attachment will be more associated with self-esteem than depression.

## Method

### *Participants*

Participants were 615 (291 females, 324 males) volunteer high school students attending schools in the Australian Capital Territory. Ages for girls ranged from 14 to 18.5 years (Mean = 16.5,  $SD = 0.94$ ) and for boys ranged from 13.5 to 18.7 years (Mean = 16.4,  $SD = 0.80$ ).

Participants predominantly lived in intact families (80%) with 18% from single-parent families and a further 2% from other situations. Almost all parents were employed and, based on occupational status, were of middle to upper socio-economic status.

### *Procedure and Measures*

A questionnaire package that included the following measures was administered to classes of students in normal class time.

*Attachment.* Quality of adolescent attachment was assessed using a modified version of the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987). Fifteen items each separately assessed mother, father, and peer attachment quality. Respondents rated each item using a five point scale ranging from “almost never or never” (1) to “always or almost always” (5) to indicate the degree to which the items were true. Scale scores were the sum of items and high scores indicated greater perceived attachment. Internal consistencies

for the scales were high (Mother Attachment  $\alpha = .91$ , Father Attachment  $\alpha = .92$ , Peer Attachment  $\alpha = .85$ ).

*Depression.* A 10-item scale was used to assess depressive symptoms during the past month (Wilkinson, 2004). Example items include, "I've felt sad or unhappy" and "I've had trouble concentrating". Respondents were asked to indicate how often they had experienced that symptom in the last month using a 3-point scale (1 = never, 2 = some of the time, 3 = a lot of the time). The scale score was derived by summing items and higher scores indicate greater depression. Internal consistency of the scale was high ( $\alpha = .81$ ).

*Self-Esteem.* Self-esteem was measured using the 16-item Self-Liking/Self-Competence Scale – Revised (Tafarodi & Swann, 2001). A five-point rating scale was used to indicate the extent to which participants agreed with each item description (1 = "strongly disagree" to 5 = "strongly agree"). An overall Self-Esteem score was calculated by summing the items and higher scores indicate high self-esteem. The reliability of the overall scale was high ( $\alpha = .90$ ).

## Results

Five cases were identified as either univariate or multivariate outliers and were excluded leaving a total of 610 cases. To investigate age differences, participants were divided into younger (14 to 16.49 years,  $n = 309$ ) and older (16.5 to 18.5 years,  $n = 301$ ) groups on the basis of a median split. Descriptive statistics categorised by Sex and Age are presented in Table 1.

Prior to investigating hypothesised differences in covariation, two 2 X 2 MANOVAs were conducted in order to explore differences in mean levels of psychological health and attachment. Firstly, Depression and Self-Esteem were specified as dependent variables in

relation to Sex (Female versus Male) and Age (Younger versus Older). There were significant differences between males and females,  $F(2,605) = 22.19, p < .001$ , Wilks' Lambda = 0.93, partial  $\eta^2 = .07$ , and between younger and older adolescents,  $F(2,605) = 7.28, p < .001$ , Wilk's Lambda = 0.98, partial  $\eta^2 = .02$ . The interaction between Sex and Age was not significant. The follow-up  $F$  tests revealed that, consistent with prior research, adolescent females scored higher on Depression ( $M = 19.49$ ),  $F(1,606) = 10.84, p < .001, \eta^2 = .02$ , and lower on Self-Esteem ( $M = 48.96$ ),  $F(1,606) = 44.41, p < .001, \eta^2 = .07$ , than adolescent males ( $M = 18.43$  and  $54.28$  respectively). Further, younger adolescents reported significantly less Depression ( $M = 18.36$ ),  $F(1,606) = 13.98, p < .001, \eta^2 = .02$ , and more Self-Esteem ( $M = 52.66$ ),  $F(1,606) = 6.79, p < .009, \eta^2 = .01$ , than older adolescents ( $M = 19.56$  and  $50.58$  respectively). There were no significant interaction effects.

