Facial Attractiveness and Self-Esteem in Adolescence

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Facial attractiveness has been associated with many (social) advantages in life, like greater popularity, acceptance, and social competence. Because social evaluations and acceptance are important factors contributing to self-esteem (SE), we hypothesized that high levels of attractiveness would be related to increased levels of SE. To test this assumption, 230 adolescents from two age groups (13 and 15 years) were surveyed annually for 5 years. A latent growth curve model was used to model the influence of facial attractiveness on the development of SE over time. Results showed that younger adolescents with higher levels of attractiveness had lower levels of SE at baseline. Attractiveness was not found to be a significant predictor in explaining the development of SE over time. These findings indicate that attractive children are more likely to have lower levels of SE when they enter early adolescence compared to their less attractive counterparts.

Physical attractiveness has been shown to be associated with many benefits, such as better health (Kalick, Zebrowitz, Langlois, & Johnson, 1998; Singh, 1993), higher physical fitness (Hönekopp, Bartholomé, & Jansen, 2004), higher salary (Harper, 2000; Mobius & Rosenblat, 2006), more successful careers (Hosoda, Stone-Romero, & Coats, 2003), greater reproductive success (Singh, 1993), and even longer life expectancy (Henderson & Anglin, 2003). Perhaps the most important advantages of physical attractiveness can be identified through social interactions. In everyday social exchanges, attractive individuals elicit reactions from others that are more favorable compared to less attractive individuals. For example, attractive individuals are seen as more trustworthy (Mulford, Orbell, Shatto, & Stockard, 1998) and more socially competent (Eagly, Ashmore, Makhijani, & Longo, 1991). This attribution of positive features to attractive individuals often seems to happen at a subconscious level (Leeuwen & Macrae, 2004), indicating that people have a strong innate tendency to judge attractive individuals more positively than less attractive individuals. In addition, the actual social skills of attractive people appear to be better developed compared to those of less attractive individuals (e.g., Goldman & Lewis, 1977; Mobius & Rosenblat, 2006; Reis et al., 1982).

Social advantages of attractiveness have been found not only in adults but also in children and adolescents. For instance, when children attend school, teachers seem to accept more attractive children rather than their less attractive counterparts (Martinek, 1981), and they seem to consider attractive children as having higher academic abilities and adjustment skills (Lerner & Lerner, 1977). Teachers also consider attractive children more popular among their peers in comparison to their less attractive classmates (Clifford & Walster, 1973). Not only teachers but also peers appear to treat attractive children differently. Attractive adolescents are more accepted (Salvia, Sheare, & Algozzine, 1975), more liked (Cavior & Dokecki, 1973; Lerner & Lerner, 1977), and more popular among their peers (Dion & Berscheid, 1974) as well. To summarize, ample research reveals that the social evaluation of a person by others depends partly on the attractiveness of that person.

Attractive adolescents are likely to receive more positive feedback from their social environment. This might...
partially explain differences in (social) development of more and less attractive adolescents. An important aspect of development in adolescence is self-esteem (Harter, 1990b). Self-esteem depends, largely, on the acceptance and appreciation received from others. For example, the Sociometer Theory (Leary, Tambor, Terdal, & Downs, 1995) states that self-esteem marks the degree to which a person is being included or excluded by other people. In a similar vein, the Terror Management Theory (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004) states that self-esteem is a culturally defined concept that depends on the degree to which individuals are valued by others. Thus, individuals owe their high levels of self-esteem partly to being positively evaluated by their social surroundings. Social evaluations are often made based on the way people look, especially based on their perceived facial attractiveness (Willis & Todorov, 2006). Because first impressions are based largely on a person’s appearance, we would expect a positive link between attractiveness and self-esteem.

