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Facial Attractiveness and Physical Health

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Previous research has documented that more facially attractive people are *perceived* by others to be physically healthier. Using self-reports, observer ratings, daily diary methodology, and psychophysiological assessments, this study provides limited empirical evidence that more facially attractive people ($N = 100$) may be physically healthier than unattractive people. Discussion suggests the value of an evolutionary psychological perspective for understanding the relationship between facial attractiveness and physical health.

KEY WORDS: Facial attractiveness; Health; Evolutionary psychology.

The relationship of facial attractiveness to physical health is an important issue from several theoretical perspectives. An evolutionary psychological perspective, for example, suggests that facial attractiveness may provide information about underlying health (Buss 1994; Gangestad 1993; Symons 1995). A social constructivist perspective, in contrast, suggests no necessary relationship between facial attractiveness and health. Instead, judgments of attractiveness reflect societal ideals, which in turn reflect fluctuating preferences of the mass media and fashion industries (Englis et al. 1994; Fallon 1990; Freedman 1984). The purpose of this study is to empirically assess whether facial attractiveness provides information about underlying health.

Previous research indicates that more facially attractive people are *perceived* to be healthier. Cunningham (1986) found that men judge women with more attractive faces as more fertile and as likely to experience fewer medical problems. Grammer

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and Thornhill (1994) documented that opposite-sex raters judge more facially attractive people to be healthier than less attractive people. Kalick et al. (1998) replicated these findings using both opposite-sex and same-sex raters. Singh (1993, 1995) found that not only are women with a lower waist-to-hip ratio (WHR) judged to be physically healthier, more fertile, and more attractive, but women with lower WHRs report fewer health problems and higher fertility.

A single study has investigated whether more facially attractive people in fact are physically healthier than less attractive people. Kalick et al. (1998) correlated adolescent facial attractiveness with health during adolescence, middle adulthood, and later adulthood. A health rating was recorded for each participant and for each time period by medical researchers on the basis of clinical examination and medical records. Health was rated on a five-point scale ranging from "no illness" to "severe illness." Using this gross assessment of health, no relationship was found for men or women between adolescent facial attractiveness and health in adolescence, middle adulthood, or later adulthood. A goal of the present study is to replicate the research of Kalick et al. (1998) using more specific health data provided by participants as well as data on cardiovascular health secured from assessments of cardiovascular recovery time.

Like the study by Kalick et al. (1998), this study drew upon archival data collected from a group of intensively assessed participants. The fact that the data files on these participants contained their photographs provided the opportunity to obtain observer ratings of the participants on several dimensions, including facial attractiveness. The idea for this study came after the data were collected, so we had no input on what variables were assessed. We selected for analysis only those variables that directly index physical health. Previous reports present different analyses using these data. Shackelford and Larsen (1997), for example, reported analyses of the relationship of facial symmetry to health. The present research reports new analyses of the relationship of facial attractiveness to health. In these data, facial symmetry is not significantly correlated with facial attractiveness (Shackelford and Larsen 1997).

METHODS

Participants

Participants were 66 women and 34 men (mean age about 20 years; range 18 to 23 years) enrolled in a psychology research course at one of two universities in the midwestern United States. Participants received credit toward their grades based on participation in weekly class meetings, timely completion of homework assignments, and a final term paper.

Materials and Procedure

Daily physical symptom reports. Participants provided daily reports of physical symptomology. Participants were instructed to check which of seven symptoms were experienced for the relevant time period. These seven symptoms were headache, runny or stuffy nose, nausea or upset stomach, muscle soreness or cramps,

sore throat or cough, backache, and jitteriness. Identical copies of this form were completed two times daily for 4 weeks. The participant completed one form at the midpoint of his or her day, reporting symptoms experienced during the first half of the day. A second report was completed close to the participant's normal bedtime and covered the second half of the day. Participants were instructed to discard any form not completed within a 2-hour window of time. Daily reports were collected on a daily basis. Compliance with the daily reporting task was excellent, with 90% of the participants competing 100% of the reports. Seven symptom variables were created by summing the total occurrence of each of the seven symptoms across the 1-month study period. These summed totals were standardized first within and then across the two samples of students who provided the data for this study. The findings do not depend on this standardization, so only results from analyses on the doubly standardized variables are reported.

Cardiovascular health. Cardiovascular health was assessed using cardiac recovery time. Upon arrival to the laboratory, prospective participants read a consent form informing them that exercise at moderate exertion would be required and inquiring about health conditions that could be aggravated by participating. No prospective participants reported a medical condition that would put them at risk during exertion, and all consented to participate.

To assess cardiovascular health in terms of cardiac recovery time, it is necessary to elevate the target's heart rate. To elevate heart rate, participants either (1) rode a bicycle ergometer for 1 minute at moderate exertion (maintaining a speed of 11 mph at a tension setting sufficient to expend 245 W of energy), or (2) stepped up and down a 2-foot (0.61 m) step for 1 minute (expending, on average, 245 W of energy). Both procedures resulted in an increase in heart rate of at least 30 beats/min. Heart rate was monitored on a Grass Model 7D polygraph. A photoplethysmograph was attached to the participant's thumb to monitor the pulse wave. Signals were routed to a Grass 7P4 cardiotachometer to detect the rising slope of each pulse wave, with the Schmitt trigger adjusted to record heart rate in beats per minute. Following 1-minute exertion, participants were seated in a comfortable chair and instructed to relax. For participants who rode the bicycle ergometer, cardiovascular health was measured as heart rate 4 minutes postexercise (Boutcher 1990). For participants who stepped up and down, cardiovascular health was measured as the time it took for the participant's heart rate to return to his or her baseline (Knapik et al. 1992). Because cardiovascular health was assessed with two different but comparable assays across participants, we standardized health scores within each sample (ergometer and step) before conducting analyses. Previous research has documented that both assays are valid measures of cardiovascular health (Boutcher 1990; Braun 1991; Knapik et al. 1992; Nobrega et al. 1994; Nurhayati and Boutcher 1998).