In the second MANOVA, Mother, Father, and Peer Attachment were entered as dependent variables with Sex (Female versus Male) and Age (Younger versus Older) as independent variables. There were significant differences between males and females,  $F(3,588) = 58.91, p < .001$ , Wilks' Lambda = 0.77, partial  $\eta^2 = .23$ , and between younger and older adolescents,  $F(3,588) = 4.09, p = .007$ , Wilk's Lambda = 0.98, partial  $\eta^2 = .02$ . The interaction was not significant. Follow-up  $F$  tests revealed that, in line with previous research, adolescent girls scored higher on Peer Attachment ( $M = 58.22$ ),  $F(1,590) = 151.23, p < .001, \eta^2 = .20$ , than boys ( $M = 49.56$ ) and younger adolescents reported less Peer Attachment ( $M = 53.08$ ),  $F(1,590) = 8.45, p < .01, \eta^2 = .01$ , than older ( $M = 54.70$ ) adolescents. Contrary to

expectations, there were no significant differences for either Mother or Father Attachment with regard to Sex or Age. There were no significant interaction effects.

Correlations between the variables of interest are presented in Table 2. The correlation between Depression and Self-Esteem was moderate and negative ( $r = -.541$ ) as expected. The relationship between Sex and Peer Attachment ( $r = -.445$ ) was consistent with the MANOVA results. All of the attachment variables were significantly associated with the psychological health variables of Depression and Self-Esteem. Father Attachment had the strongest relationship with Depression ( $r = -.354$ ) while Mother Attachment was most strongly associated with Self-Esteem ( $r = .325$ ). The correlations between Mother, Father, and Peer Attachment, although significant, were lower than expected given that they are all measures of attachment.

#### *Multiple Regression Analyses*

The focus of the regression analyses was on examining the hypothesised differences in the effects of individual independent variables on psychological outcomes for different groupings of adolescents. Thus, separate models regressing the attachment variables (Mother, Father, and Peer) on the two outcome measures (Depression or Self-Esteem) were developed; one set for younger and older adolescents (Table 3), and the other for boys and girls (Table 4). For each regression equation relevant control variables, either Sex or Age, were also included to partial out possible confounding covariance. Planned comparisons of relevant  $\beta$  weights were then conducted using the Fisher Z procedure and confirmed by comparisons of the slopes (Howell, 2002).

Results for the separate regression models predicting Self-Esteem for younger and older adolescents are presented in Table 3. Mother Attachment, Sex, Peer Attachment, and Father Attachment all significantly predicted Self-Esteem for younger adolescents. A total of 30% of the variance in Self-Esteem scores was accounted for. For older adolescents, 18% of the variance in Self-Esteem scores was accounted for by Sex, Peer Attachment, and Mother Attachment. Father Attachment did not significantly predict Self-Esteem for older adolescents in the context of the other relationship variables. Consistent with the hypotheses, Mother Attachment had a significantly greater positive impact on Self-Esteem for younger than older adolescents, and Peer Attachment ratings had a similar impact on Self-Esteem scores for both older and younger adolescents. Contrary to predictions, Father Attachment did not have a stronger relationship with Self-Esteem for younger than older adolescents.

With regards to Depression, all of the independent variables, except for Peer Attachment, were significant and negative predictors for the younger adolescents. A total of 23% of the variance was accounted for. For the older adolescents, all of the independent variables were significant, negative predictors but slightly less variance in Depression was accounted for (17%). In support of the predictions, Peer Attachment had a stronger ameliorating effect on Depression for older than younger adolescents. As predicted, there was no significant difference in the role of Mother or Father Attachment in depression for the two groups.

The results for the models predicting self-esteem separately by Sex are presented in Table 4. Age had no significant impact on Self-Esteem for either boys or girls. For girls, while Mother and Peer Attachment both impacted positively on Self-Esteem, Father Attachment

was not a significant predictor. The model accounted for 22% of the variance in Self-Esteem scores for girls. For boys, all three attachment variables were significant predictors of Self-Esteem and were similar in magnitude. The model accounted for 15% of the variance Self-Esteem. Regression weight comparisons partially supported the predictions with regards to parental attachments. Mother Attachment was a more important predictor of Self-Esteem for females than males. Neither Father Attachment nor Peer Attachment were significantly different in the two models.

From Table 4 it can be seen that for adolescent girls all of the attachment relationships were negatively associated with Depression and there were no age effects. Of the predictor variables, Maternal Attachment evinced the largest relationship with Depression. Overall, a modest 24% of the variance in Depression scores was accounted for. For boys the situation was a little different in that only Paternal Attachment was significant and the model accounted for only 18% of the variance in depression . Peer Attachment was a more important predictor of Depression for girls than boys and, as expected, Mother Attachment had a significantly greater impact on Depression for girls and Father Attachment had a significantly greater impact for boys.