It is important to study self-esteem in relation to attractiveness in adolescence, because this is a period when children go through many changes, from changes in appearance (Hales, Yudofsky, & Gabbard, 2008; Williams & Currie, 2000) to development of cognitive abilities (Harter, 1990a; Piaget, 2001). Individual differences in attractiveness seem to be an important factor in determining the developmental path of self-esteem during adolescence (Zimmerman, Copeland, Shope, & Dielman, 1997). However, studies on attractiveness in relation to self-esteem show mixed results. A number of studies examined the association between objective attractiveness (i.e., attractiveness as rated by independent judges), and self-esteem (Lerner & Karabenick, 1974; Mathes & Kahn, 1975; Salvia et al., 1975; Zakin, Blyth, & Simmons, 1984). Most studies show a positive association between attractiveness and self-esteem, indicating that attractive adolescents are likely to have high self-esteem (Mathes & Kahn, 1975; Salvia et al., 1975). However, Lerner and Karabenick (1974) found no association between attractiveness and self-esteem in late adolescents. Zakin et al. (1984) even found a negative effect of attractiveness on self-esteem in early adolescent girls. This finding could indicate that in terms of self-esteem, adolescent girls who are rated as being more attractive by others react more negatively to puberty than less attractive adolescent girls. A small number of recent studies also examined the link between self-reported attractiveness and self-esteem in early and late adolescence (Davison & McCabe, 2006; Thornton & Ryckman, 1991; Wade, 2000; see the appendix for an overview of studies on attractiveness and self-esteem). Self-reported attractiveness showed a consistent positive association with self-esteem across these studies.

The aforementioned studies have some limitations. First, all of these studies used cross-sectional data, which prohibits them from drawing conclusions about the development of self-esteem during adolescence. A second limitation is the frequent use of self-reported measures of attractiveness. There is some evidence that self-reports are not a reliable indicator of the actual attractiveness of individuals, as correlations between self and other perceptions of attractiveness are low (e.g., \( r = .04 \); Davis, Shuster, Dionne, & Claridge, 2001). These low correlations indicate that self and other perceptions of attractiveness might reflect different constructs. Some studies used measures of attractiveness that were more objective (e.g., other-report instead of self-report), but these measures had low reliability due to a small number of judges (Mathes & Kahn, 1975; Salvia et al., 1975; Zakin et al., 1984). Obviously, more research using longitudinal designs and high-quality, objective methods of measuring attractiveness is needed to determine the relation between attractiveness and self-esteem in adolescence.

Therefore, in the present study, we examined the association between attractiveness and self-esteem. In contrast to previous studies, we used a longitudinal design to capture the development of self-esteem during adolescence (Figure 1). Also, our measure of attractiveness was based on the reports obtained from multiple judges. In addition, we added body mass index (BMI), which is known to be related to attractiveness and self-esteem, as a predictor (Hesketh, Wake, & Waters, 2004; Hume & Montgomerie, 2001; O’Dea, 2006). Based on previous findings, we hypothesized that (a) attractive adolescents would have higher self-esteem in early adolescence (Mathes & Kahn, 1975; Salvia et al., 1975) and that (b) these attractive adolescents would retain high self-esteem throughout adolescence. Due to a positive feedback received from social interactions, we predicted

![FIGURE 1 Conceptual model between facial attractiveness and self-esteem (SE).](Image)
that the positive effects of attractiveness on self-esteem would increase over time.

**METHOD**

Participants

The majority of the participating adolescents were of Dutch origin (>95%). At the first wave (T1), the age of the older sibling ranged from 14 to 16 years ($M = 15.05, SD = .59$). The age of the younger sibling ranged from 13 to 15 years ($M = 13.30, SD = .48$). Gender of both older and younger siblings was almost equally divided, with 47.8% of the older and 49.6% of the younger siblings being girls at the first wave. At the first wave, approximately one third of all adolescents attended special or low education (29.3%) and one third attended an intermediate general education (34.9%). The remaining one third attended the highest level of secondary school, which is preparatory college and university education.

An attrition analysis was conducted to test whether adolescents who participated in this study differed from those in the larger sample. A logistic regression analysis showed that younger adolescents in the subsample ($n = 115$) did not differ from those in the larger sample ($n = 313$) on gender, age, and educational level. Older adolescents in the smaller sample ($n = 115$) differed from older adolescents in the larger sample ($n = 313$) in age (odds ratio = .62, $p < .05$, 95% confidence interval: .41, .96) and educational level (odds ratio = 1.39, $p < .05$, 95% confidence interval: 1.01, 1.91). Older adolescents who were older and those who attended low education were less likely to have their photographs taken. The Cox and Snell indicator of explained variance was .03, indicating that the predictor variables explained only limited variance in attrition.

