Celebrity worship and incidence of elective cosmetic surgery: evidence of a link among young adults.

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Abstract

Purpose

The purpose of the current study was to explore among young adults whether celebrity worship predicted the incidence of elective cosmetic surgery within the period of eight months after controlling for a number of known predictors of elective cosmetic surgery.

Methods

137 young adults completed questionnaire measures of attitudes towards a celebrity whose body image they admired, previous and vicarious experience of elective cosmetic surgery, attitudes towards cosmetic surgery, and a range of psychological and demographic measures at Time 1. Participants were then asked to report whether they had undergone elective cosmetic surgery eight months later.

Results

After controlling for a number of known predictors of elective cosmetic surgery, intense-personal celebrity worship of a celebrity whose body shape was admired by the participant predicted the incidence of elective cosmetic surgery within an eight month period.

Conclusions

The current findings suggest that the type of para-social relationship that young adults form with celebrities, particularly with those whose body shape is admired, may need to be considered by

those when speaking to, and educating, young people about their choices around elective cosmetic surgery.

KEY WORDS: Cosmetic Surgery; Celebrity Worship; Body Image; Longitudinal; Media

Celebrity Worship and Incidence of Elective Cosmetic Surgery: Evidence of a link among young adults.

In 2009 more than 209,000 cosmetic plastic surgery procedures were performed on individuals aged 13-19 years in the U.S.A. [1]. Within the review literature, the psychological reasons that surround young adults' choices for elective cosmetic surgery are a focus of discussion, noting a lack of empirical research that fully considers the dynamics that emerge around the incidence of elective cosmetic surgery among young adults [2]. However, the wider empirical literature suggests numerous variables predict a willingness to have, or the incidence of, elective cosmetic surgery. Sex, age, Body Mass Index (BMI), friends and family having elective cosmetic surgery and greater media exposure to cosmetic surgery are all associated with the incidence of elective cosmetic surgery [3-8]. From a psychological perspective, poorer body image, physical attractiveness, self-esteem, and life-satisfaction, all predict the incidence of elective cosmetic surgery [9-11].

The possible influence celebrities have on the incidence of elective cosmetic surgery among young people is often cited in the media [12,13] but has not been considered in the empirical literature. Moreover, how individuals form relationships with celebrities (commonly referred to as celebrity worship) may be useful to exploring the relationship between celebrities and elective cosmetic surgery [8]. In broad terms, celebrity worship is described as a para-social relationship (one-sided relationship in which an individual knows the other, but the other does not [14]). Research suggests that differences in how individuals worship celebrities are important [15]. Celebrity worship typically comprises 3 factors: '*Entertainment-social*', where the attraction to the celebrity results from their perceived ability to entertain and become a social

focus; '*Intense-personal*', reflecting personal intensive and compulsive feelings about the celebrity; and '*Borderline-pathological*', typified by reports of uncontrollable behaviors and fantasies regarding the celebrity [16]. Theoretically, the association between these dimensions of celebrity worship has been described as increasing in severity from Entertainment-social, through Intense-personal, to Borderline-pathological. This increasing severity has been labelled the absorption-addiction hypothesis, thought, at it highest level, to result in a compromised identity structure, and a greater identification with a celebrity in an attempt to establish a self image [15].

The differences in how individuals form relationships with celebrities and the absorption-addiction hypothesis have previously proved useful in exploring how celebrity worship is related to prospective elective cosmetic surgery. Among 401 British female undergraduates, findings suggest an association between particular aspects of celebrity worship and a willingness to have cosmetic surgery [8]. Celebrity worship, alongside a number of demographic variables, predicted half the variance for the intrapersonal (self-oriented benefits of cosmetic surgery) and social (social motivations for having cosmetic surgery) subscales of the Acceptance of Cosmetic Surgery Scale (ACSS; [17]). Specifically, entertainment-social celebrity worship predicted unique variance in both the interpersonal (b=.30) and social (b=.32) subscales of the ACSS and the intense-personal celebrity worship was found to be a particularly strong predictor in the social subscale (b=.53) of the ACSS.