### Discussion

The results of this study provide evidence that there are age and gender differences in the way that different attachment relationships impact on psychological health in adolescents. The application of a developmental attachment transfer analysis to these relationships and their roles in psychological adjustment was largely supported. The results indicate that the

attachment transfer effect can be best demonstrated by examining the influence of attachment relationships on psychological health outcomes rather than focussing on mean levels of quality of attachment relationships.

Studies that assess adolescent psychological health typically find that girls report more depression and less self-esteem than boys and the results of this study are no different. These differences do not appear to be a function of stage of adolescence, however, as neither depression nor self-esteem deteriorated specifically for girls compared to boys. Overall, younger adolescents reported less depression and higher self-esteem, supporting the view that the experience of the adolescent becomes increasingly affected by self-doubts, negative views of self and the world, and increased perceptions of stress and hopelessness as they move towards adulthood.

Also consistent with previous research, increased levels of peer attachment were found for older adolescents and girls. Older adolescents reported higher levels of peer attachment than younger adolescents, supporting the view that as adolescents develop attachment networks begin to expand beyond the immediate family. Girls also reported higher levels of peer attachment than boys. However, this sex difference was similar for both older and younger adolescents indicating that girls did not become differentially more orientated towards peers than boys. Consistent with previous research, the increase in peer attachment did not appear to be associated with decreases in parental attachments. Older adolescents, although reporting higher levels of peer attachment, did not report lower levels of parental attachment. Thus, it can be argued that the development of new, extra-parental attachment relationships in adolescence are not at the expense of the quality of existing close



interpersonal relationships. Further, unlike the evidence from some previous research (e.g., Papini et al., 1991), adolescent girls did not report any less quality of relationship with either parent than adolescent boys. There was no evidence for either a same or opposite sex bias with regard to child—parent attachment quality.

The initial examination of the bivariate correlations prior to the regression analyses revealed that, as expected, the relationship between Depression and Self-esteem was inverse and, though moderate to strong ( $r = -.54$ ), not high enough to indicate that these measures were assessing the same construct. The correlations also indicated that the quality of attachment measures evinced weak to moderate relationships with depression and self-esteem. The relationships between the three measures of attachment were surprisingly low ( $r < .3$ ), indicating that there were considerable intra-individual variations in the responses with regard to relationship quality with mothers, fathers, and peers. The lack of relationship between these indicators of attachment quality provide evidence that a reliance on global measures of attachment security/insecurity may be problematic for understanding how networks of close interpersonal relationships impact on adolescent adjustment.

Overall, the results of the regression analyses replicated previous research demonstrating that both parental and peer relationship quality have positive but modest affects on psychological health and self-esteem in adolescence. The amount of variance explained by any singular attachment measure ranged from a low of 0.3% to a high of 9.7%. However, the results also indicate that these impacts vary as a function of the aspect of psychological health assessed, the sex of the adolescent, and their age. When comparing the models for predicting either self-esteem or depression across age and sex, the models for younger

adolescents and females explained the most variance.

### *Age Differences*

There was clear support for the hypothesised age differences in the influence of attachment relationships on psychological adjustment. Peer attachments had a similar and significant influence on self-esteem for both age groups supporting the view that an extended attachment network has begun to emerge and influence self-concept by early adolescence. The influence of maternal attachment on adolescent identity, though, had begun to wane for older adolescents and this relationship was significantly more important for self-esteem in younger adolescents. There was also some evidence of the declining influence of paternal attachment on self-esteem in that father attachment was a significant predictor of self-esteem for younger adolescents but not older adolescents. It may be argued that more weight should be placed on the evidence with regard to maternal than paternal attachment. Although often a contentious issue in developmental psychology, the attachment literature has generally argued that mothers are preferred as the primary attachment figure when available, even though they may not be as responsive or sensitive as others in their environment (Karen, 1995). Trinke and Bartholomew (1997) and Doherty and Feeney (2004), in their studies of hierarchies in adolescent and adult attachment networks, found that participants consistently ranked mothers above fathers in terms of the attachment relationship.