Judges

Both university students and parents with adolescent children rated the attractiveness of parents and children. This was done to control for possible age effects or the possibility that individuals with children may rate attractiveness differently compared to students without children. Forty-nine parents with teenage offspring who responded to an invitation distributed at schools participated in rating the study participants. Of these parents, 49% were women. The majority of parents had either higher vocational schooling (53.1%) or lower education (38.8%). The age of the parents ranged from 38 to 59 ($M = 47.88, SD = 4.46$) years old. A researcher visited these parents at home and asked them to rate the faces accessible via Internet, password protected, by means of a computer program written in Hypertext.

After they finished the task, they were given a €20 gift voucher. As a part of their educational requirement for developmental psychology at a Dutch university, 48 college students rated the photos. Of these students, 56.3% were women, with the age of the students ranging from 19 to 32 ($M = 21.67, SD = 2.72$) years old. The students rated the faces in the Behavioural Science Institute laboratory.

Procedure

Data were collected as part of a broader longitudinal survey called the “Family and Health” project (Harakeh, Scholte, de Vries, & Engels, 2005). The study procedures were reviewed and approved by the independent ethics committee at the Radboud University Nijmegen, the Netherlands. Approximately 5,400 Dutch families with at least two children aged between 13 and 16 years were asked by mail to participate in the study. Addresses were retrieved from the records of 22 municipalities in the Netherlands. In the end, 885 families were willing to participate. Parents and participating children gave their informed consent by signing and sending back the application form. Of these families, 765 fulfilled the criteria of (a) parents being married or living together, (b) all family members being biologically related, (c) children not being a twin, and (d) children not being physically or mentally disabled. Next, a selection was made based on education levels of the adolescents and sibling dyads in the sample (i.e., boy–boy, boy–girl, girl–girl, girl–boy), resulting in an equal division of both. This resulted in the inclusion of 428 families. Both parents and two adolescent children participated from each family.

Data collection took place in five annual waves and started in November 2002. A trained interviewer visited the families, making sure all family members completed an entire questionnaire individually. The family members were not allowed to interact with each other while filling out the questionnaires. Each family received €30 for each wave after all four family members completed the questionnaire. There was a raffle after Wave 3 of the project with the prices consisting of five travel cheques worth €1,000 each. There was also a raffle after the last wave, which consisted of five travel cheques in addition to five iPods.

During the fifth wave (T5), a random selection of families was asked to be photographed by the interviewers, and 164 agreed to participate. Due to financial constraints, not all families could be photographed. Trained assistants took the photos, asking the participants to look straight into the camera while making a neutral face. Of these 164 families, 27 families had to be excluded because not all family members were present during the photo session. Further, 13 families...
were excluded to maintain maximum quality of photographs. After this selection process, 115 families were included in this study. Photographs were electronically processed using Adobe Photoshop 8. Because the presence of backgrounds is known to introduce undesirable cues that can be used by judges (Vokey, Rendall, Parr, de Waal, & Tangen, 2004), all backgrounds were made black and all photographs were turned into black and white (Kalick et al., 1998; Zebrowitz, Olson, & Hoffman, 1993). Finally, a gender indicator was added to the photographs.

**Measures**

**Facial attractiveness.** Forty-eight college students and 49 parents with children ages 13 to 16 rated 460 faces on a 7-point Likert scale ranging from 1 (unattractive) to 7 (attractive). The interrater reliability of this method has proven to be high (e.g., $z = .90$) in samples of adults rating adolescent faces (Kalick et al., 1998; Zebrowitz et al., 1993). Also, the validity of this method has been supported by studies showing stability of this measure across cultures and congruence of this method with computerized measures (Bashour, 2006). The photographs were presented randomly on a computer monitor through the Internet using a program written in Hypertext Preprocessor, with the task being self-paced. From these ratings, mean scores were derived and used in the analyses, with a higher score reflecting a higher level of facial attractiveness. Intraclass correlations for all family members ranged from .84 to .97. Based on these correlations, average scores were computed across adult and adolescent judges and male and female judges to produce attractiveness scores with alpha reliabilities ranging from .93 to .98.