These findings present compelling evidence for a strong association between celebrity worship and a willingness to undergo cosmetic surgery. However, no evidence exists that examines whether celebrity worship is related to individuals actually undergoing elective cosmetic surgery. Such a consideration is important because research suggests a large variability

in attitude-behavior consistency [18]. Furthermore, since celebrity worship and incidence of elective cosmetic surgery have associations with the same variables (e.g. body image [19]), it is necessary to examine whether any relationship between celebrity worship and the incidence of elective cosmetic surgery is maintained after controlling for a number of existing predictors of the incidence of elective cosmetic surgery. The aims of the current study were two-fold. The first aim of the study was to examine whether celebrity worship was able to predict the incidence of elective cosmetic surgery. The second aim of the study was to test the veracity of any relationship between celebrity worship and the incidence of elective cosmetic surgery by controlling for a number of known predictors of elective cosmetic surgery.

Method

Participants

137 participants sampled from two United Kingdom city populations took part in the study (51 males and 86 females). Ages ranged from 18 to 23 years (Mean age=19.74 years, *SD*=1.5). The highest predominance of ethnicity in the sample was White (44.5%), with the next highest being Black (28.5%). Respondents were drawn from several occupations; the Service Industry (28.5%), Government (14.6%) and Sales (12.4%). 63.5% of the sample had a GCSE (High School equivalent) and 27% had an 'A' level (SAT equivalent) as their highest qualification. 89.8% of respondents had a marital status of single. 105 participants (76.6%) reported never previously having cosmetic surgery.

Measures.

At Time 1 of the study, the following measures were administered:

1. *The Celebrity Attitude Scale* [15]. 27 items can be used to form three measures of Celebrity Worship [20]; Entertainment-social (7 items, e.g. 'I love to talk with others who admire my favorite celebrity'), Intense-personal (13 items, e.g. 'The successes of my favorite celebrity are my successes too') and borderline-pathological (7 items, e.g. 'I would gladly die in order to save the life of my favorite celebrity). Responses are scored using a 5-point 'Strongly Disagree' to 'Strongly Agree' response format. Consistent with previous research [8], respondents were asked to select a same-sex living 'favourite celebrity' whose body/figure they liked and admired.
2. *Personal experience of elective cosmetic surgery*. Replicating previous methods of measuring personal experience of cosmetic surgery [3], respondents were asked about the frequency and types of elective cosmetic surgery they had experienced. Within the current study the classification of elective cosmetic surgery employed definitions used by the American Society of Plastic Surgeons [1]. Therefore elective cosmetic surgery encompassed cosmetic surgery procedures (e.g. Breast Augmentation and Liposuction) and minimally-invasive cosmetic surgery procedures (e.g. Botulinum Toxin Type A, Soft Tissue Fillers) procedures, but we did not include reconstructive procedures (e.g. birth defect correction) and non-invasive procedures (e.g. teeth whitening). The measurement of previous elective cosmetic surgery was used to consider the extent to which past behavior predicted future elective cosmetic surgery [21] as some individuals may have multiple cosmetic surgeries, particularly those that are minimally invasive [22].
3. *Acceptance of Cosmetic Surgery Scale* (ACSS; [17]). This scale comprises three 5-item subscales to measure three dimensions of attitudes towards cosmetic surgery; (1) Intrapersonal (e.g. 'Cosmetic surgery can be a big benefit to people's self-image'); (2)

Social (e.g. ‘If it would benefit my career I would think about having cosmetic surgery’’), and; (3) Consider (e.g. ‘I have sometimes thought about having cosmetic surgery). Responses are scored using a 7-point ‘Strongly disagree’ to ’Strongly agree’ response format.

4. *Vicarious experiences of elective cosmetic surgery*. Replicating previous methods to measure vicarious experiences of elective cosmetic surgery [3, 4], respondents were asked 4 further questions about their experiences relating to cosmetic surgery. Respondents were asked how many people they knew who had undergone elective cosmetic surgery, scored on a 5 point scale (“1=‘None’”, “2=‘Less than two’”, “3=‘Less than 10’”, “4=‘More than 10’” and “5=‘Unsure, but many more than 10’”). Additionally, respondents were asked about exposure to cosmetic surgery via the media and how often they (1) read articles, (2) saw advertisements and (3) watched television programmes about cosmetic surgery. Each question was scored on a 5-point ‘Never’ to ‘Often’ response format.
5. *The Body Shape Questionnaire-Revised* [23]. A 10-item scale (e.g. ‘have you ever felt ashamed of your body?’) designed to measure body image preoccupation based on the Body Shape Questionnaire [24]. Responses are scored using a 6-point ‘Never‘ to ‘Always’ response format. Higher scores indicate greater body image preoccupation. The current scale was adopted because it was brief, derived from an established measure, and could be adapted for use with men (e.g. ‘have you noticed the shape of other *men* and felt your own shape compared unfavourably?’). The scale has shown adequate internal reliability and construct validity [23].