All of the hypotheses with regard to changes in the influence of attachment relationships on depression were supported. Consistent with the view that attachment to peers become more important for adolescent emotional adjustment over adolescence, the

quality of peer attachment was not predictive of depression for younger adolescents but was for older adolescents. Further, the difference in the weights was also significant. Thus, not only does the quality of adolescent peer attachments increase for older adolescents, as indicated by higher mean levels, but the importance of these relationships for emotional health also increases. The role of parental attachments were also as expected with regard to age differences in the prediction of depression. Both mother and father attachment were significant predictors of depression and the magnitude of these relationships were not significantly different across age groups. There was a trend, however, for both to have a greater impact on depression for younger adolescents. This is consistent with the predictions in that the developmental withdrawal of attachment from parental relationships are expected to be gradual. Extrapolating the findings, it might be expected that for older adolescents moving into young adulthood (18 to 20 years) the transfer of attachment to significant peers would be more advanced and the quality of parental relationships would have significantly less impact on depression.

#### *Sex Differences*

The results with regard to sex differences were supportive of the hypotheses in relation to a sex identification effect. With respect to both self-esteem and depression, maternal attachment ratings had a greater influence on girls adjustment and paternal attachment had a greater influence on boys adjustment. Importantly, these differences were not revealed when just examining the mean levels of parental attachments. These results are important in that they are contrary to the view that maternal attachments are more influential and important for psychological adjustment than other relationships in the attachment network.

Although no specific hypotheses were posited with regard to sex differences in the influence of peer attachment to psychological health, it was expected that peer attachment would be more associated with self-esteem than depression. This was only partially confirmed in that peer attachment emerged as a significant predictor of self-esteem for both girls and boys but was also a significant predictor of depression for girls but not boys. This latter finding is consistent with the finding that mean levels of peer attachment ratings were higher for girls than boys and is similar to the age effect for peer attachment and depression reported above.

### *Integration*

To summarise, the results support the view that attachment transfer across adolescence is a gradual process that has implications for the role of parental and peer relationships beyond the mean level of self-reported quality of relationship. Peer attachments remain important for adolescent identity irrespective of age but the role of parental relationships in adolescent self-concept declines across adolescence. On the other hand, while parental relationships remain important predictors of adolescent emotional adjustment through adolescence, peer attachments emerge as increasingly influential factors in adolescent depression.

Gender differences in the influence of parental relationships on psychological health and self-esteem, however, may be a more complex process and entail more factors than attachment transfer. Previous research in this area has painted a confused picture of adolescent—parent relationships. This inconsistency may, in part, be attributed to developmental differences in the samples investigated and to a failure to consider similar kinds of outcomes with respect to these relationships. Research that has examined the role of

parental relationships on identity development in adolescence has generally found that, for both girls and boys, relationships with mothers play a more important role (Benson, et al., 1992; Matos, Barbosa, De Ameida, & Costa, 1999). However, the extent to which identity factors then go on to influence psychological health and adjustment has not been examined.

There is surprisingly little research that has focussed on gender differences in the *impact* of parental relationships on adolescent adjustment and the little that there is has often focussed on samples of separated and intact families (e.g., Bishop & Ingersoll, 1989). The evidence reported here indicates that more work needs to be done to clarify associations between the sex of child and the sex of parent in terms of the impact of these dyadic relationships within intact families. Importantly, the findings with regard to the role of same-sex child—parent quality of relationship needs to be replicated.

Additionally, individual differences should be considered in future research. Fraley and Davis (1997) argue that individual attachment propensities, such as attachment style, mediate the development and transfer of attachment functions. They found that young adults with secure relationship expectations were more likely to explore peer relationships and to enter successfully into new attachment relationships. It is likely that attachment style, as an indicator of stable, general relationship expectations, affects the trajectory of attachment transfer. Adolescents with an insecure style will feel less able to explore new relationships and, thus, the development and transfer attachment relationships with peers may be impeded.

### *Limitations*

This study used a cross-sectional design and this naturally limits conclusions with respect

to causal inferences. A longitudinal design that enabled an analysis of intra-individual changes in relationships from early to late adolescence would be a more potent method for revealing developmental changes, particularly if a more extended period of adolescence and young adulthood was examined. Future research should examine longitudinal changes in the impact of these important attachment relationships from the beginnings of puberty at around 12 years to the beginnings of life as a young adult after high school (18 to 21 years). Although the beginning of adolescence is usually defined by changes associated with puberty, the end of adolescence is socially defined. There is increasing evidence that for many families in western societies an 'extended adolescence' is occurring. Compared to previous generations, children increasingly live at home, do not marry, and do not have children of their own until they are older (Kimmel & Weiner, 1995). Whether such an extended adolescence entails a concomitant extended period of parental attachment and underdeveloped peer relationships remains to be determined.