**Self-esteem.** The 10-item Rosenberg Self-Esteem Scale (Robins, Hendin, & Trzesniewski, 2001; Rosenberg, 1965) was used to assess self-reported global self-esteem of adolescents. The response categories ranged from 1 (strongly agree) to 4 (strongly disagree), and the mean scores were used in the analyses. A high mean on this scale reflected a greater self-esteem. Some examples of items are, “On the whole, I am satisfied with myself,” and the negative item, “I feel I do not have much to be proud of.” Internal consistencies were computed for older and younger children separately. Resulting Cronbach’s alphas for both adolescent children ranged from .84 to .92 across all waves. This measure of self-esteem has been commonly used and has been shown reliable (e.g., $z = .81$; Schmitt & Allik, 2005) and valid in comparison with various other measures of self-esteem (Bagley, Bolitho, & Bertrand, 1997).

**BMI.** BMI is an indicator of weight in comparison to body length. BMI was calculated based on self-reported height and weight while correcting for age and gender, resulting in $z$ scores. We used the following formula: $Z = ((BMI / M)(L − 1))/(L \times S)$ (Cole, Bellizzi, Flegal, & Dietz, 2000), in which we imputed age and gender specific values for $M$ (mean), $L$ (skewness), and $S$ (coefficient of variance) from the 1997 National Growth Study in the Netherlands (Fredriks, van Buuren, Wit, & Verloove-Vanhorick, 2000). The correlation in the present study between actually measured and self-reported weight was .95.

**Data Analyses**

First, we computed descriptive statistics. Next, we used Latent Growth Curve modelling (LGC) to examine the development of self-esteem over time. LGC is a multivariate method that captures change over time using repeated measures raw-score data. This method is used to examine intercept and slope differences over latent variables representing the initial value at baseline and the amount of change over time (T. E. Duncan, Duncan, Strycker, Li, & Alpert, 1999). In this case, the initial value (intercept) of self-esteem and the rate of change from baseline across time (slope) capture the developmental trajectory. An important benefit of LGC is that it describes the developmental trajectories for each adolescent separately, which can help identify predictors associated with individual growth differences. For these analyses, we used Mplus 5.0 (Muthén & Muthén, 1998–2006). Parameters in the models were estimated using the maximum likelihood estimator with robust standard errors (MLR) (Muthén & Muthén, 1998–2006). This estimator uses a numerical integration algorithm to obtain robust standard errors.

The LGC model was first tested without predictors to determine the development trajectory of self-esteem. Next, we tested the relationships between each individual predictor and the development of self-esteem separately. Finally, all predictors were included in order to examine the unique variance of each predictor in relation to the development of self-esteem while controlling for other variables. More specific, in this model we examined the influence of facial attractiveness on the development of self-esteem while controlling for possible confounding effects of adolescents’ BMI, gender, age, and educational level. All these models were tested separately for older and younger siblings. Model fit was assessed using following global fit indices: chi-square, comparative fit index (CFI; with a cut-off value of .95), and root mean square error of approximation (RMSEA; with a cut-off value of .06; Hu & Bentler, 1999).
Younger Adolescents
Older Adolescents

The average level of self-esteem increased significantly for self-esteem. Figure 2 illustrates the mean levels of self-esteem for older and younger adolescents over five measurement periods. T tests showed a gender difference in self-esteem, with older, $t(113) = -3.15$, $p < .01$, and younger, $t(113) = -3.42$, $p < .001$, girls considered more attractive than boys. A significant gender difference was also found in self-esteem (in most waves), with older and younger girls scoring lower on self-esteem than boys. Table 1 summarizes descriptive statistics for the model variables. Table 2 summarizes correlations between the model variables. These findings showed significant negative cross-sectional associations between self-esteem and facial attractiveness for older adolescents at T2 and for younger adolescents at T1, T2, and T3.