6. *The Rosenberg Self-Esteem Scale* [25] is a 10-item measure of global self-esteem measuring overall feelings of self-worth or self-acceptance (e.g. "I feel that I have a number of good qualities"). Responses were scored using a 4-point 'Strongly Disagree'' to Strongly Agree' response format. Research suggests the scale demonstrates adequate reliability statistics and construct validity [26].
7. *The Satisfaction with Life Scale* [27]. This 5-item measure identifies global judgments about life satisfaction (e.g. 'The conditions of my life are excellent'). Responses were scored using a 7-point 'Strongly Disagree' to 'Strongly Agree' response format. The scale demonstrates satisfactory internal reliability and construct validity [27].
8. *Self-rated Attractiveness and other personal variables*: A number of further questions were asked. Consistent with previous research in this area [3] participants were asked to rate their own physical attractiveness using a 7-point 'Unattractive' to 'Very attractive response format. In addition to the demographic variables mentioned in the participant section, participants were also asked to indicate their height, weight (used to calculate BMI using kg/m^2), and estimated household income (1='£0-£10000'; 2='£10000–£20000', 3='£20000–30000', 4='30000-£40000' and so on).

Participants were followed up eight months later (Time 2) and asked to provide information on the amount and type of elective cosmetic surgery procedures they may have undergone. Respondents were given a list of previous reported cosmetic surgery experiences to allow them clarify or correct possible discrepancies or overlaps in their reports. Again procedures were classified using the American Society of Plastic Surgeons definitions that were used at Time 1. An eight-month period was selected as the study started in early Fall and there was an

anticipation that a longer period (e.g. a year) would increase attrition from the study due to potential changes in educational or work status.

Procedure

Ethical approval was obtained from a relevant university ethics committee and completed in line with the British Psychological Code of Ethics. Respondents over 18 years were sought because 18 is the legal age for an individual to undergo the large majority of elective cosmetic surgery procedures without needing parental consent. Recruitment of participants was opportunistic with advertisements displayed, after seeking relevant permission, via fliers in over 50 local workplaces, community groups and colleges that were expected to include large proportions of young people. There was a full disclosure about the nature of the study. As the prevalence of celebrity worship and cosmetic surgery are relatively low among the general population [1,28] we purposely sought to attract participants interested in celebrities or cosmetic surgery by emphasising the potential relevance and interest of these topics to participants (although the advertisements stressed that anyone was welcome to take part). This was designed to attain a final sample that comprised people who demonstrated higher levels of celebrity worship and who were likely to undergo elective cosmetic surgery over the duration of the study. Consequently there is an inherent bias in this sampling procedure that should be noted in terms of incidence and prevalence of celebrity worship and cosmetic surgery reported among this sample.

Initially, 215 respondents took part in the study, with only 137 respondents participating at Time 2, representing a 63.7% retention rate. Those failing to take part at Time 2 did not differ significantly on any of the variables included in the study. Mean (SD) statistics for all the

measures for those respondents completing and leaving the study are provided in Table 1 with independent groups *t* test statistics ranging from t=-1.275 to t=1.457 (all p>.05)