Although a general attachment transfer analysis has been applied in this study, no attempt was made to distinguish between specific attachment functions (Doherty & Feeney, 2004; Fraley & Davis, 1997; Hazan, & Zeifman, 1994). To fully evaluate the impact of the developing extended attachment network in adolescence, and any accompanying changes in attachment functions, further research should employ specific measures assessing the contribution of the four attachment functions (proximity seeking, safe haven, separation protest, and secure base) in each class of relationship. It would also be beneficial to go beyond the two indices of adjustment assessed here and examine a wider range of possible outcomes, such as social competence, school attitudes and adjustment, sexual activity and

risk-taking. It is likely that attachment relationships will vary in their importance for different classes of outcome and these effects will change as a function of adolescent development.

This study has limited the examination of the adolescent attachment network to parents and peers but the importance of other relationships, such as siblings, 'best' friends and romantic relationships, should also be considered from this perspective. The role of romantic relationships in adolescence remains controversial. Some authors have argued that they have an important positive role in psychological health (e.g., Collins, 2003) while others have found that they can have predominantly negative impacts on adolescent well-being (e.g., Davila, Steinberg, Kachadourian, Cobb, & Fincham, 2004). It is likely that by assessing attachment functions associated with particular kinds of romantic relationships in adolescence their role in adaptive adjustment can be clarified.

### *Conclusions*

This study has demonstrated that when placed in the developmental context of adolescence, the changing roles of parental and peer attachments become revealed. Although adolescents develop new relationships that begin to provide some of the benefits of psychological attachments, particularly with regard to the maturing self-concept, parents remain important sources of emotional support through to late adolescence. Although much of the literature has emphasised the primacy of maternal relationships, the evidence from this study indicates that paternal relationships are also important for the self-esteem and psychological health of adolescence, particularly adolescent boys. There is an increasing debate about the roles of mothers and fathers in contemporary families. By overlooking the

specific contributions of different aspects of attachment on different kinds of outcome, we run the risk of underestimating the important contributions that these relationships can make to a positive experience of adolescence.

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Table 1

*Means and Standard Deviations for Depression, Self-Esteem, Mother, Father, and Peer Attachment by Age and Sex*

|                   | Younger  |           |          | Older    |           |          |
|-------------------|----------|-----------|----------|----------|-----------|----------|
|                   | <i>M</i> | <i>SD</i> | <i>n</i> | <i>M</i> | <i>SD</i> | <i>n</i> |
| Depression        |          |           |          |          |           |          |
| Female            | 18.97    | 3.90      | 137      | 20.00    | 3.80      | 152      |
| Male              | 17.74    | 3.84      | 172      | 19.11    | 4.25      | 149      |
| Self-Esteem       |          |           |          |          |           |          |
| Female            | 49.89    | 9.73      | 137      | 48.02    | 9.52      | 152      |
| Male              | 55.43    | 10.42     | 172      | 53.13    | 9.56      | 149      |
| Mother Attachment |          |           |          |          |           |          |
| Female            | 54.38    | 12.85     | 135      | 54.44    | 13.15     | 149      |
| Male              | 53.89    | 10.82     | 166      | 52.81    | 12.22     | 144      |
| Father Attachment |          |           |          |          |           |          |
| Female            | 47.21    | 12.89     | 135      | 46.83    | 14.58     | 149      |
| Male              | 50.63    | 11.33     | 166      | 46.92    | 12.74     | 144      |
| Peer Attachment   |          |           |          |          |           |          |
| Female            | 57.41    | 8.18      | 135      | 59.03    | 8.03      | 149      |
| Male              | 48.76    | 8.66      | 166      | 50.37    | 9.26      | 144      |