Developmental Trajectories of Self-Esteem

First, we tested the LGC model without predictors, which showed a good fit to the data for younger adolescents, $\chi^2(10, n = 115) = 12.94$ (CFI = .99, RMSEA = .05) and older adolescents, $\chi^2(10, n = 115) = 9.32$ (CFI = 1.00, RMSEA = .00). For younger adolescents, the intercept ($\beta = 3.04, p < .001$) and slope ($\beta = .05, p < .01$) were significant. The intercept ($\beta = 3.23, p < .001$) and slope ($\beta = .03, p < .05$) were also significant for older adolescents. These findings indicate that participants in both age groups scored, on average, higher than zero on self-esteem at baseline and that levels of self-esteem increased over time.

Second, we examined the predictive value of facial attractiveness and BMI on self-esteem while controlling for gender, age and educational level. Table 3 presents all standardized estimates and standard errors of these analyses. In the next step, all predictors and control variables were included separately to test their predictive value without accounting for other factors. These analyses showed that gender ($\beta = -0.28, p < .01$) and facial attractiveness ($\beta = -0.16, p < .05$) related significantly to the intercept in younger adolescents, suggesting that girls and more attractive adolescents have lower self-esteem. For older adolescents, only gender related significantly to the intercept ($\beta = -0.29, p < .001$). No significant associations were found with the slopes.

Finally, we tested the full model with all predictors. This model showed a good fit to the data in younger adolescents, $\chi^2(25, n = 115) = 30.56$ (CFI = .98, RMSEA = .04) and an excellent fit to the data in older adolescents, $\chi^2(25, n = 115) = 24.04$ (CFI = 1.00, RMSEA = 0.00) including gender as an interaction factor with self-esteem did not result in significant interaction results.

RESULTS

Descriptive Statistics

The descriptive statistics showed that the average level of self-esteem at baseline was relatively high in both boys and girls, with boys having higher levels of self-esteem compared to girls. The differences in means between boys and girls were tested with $T$ tests. These statistics also showed relatively low variances. However, the means and standard deviations shown in Table 1 are normative for the use of this scale in comparative populations (Robins et al., 2001). Over time, the average levels of self-esteem remained similar for older adolescents (Wilks’s $\Lambda = .94$), $F(4, 107) = 1.81$, $p = .13$, whereas the average level of self-esteem increased significantly for younger adolescents (Wilks’s $\Lambda = .88$), $F(4, 105) = 3.50$, $p = .01$.

![FIGURE 2](image-url) Mean-level differences in repeated adolescents’ reports of self-esteem.

<table>
<thead>
<tr>
<th>Boys M (SD)</th>
<th>Girls M (SD)</th>
<th>t (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Esteem t1</td>
<td>3.36 (.48)</td>
<td>3.10 (.62)</td>
</tr>
<tr>
<td>Self-Esteem t2</td>
<td>3.38 (.42)</td>
<td>3.10 (.62)</td>
</tr>
<tr>
<td>Self-Esteem t3</td>
<td>3.43 (.46)</td>
<td>3.18 (.64)</td>
</tr>
<tr>
<td>Self-Esteem t4</td>
<td>3.41 (.49)</td>
<td>3.26 (.59)</td>
</tr>
<tr>
<td>Self-Esteem t5</td>
<td>3.41 (.54)</td>
<td>3.26 (.57)</td>
</tr>
<tr>
<td>Facial Attractiveness</td>
<td>3.26 (.67)</td>
<td>3.66 (.70)</td>
</tr>
<tr>
<td>Younger Adolescents</td>
<td>Self-Esteem T1</td>
<td>3.18 (.45)</td>
</tr>
<tr>
<td>Self-Esteem T2</td>
<td>3.24 (.44)</td>
<td>2.93 (.59)</td>
</tr>
<tr>
<td>Self-Esteem T3</td>
<td>3.29 (.49)</td>
<td>2.92 (.61)</td>
</tr>
<tr>
<td>Self-Esteem T4</td>
<td>3.23 (.52)</td>
<td>3.03 (.60)</td>
</tr>
<tr>
<td>Self-Esteem T5</td>
<td>3.39 (.43)</td>
<td>3.09 (.60)</td>
</tr>
<tr>
<td>Facial Attractiveness</td>
<td>3.16 (.63)</td>
<td>3.58 (.69)</td>
</tr>
</tbody>
</table>

* $p < .05$. ** $p < .01$. *** $p < .001$. 