RESULTS

Descriptive, Reliability and Correlational Statistics

The most frequent elective cosmetic procedures reported among the current sample were, Botulinum Toxin Type A, Soft Tissue Fillers, Liposuction, Breast augmentation, Breast lift, Laser skin resurfacing, and Nose reshaping. The prominence of Botulinum Toxin Type A and Soft Tissue Fillers at this age may be unexpected, but is perhaps due to a relative lower cost to the other reported procedures (e.g. Breast lift), the prominent use of collagen (a Soft Tissue Filler) to enhance lip shape and a preoccupation to correct single skin lines at an early age, or skin damage from the sun or sunbed use. Moreover, this incidence is consistent with the most common procedures reported among younger patients in the U.S.A [1]. No respondents reported returning to alter a previous unsatisfactory surgery. The suggested criteria to assess the prevalence of celebrity worship in a sample are to use scores above the mid-point score for each subscale of the CAS [29], though these statistics need to be treated with caution as the use of the mid-point is arbitrary. Using these criteria, 22.8% of the sample was classified as entertainment–social, 8% as intense–personal and 2.5% as borderline–pathological. These statistics are higher than estimates among previous adult general population samples (entertainment–social, 15.1%; intense–personal, 5.1% and borderline–pathological, 1.9%), but consistent with the view that younger people are more interested in celebrities than older adults [19].

Table 1 reports the Cronbach's alphas [30] for the multi-item scales, descriptive statistics (Means and Standard Deviations) and all the Pearson Product Moment Correlation coefficients

between all the variables. All of the multi-item scales are above an acceptable internal reliability criteria of α=.7 [31].

INSERT TABLE 1 HERE

In terms of the relationship between celebrity worship and incidence of elective cosmetic surgery, only intense-personal celebrity worship shares a statistical significant relationship, with a medium effect size. Of the other variables, the incidence of elective cosmetic surgery shares a statistical significant correlation, in expected directions, with all of the measures, with the exception of age, advertisements seen for cosmetic surgery, and life satisfaction, thereby noting a general consistency with the general literature (e.g. [3] and [9]).The largest associations with the incidence of elective cosmetic are body image preoccupation, previous frequency of having elective cosmetic surgery, self-esteem, acceptance of cosmetic surgery and sex. The Spearman rank correlation coefficients between celebrity worship and the incidence of elective cosmetic surgery suggest that intense-personal celebrity worship shares a statistical significant correlation with the incidence of elective cosmetic surgery (r=.32, p<.001), and the entertainment-social celebrity worship (r=.12, p>.05) and borderline-pathological celebrity worship (r=.08, p>.05) do not.

Hierarchical Logistic Regression

Forty-two participants (30.7%) reported having elective cosmetic surgery over the 8-month period since Time 1. A 6-step Hierarchical Logistic Regression was performed to test whether intense-personal celebrity worship could predict the incidence of elective cosmetic surgery, after controlling for other known predictors. All continuous variables were standardized, consequently the odds ratios represent the increase in likelihood of undergoing cosmetic surgery associated

with being 1 *SD* higher on the predictor variable. Groups of predictors were entered into the regression in a series of steps based around conceptual differences between sets of variables. Step 1 comprised demographic variables, Step 2 encompassed previous experience and attitudes towards cosmetic surgery, Step 3 comprised vicarious experience of cosmetic surgery, and Step 4 encompassed psychological predictors of elective cosmetic surgery. Step 5 comprised the three celebrity worship measures. To test whether the predictive value of celebrity worship varied between men and women, a further step (Step 6) was introduced to conduct a moderator analysis. This involved computing three new variables representing the interaction between sex and each celebrity worship dimension. The moderation analysis followed recommendations forming interaction variables based in the multiplication of the standardized variables with the dummy coded sex variable [32]. For each step the criteria for entry was set at p=.05, removal at p=.10 and confidence interval for odds ratio set at 95%. The Regression model is presented in Table 2 with unstandardized regression coefficients, Nagelkerke R^2 and odds ratio statistics presented for each predictor variable. Changes in the chi-square and Nagelkerke R^2 statistics are shown for each step to show changes in explained variance.

INSERT TABLE 2 HERE

In Step 1, the demographic variables reached statistical significance, with sex, BMI, and income demonstrating statistical significant regression coefficients. In Step 2, frequency of previous elective cosmetic surgery and the ACSS subscales reached statistical significance with previous experience and the intrapersonal subscale of the ACSS statistical significant regression coefficients. In Step 3, the vicarious experience of cosmetic surgery measures did not reach statistical significance indicating that these four variables together were unable to predict the

incidence of elective cosmetic surgery. In Step 4, the psychological constructs reached statistical significance with body image preoccupation and lower self-esteem demonstrating statistical significant regression coefficients. Together these four steps explained 73% of the variance of whether people underwent elective cosmetic surgery. In Step 5, the three celebrity worship subscales reached statistical significance, explaining an additional 5.2% of the variance, with intense-personal celebrity worship demonstrating regression coefficients which reached statistical significance. At Step 6, the interaction terms did not increase the variance explained, accounting for 1% of the variance. This suggests intense-personal celebrity worship predicts elective cosmetic surgery equally for both men and women.