Observer ratings. A head-and-shoulders photograph was taken of each participant. Participants were instructed to look directly at the camera. Photographs were taken at the same participant-to-camera distance (3 feet; 0.9144 m). Negatives were developed into 1×1-inch (2.54×2.54 cm) color slides. Photographs were rated on

several dimensions by an independent group of 18 men and 19 women (mean age 19 years) who participated in exchange for credit towards their grade in a psychology course. The raters assessed the depicted faces on the dimension of unattractive–attractive, using a nine-point scale, where −4 = unattractive, +4 = attractive, and 0 defined the midpoint of the scale. A second group of raters (six men and nine women, mean age 21 years) rated the photographs in exchange for extra credit in a psychology course. These raters assessed the depicted faces for degree of smiling, using a nine-point scale, where −4 = full frown, 0 = neutral expression, and +4 = full smile. Mean interjudge reliability for the attractiveness ratings and for the smiling ratings exceeded $\alpha = .90$.

RESULTS

Smiling increases the rated attractiveness of a target (Mueser et al. 1984; Reis et al. 1990). Table 1 presents the correlations of facial attractiveness with health after partialing out variance attributable to smiling. A relationship between facial attractiveness and health may be mediated by activity level. More attractive people might be more active and, consequently, enjoy better health. To control for this possibility, we partialed out participant's self-reported activity level, as measured by the Activity Level sub-scale of the EASI-3 (Buss and Plomin 1975). The relationships reported between health and facial attractiveness therefore are independent of smiling and participant activity level.

Controlling for activity level and smiling, attractive participants, relative to unattractive participants, displayed greater cardiovascular health. Furthermore, attractive participants, relative to less attractive participants, complained less often of a headache or runny or stuffy nose over the 1-month study period. When the analyses are conducted within sex (following Kalick et al. 1998), the facial attractiveness–health link appeared to be stronger for men than for women. Attractive men, relative to unattractive men, displayed greater cardiovascular health and complained less often of a runny or stuffy nose, and a sore throat or cough. Attractive women, relative to unattractive women, complained less often of a headache during the 1-month

Table 1. Correlations of Facial Attractiveness with Health, Controlling for Smiling and Activity Level

	Facial attractiveness		
Health variable	Women	Men	Total
Cardiovascular health	.10	.30†	.15*
Headache	−.26†	.00	−.17†
Runny or stuffy nose	−.08	−.25*	−.14*
Nausea or upset stomach	−.07	−.08	−.07
Muscle soreness or cramps	−.10	−.07	−.11
Sore throat or cough	.11	−.32†	−.04
Backache	−.11	−.17	−.13
Jitteriness or trembling	−.06	.10	−.02

Note. Primary data were based on responses provided by 66 women and 34 men.

*$p \leq .10$; †$p \leq .05$ (one-tailed).

study period. Tests for sex differences for each of the seven correlations (using Fisher's *r*-to-*z* transformation) revealed, however, that only the correlation between attractiveness and reported occurrence of a sore throat or cough differed significantly by sex ($z = 2.02$, $p < .05$; all other $|z|$s < 1.24 such that all other ps $> .10$).

DISCUSSION

This research provides empirical evidence that facially attractive people may be physically healthier than unattractive people. None of the reported relationships between facial attractiveness and health are large, however, and only a few reach statistical significance. Nevertheless, parallel findings exist for body attractiveness. Singh (1993, 1995) documented that women with an attractively rated WHR not only are perceived as healthier and more fertile than women with a less attractively rated WHR, but in fact are physically healthier and more fertile. Together with the present findings, results such as these suggest that facial and body attractiveness may covary with specific assays of physical health.

These results contrast with those reported by Kalick et al. (1998), who assessed global health using a five-point scale ranging from "no illness" to "severe illness." The present research secured several specific measures of health, allowing for a more detailed study of the relationship between facial attractiveness and health than was provided by Kalick et al. (1998). The different levels of specificity of the health assessments may account for the apparently conflicting results of the two studies. Including the present study, there now exist two studies of the relationship between facial attractiveness and physical health. Kalick et al. (1998) found no relationship between attractiveness and health for men or for women, whereas the present study provides some evidence that such a relationship may exist. Clearly, additional research is needed before a reliable conclusion can be made.

The present results are consistent with an evolutionary psychological perspective on the link between attractiveness and health. Physical attractiveness, according to this perspective, is not an arbitrary social construction, but instead may provide information about health. Gangestad and Buss (1993) investigated the mate preferences of 29 cultures and found that people living in areas with higher pathogen prevalence value a potential mate's physical attractiveness more than do people living in areas with lower pathogen prevalence. Gangestad and Buss (1993) argue that, in areas with higher pathogen prevalence, physical attractiveness may provide more information about the health of a prospective mate than it does in areas with lower pathogen prevalence.

Important limitations to the present investigation include the small sample size and the limited number and variety of physical health assays. Also, it would be useful to include a more diverse group of participants in replications and extensions of this research. The current participants consisted mostly of young men and women attending universities in the United States. The limitations of this study notwithstanding, this research suggests that facial attractiveness may provide information about underlying physical health.

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