1Including gender as an interaction factor with self-esteem did not result in significant interaction results.
RMSEA = .00).\(^2\) For younger adolescents, the full model showed that gender was negatively associated with the intercept (\(\beta = -.24, p < .01\)), indicating that girls were less likely to have higher self-esteem at baseline compared to boys. Of the predictors, facial attractiveness was significantly negatively related to the intercept (\(\beta = -.12, p < .05\)), meaning that the more attractive adolescents are the lower their level of self-esteem is at baseline. Testing the full model with older adolescents revealed that educational level was significantly and positively related to the intercept (\(\beta = .18, p < .01\)), which means that the higher the educational level of the adolescents the higher their initial level of self-esteem. Sex was negatively associated with the intercept (\(\beta = -.31, p < .001\)), indicating that girls had lower levels of self-esteem at baseline compared to boys.

**DISCUSSION**

In the present study, we tested the association of adolescent facial attractiveness with initial levels of self-esteem and its development over time. With regard to the overall development of self-esteem during
adolescence, there seems to be an increase in self-esteem, especially among young adolescents. These findings are consistent with Donnellan, Trzesniewski, and Robins (2006), who stated that self-esteem is less stable in young adolescence but stabilizes when adolescents grow into young adulthood. In contrast to our hypotheses, we found a small negative association between attractiveness and the initial level of self-esteem among young adolescents, indicating that attractive individuals have lower self-esteem compared to less attractive individuals in early adolescence. This is a rather surprising finding, as most available studies show a positive association (Mathes & Kahn, 1975; Salvia et al., 1975) or no association (Jovanovic, Lerner, & Lerner, 1989; Lerner & Karabenick, 1974) between attractiveness and self-esteem. Only one study showed a negative effect of attractiveness on self-esteem (Zakin et al., 1984). However, it included only girls and used only one judge—who was familiar with the participants—to rate attractiveness, which is a less reliable measure of attractiveness. The current study included boys as well as girls, accounting for gender differences. Also, the current study used high-quality measures of attractiveness, which added reliable and convincing results to the earlier findings. There were no differences between attractive and unattractive adolescents on the growth rate of self-esteem during middle adolescence, indicating that adolescents' self-esteem goes through the same changes, whether or not these adolescents are attractive.

With regard to gender, girls seem to have lower self-esteem compared to boys, a finding that is supported by several studies (Birndorf, Ryan, Auinger, & Aten, 2005; Bolognini, Plancherel, Bettschart, & Halfon, 1996; Kling, Hyde, Showers, & Buswell, 1999). Moreover, girls received higher scores on the attractiveness measure compared to boys. This could be explained by the fact that female faces are more highly associated with the concept of attractiveness than male faces (McLellan & Mckelvie, 1993; Rhodes, Hickford, & Jeffery, 2000). Later in adolescence, education also becomes an important factor influencing self-esteem because adolescents who attend higher education seem to have a greater self-esteem. This is consistent with Wiltfang and Scarbecz (1990) and Demo and Savin-Williams's (1983) studies, which indicated that personal characteristics and achievement are important in defining self-esteem.