Discussion

The current findings suggest that intense-personal celebrity worship, specifically of a celebrity whose body shape is admired, does not only predict the incidence of elective cosmetic surgery over the period of eight months, but does so after controlling for a number of standardized known predictors of the incidence of elective cosmetic surgery. This new finding is consistent with the previous finding that intense-personal celebrity worship is related to a willingness to have elective cosmetic surgery [8].

It is important not to over-state the relationship between intense-personal celebrity worship and the incidence of elective cosmetic surgery. When this relationship is compared with the effect sizes and odds ratios of other variables in this study; sex, body image preoccupation, self-esteem, previous cosmetic surgery experience, and willingness to have cosmetic surgery all share associations of greater or equal influence with the incidence of elective cosmetic surgery. There is also a caveat about some of the figures presented in this study. 23.3% of the sample reported having had elective cosmetic surgery at Time 1 and 30.7% of the sample reported

having cosmetic surgery over an eight month period. The high incidence of cosmetic surgery within our sample results from intentionally trying to attract respondents who were interested in cosmetic surgery. Consequently, there is a bias within our sample and this should be a consideration with our findings. Most certainly, no generalizations about the incidence or prevalence of cosmetic surgery among young people outside of this sample should be drawn from this study. Finally, the findings are limited to one sample of young people and therefore further research exploring the statistical power and accuracy of our findings across adequate and different populations of young people is now indicated.

The association between intense-personal celebrity worship and the incidence of elective cosmetic surgery is, in part, consistent with the absorption-addiction hypothesis. This hypothesis suggests that higher levels of celebrity worship will be associated with elective cosmetic surgery with the individual establishing an identity using the celebrity as a physical exemplar. However, the findings are not wholly consistent with the hypothesis as borderline-pathological celebrity worship, thought to reflect the highest levels of celebrity worship, was not associated with the incidence of elective cosmetic surgery. The absence of a statistical association may result from the low frequency of individuals falling into that category, however, other theoretical contexts, other than the absorption-addiction hypothesis, may need exploring to explain this finding. For example, previous research has linked intense-personal celebrity worship to depression and poorer friends and family attachments among young age groups [28,33] and it may be that the relationship between intense-personal celebrity worship and elective cosmetic surgery is better understood within the context of attempts to alleviate depression or improve their social relationships. Furthermore, the Prototype Willingness Model [34] might be used to integrate concepts such as prototypes of beauty portrayed by celebrities, alongside assessments of

subjective norms (e.g. familial support) and perceived behavioral constraints (e.g. cost). These considerations may be particularly pertinent when taking into account whether the celebrities, with whom individuals identify, report having undergone surgeries themselves and then to what extent cosmetic surgery emerges from the attempted emulation of a beauty ideal.

Future research may examine the relationship between intense-personal celebrity worship and elective cosmetic surgery to a greater granularity. Studies need to examine whether the effect varies across specific elective cosmetic surgery procedures, such as breast augmentation [2]. Researchers might explore whether the satisfaction from celebrity-worship-influenced surgeries differ from satisfaction with surgeries carried out for other motives and to what extent this influences the incidence of further prospective surgeries. Within this context, research might consider the extent to which elective cosmetic surgery may comprise multiple procedures to achieve a certain beauty ideal, or whether there is a ceiling effect to undergoing elective cosmetic surgery once a certain beauty ideal has been achieved, limiting the incidence of further prospective surgeries.

The practical implications of the current findings are that they can provide a focus for clinicians who are trying to understand young adults' decisions for using a celebrity as inspiration for elective cosmetic surgery. Specifically, including a measure of celebrity worship may allow clinicians to consider these possible motivations for the elective cosmetic surgery among these patients.

In summary, the current findings present the first evidence that intense-personal celebrity worship predicts incidence of elective celebrity worship among young adults after controlling for a number of known predictors of elective cosmetic surgery.

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