Table 2

*Correlations, Means, Standard Deviations, and Internal Consistencies for Variables in the Analysis*

| Variable             | 1.      | 2.      | 3.      | 4.     | 5.     | 6.     | 7.    |
|----------------------|---------|---------|---------|--------|--------|--------|-------|
| 1. Sex               | ---     |         |         |        |        |        |       |
| 2. Age               | -.086*  | ---     |         |        |        |        |       |
| 3. Depression        | -.142** | .117**  | .823    |        |        |        |       |
| 4. Self-Esteem       | .266**  | -.113** | -.541** | .904   |        |        |       |
| 5. Mother Attachment | -.031   | -.016   | -.308** | .325** | .912   |        |       |
| 6. Father Attachment | .073    | -.096*  | -.354** | .271** | .299** | .919   |       |
| 7. Peer Attachment   | -.445** | .126**  | -.145** | .103*  | .257** | .183** | .847  |
| Mean                 | ---     | 16.47   | 18.91   | 51.78  | 53.79  | 47.99  | 53.53 |
| Standard Deviation   | ---     | 0.87    | 4.02    | 10.24  | 12.33  | 12.94  | 9.62  |

*Note* Internal consistencies (Cronbach's  $\alpha$ ) on the diagonal, \* $p < .05$ , \*\* $p < .01$

Table 3

*Multiple Regression on Self-Esteem and Depression: Younger versus Older Adolescents*

| Variables          | Younger      |         | Older        |         | z     |
|--------------------|--------------|---------|--------------|---------|-------|
|                    | B(SE)        | $\beta$ | B(SE)        | $\beta$ |       |
| <i>Self-Esteem</i> |              |         |              |         |       |
| Sex                | 4.112(.717)  | .323*   | 4.610(.741)  | .375*   | ---   |
| Mother Attachment  | .178(.028)   | .329*   | .077(.028)   | .158*   | 2.21† |
| Father Attachment  | .074(.027)   | .143*   | .046(.026)   | .102    | 0.05  |
| Peer Attachment    | .147(.039)   | .219*   | .127(.040)   | .199*   | 0.25  |
| <i>Depression</i>  |              |         |              |         |       |
| Sex                | -1.230(.463) | -.157*  | -1.535(.487) | -.191*  | ---   |
| Mother Attachment  | -.083(.018)  | -.249*  | -.052(.018)  | -.164*  | 1.08  |
| Father Attachment  | -.093(.018)  | -.288*  | -.062(.017)  | -.209*  | 1.02  |
| Peer Attachment    | -.030(.024)  | -.072   | -.086(.026)  | -.207*  | 1.67† |

Note Self-Esteem - Younger model  $R^2 = .30$ , Older model  $R^2 = .18$ . Depression - Younger model  $R^2 = .23$ , Older model  $R^2 = .17$ . \*  $p < .05$ . † Critical value for one-tailed Fisher's  $z = 1.65$  at  $p < .05$ .



Table 4

*Multiple Regression on Self-Esteem and Depression: Female versus Male Adolescents*

| Variables          | Females     |         | Males       |         | z                   |
|--------------------|-------------|---------|-------------|---------|---------------------|
|                    | B(SE)       | $\beta$ | B(SE)       | $\beta$ |                     |
| <i>Self-Esteem</i> |             |         |             |         |                     |
| Age                | -.485(.345) | -.074   | -.476(.410) | -.063   | ---                 |
| Mother Attachment  | .149(.025)  | .312*   | .087(.027)  | .169*   | -1.84 <sup>†</sup>  |
| Father Attachment  | .033(.025)  | .075    | .095(.030)  | .191*   | 1.43                |
| Peer Attachment    | .179(.043)  | .235*   | .104(.038)  | .155*   | 1.00                |
| <i>Depression</i>  |             |         |             |         |                     |
| Age                | .475(.214)  | .116    | .268(.274)  | .053    | ---                 |
| Mother Attachment  | -.092(.017) | -.308*  | -.026(.021) | -.074   | -2.95 <sup>††</sup> |
| Father Attachment  | -.047(.015) | -.168*  | -.121(.020) | -.358*  | 2.47 <sup>†</sup>   |
| Peer Attachment    | -.092(.026) | -.193*  | -.025(.025) | -.055   | 1.70 <sup>†</sup>   |

Note Self-Esteem - Female model  $R^2 = .22$ , Male model  $R^2 = .15$ . Depression - Female

model  $R^2 = .24$ , Male model  $R^2 = .18$ . \*  $p < .05$ . <sup>†</sup> Critical value for one-tailed Fisher's  $z =$

1.65 at  $p < .05$ . <sup>††</sup> Critical value for two-tailed Fisher's  $Z = 1.96$  at  $p < .05$ .