A possible explanation for the fact that attractive adolescents have lower self-esteem in early adolescence might be that they are confronted with more expectations from their direct social environment. For example, in the school environment, teachers have higher expectations of attractive students, academically and socially, compared to unattractive students (Clifford & Walster, 1973; Ritts, Patterson, & Tubbs, 1992). Peers also seem to expect more from attractive age mates than from unattractive age mates, whether or not they were acquainted with these peers (Styczynski & Langlois, 1977). Even parents seem to have higher expectations of attractive children rather than of unattractive children (Adams & LaVoie, 1974). According to the Terror Management Theory, self-esteem depends on the degree to which self-expectations and other-expectations are in agreement with each other (Pyszczynski et al., 2004). This theory also suggests that unrealistically high expectations of attractive adolescents could lead to lower self-esteem. Attractive children might perceive that the expectations from their social environment are too high. As a result, they might feel they will never be able to live up to these expectations.

Zakin et al. (1984) argued that social, cognitive, and biological changes that individuals go through during adolescence might explain the fact that less attractive adolescents have higher self-esteem compared to adolescents that are more attractive. These pubertal changes might be more threatening to attractive adolescents because they have a reputation to uphold. For less attractive individuals, this can be a promising change because things can turn out for the better. It has been shown that especially preadolescents are likely to believe that negative physical traits will change into positive ones during adolescence (Lockhart, Nakashima, Inagaki, & Keil, 2009). These feelings might boost their self-esteem during adolescence. On the other hand, attractive adolescents may think the changes in adolescence have more detrimental consequences for them because their positive (social) position can change. For example, it has been shown that adolescent girls who start to date earlier, and thus are perceived as more attractive, are more vulnerable to a drop in self-esteem (Simmons, Blyth, Van Cleave, & Bush, 1979).

Both of these explanations (attractive adolescents face higher expectations or attractive adolescents feel more threatened by the changes during puberty) should be tested in future research. The reason we did not find a change in self-esteem over time but only a difference between attractive and unattractive adolescents at baseline might be because the adolescents in our sample already entered adolescence before the start of data collection. During this early phase of adolescence, a developmental difference between attractive and less attractive adolescents in terms of self-esteem emerges that stabilizes later on. Indeed, previous research shows that self-esteem develops during early adolescence and then stabilizes (Damon & Hart, 1982; Donnellan et al., 2006). However, to adequately study the development of self-esteem and the way in which this difference in self-esteem between attractive and less attractive adolescents manifests itself, future research should include...
a sample of younger preadolescent children in order to track early developmental changes.

Another possible explanation for not finding an effect of attractiveness on the development of self-esteem can be that there are different subgroups within attractive adolescents, cancelling each other out and nullifying the effects. These subgroups might include, for example, adolescents who are early or late maturers. It has been shown that early maturing girls are at a higher risk for a drop in self-esteem (P. D. Duncan, Ritter, Dornbusch, Gross, & Carlsmith, 1985). Early maturing girls might experience a discrepancy between the maturation of their own body compared to the lack of maturation of their peers’ bodies (Williams & Curie, 2000). Experiencing this discrepancy could lead to a drop in self-esteem, because the early maturation of their bodies does not conform to the ideal of thinness these girls may feel they have to live up to. These findings make clear that self-esteem and physical appearance are related to pubertal timing, and these associations should be tested in future research. Other subgroups might include adolescents with or without eating disorders, as attractive girls with eating disorders have low self-esteem (Davis, Claridge, & Fox, 2000). As eating disorders also relate to perceptions about one’s appearance, it might be an important factor to take into account. Further, facial attractiveness of course is only one aspect of attractiveness. Other aspects of attractiveness that could be related to self-esteem are charisma (Riggio, Widaman, Tucker, & Salinas, 1991) and waist-to-hip ratio for women (Henss, 2000). In addition, nonphysical factors such as socioeconomic status (SES; Hume & Montgomerie, 2001) and social status (Kennedy, 1990) have been shown to be highly related to attractiveness.

This relates to another interesting avenue for future research, which could focus on the difference between self- and other-perceptions among attractive and unattractive adolescents. If our first argument, based on Terror Management Theory, were valid, attractive adolescents would show a higher discrepancy between self- and other-perceptions. When adolescents rate themselves as attractive, they take many other aspects of attractiveness into account, such as charisma, waist-to-hip ratio, SES, and social status, whereas other-perceived attractiveness is more likely to be based on physical characteristics. Therefore, self-perceived and other-perceived attractiveness may be different constructs, especially when other-perceived attractiveness is rated by independent judges. Following this, self-perceived and other-perceived attractiveness and the difference between these two probably show different associations with self-esteem. How the difference between self-perceived and other-perceived attractiveness relates to self-esteem should be the subject of future research.

**Strengths and Limitations**

Unlike other studies of attractiveness and self-esteem, we measured self-esteem using a longitudinal design, enabling a developmental view of self-esteem in relation to attractiveness. Further, in contrast to the studies of Davison and McCabe (2006), Lerner and Karabenick (1974), Thornton and Ryckman (1991), and Wade (2000), who used self-reported measures of attractiveness, we used a measure of attractiveness based on multiple judges. Our study also updates research on attractiveness and self-esteem, because most studies date back to the seventies and eighties. This type of study is particularly important as in today’s society different types of media highlight attractiveness as an important and defining trait (Agliata & Tantleff-Dunn, 2004; Trampe, Stapel, & Siero, 2007).

Despite the strengths just mentioned, some limitations of this study should be noted. Due to a limited sample size, we were not able to investigate subgroups or interaction effects with gender (Birndorf et al., 2005), which could be important in a society where attractiveness is especially important to young women (Grabe, Ward, & Hyde, 2008). The personality of the adolescents can also moderate the relationship between attractiveness and self-esteem (Block & Robins, 1993; Watson, Suls, & Haig, 2002). Second, although we measured self-esteem for five consecutive waves, attractiveness measures were taken only at one wave, which made assessing changes in attractiveness during adolescence difficult. However, this method of assessing attractiveness has been shown to be extremely stable over time during adolescence (Alley, 1993; Zebrowitz et al., 1993). This justifies using a single measurement of attractiveness. Last, due to selective sampling, the present findings should not be generalized, for instance, to single-parent families or families of ethnic minorities.

**Implications for Research, Policy, and Practice**

In conclusion, the current study demonstrates that attractive adolescents are at risk for a lower initial level of self-esteem, especially in early adolescence. After the onset of adolescence, attractiveness does not contribute to the further development of self-esteem. Low self-esteem during adolescence is known to be a risk factor for several problem behaviors such as criminal behaviors, depression, and even suicidal ideation (Bhar, Ghahramanlou-Holloway, Brown, & Beck, 2008; Trzesniewski et al., 2006). Attractive individuals may experience many positive side effects of their good looks. However, this does not imply that these individuals show high scores on self-esteem. Parents, teachers, and practitioners should take this into account when expressing their expectations toward these adolescents. It
might be helpful if parents, teachers, and practitioners focus on positive characteristics of these adolescents (Mann, Hosman, Schaalma, & De Vries, 2004; Mruk, 2006). The findings might also make the social environment more aware of the importance of adequate signaling of low self-esteem in young adolescents. It is important for future research to examine the development of self-esteem in relation to attractiveness during the onset of adolescence (or even during childhood). This might be the time during which the difference in self-esteem between attractive and unattractive adolescents might develop. Being attractive seems to become increasingly important in today’s society. Therefore, future research should examine the effects of mediating and moderating factors, such as gender, personality, onset of puberty, eating disorders, and possibly also SES and social status.

REFERENCES


Appendix

Table A1
Overview of Studies on Attractiveness and Self-Esteem

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Measure</th>
<th>Judges</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathes and Kahn (1975)</td>
<td>Cross-sectional</td>
<td>Other-perceived attractiveness</td>
<td>4 undergraduate students</td>
<td>University students</td>
<td>Male &amp; female</td>
</tr>
<tr>
<td>Salvia et al. (1975)</td>
<td>Cross-sectional</td>
<td>Other-perceived attractiveness</td>
<td>7 graduate students</td>
<td>8–11</td>
<td>Male &amp; female</td>
</tr>
<tr>
<td>Zakin et al. (1984)</td>
<td>Cross-sectional</td>
<td>Other-perceived attractiveness</td>
<td>1 nurse</td>
<td>10–13</td>
<td>Female</td>
</tr>
</tbody>
</table>

