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# Adolescent desire for cosmetic surgery: associations with bullying and psychological functioning

## Introduction

Between 2014 and 2015, 15.9 million surgical and minimally invasive procedures were undertaken in the US; 226,000 of those procedures were undertaken in 13-19 year olds.<sup>(1)</sup> Rates of cosmetic surgery are similarly increasing in the UK<sup>(2)</sup> and across the globe.<sup>(3)</sup> As the prevalence of cosmetic procedures has risen, so too has an interest in the drivers that lead people to desire a change in their appearance. Drivers examined so far include individual factors (e.g., sex),<sup>(4-7)</sup> psychological factors (e.g., body image),<sup>(5, 8-17)</sup> sociocultural factors (e.g., media influences)<sup>(5, 18-22)</sup> and interpersonal factors (e.g., peer influences).<sup>(11, 18, 19, 23-26)</sup> Some<sup>(21)</sup> have found that peers have a strong influence on body image and several studies have found that a large proportion (around 50%) of adults seeking cosmetic surgery report a history of teasing or bullying.<sup>(5, 11, 24-26)</sup> Bullying, defined as an imbalanced relationship characterized by intended and repeated aggression,<sup>(27)</sup> can have a range of adverse effects on children and adolescents.<sup>(28-32)</sup> For bullying victims, the negative effects may be similar to those caused by adult abuse or maltreatment.<sup>(33)</sup>

There are several gaps in knowledge regarding the relationship between cosmetic surgery and bullying. Firstly, most studies have used a retrospective design in adult samples. Retrospective studies have generally found that cosmetic patients or candidates report appearance teasing more frequently than controls.<sup>(11, 13, 24, 26, 34)</sup> However, retrospective studies are problematic because current or prior psychological problems can lead to biased recall.<sup>(35, 36)</sup> In young adults (e.g., undergraduate students), teasing history can uniquely predict interest in cosmetic surgery.<sup>(5, 25)</sup> Most bullying occurs during childhood and adolescence<sup>(24)</sup> but there has been little concurrent investigation of the extent to which adolescents currently involved in bullying desire cosmetic surgery.

Secondly, it is unknown whether all of those involved in bullying are more likely to desire cosmetic surgery or particularly those who are bullied. Adolescents who are purely bullied (i.e., victims) and those who are bullied but also bully others (i.e., bully-victims) tend to suffer the poorest outcomes.<sup>(37, 38)</sup> We might therefore expect that victims and bully-victims have an increased desire for cosmetic surgery because of poorer psychological functioning (e.g., low self-esteem, body esteem or high depressive symptoms). Those who purely perpetrate bullying (i.e., bullies) tend to have good psychological functioning and suffer few negative long term consequences.<sup>(37, 38)</sup> Some suggest that bullies harm others as a means to achieve dominance and social status, which may increase romantic and sexual opportunities.<sup>(39)</sup> We therefore hypothesized that bullies may also have an increased desire for cosmetic surgery as another strategy to achieve their status goals, irrespective of psychological functioning.

Thirdly, the majority of research has focused on females, which is understandable considering the sex ratio of cosmetic procedures is highly skewed (e.g., over 90% of procedures are performed on females).<sup>(1)</sup> However, boys, and especially those who have experienced bullying, may want to increase their muscle bulk and appear stronger, through body building or potentially cosmetic surgery.<sup>(31)</sup> In adolescents, bullying and victimization amongst boys and girls is approximately equal: boys tend to be bullies and bully-victims more often than girls, but there are few sex differences in victimization.<sup>(40-42)</sup>

This study addressed the following research questions: 1) do adolescents in all bullying roles (i.e., bullies, victims and bully-victim) have a greater desire for cosmetic surgery than adolescents uninvolved in bullying? 2) Are any effects of bullying on desire for cosmetic surgery sex-specific? 3) Is the relationship between bullying role and desire for cosmetic surgery direct or is it mediated by psychological functioning?

## Method

### Design and Participants

Approval for the study was obtained from the University of Warwick's ethical committee. A two-stage sampling process was used. In Stage 1, pupils from all year groups (i.e., 7-11; ages 11-16 years) of five secondary schools in the UK were approached (n=3883). As shown in the STROBE diagram<sup>(43)</sup> (fig. 1) 2782 (71%) agreed to take part and were screened for bullying involvement. All those who screened positive for bullying others (bullies; bully-victims) were invited to take part in Stage 2 alongside a sample of adolescents who were identified as victims or uninvolved. As there were a large number of uninvolved adolescents, a random sub-group balanced by sex were selected using Microsoft Excel's random number generator. In total 1088 pupils were selected for Stage 2. After dropouts and exclusions data was collected from 752 (69.1%). Just over half (53.3%) were female and the mean age was 13.6 years (SD=1.4).

### Procedure and Measures

Firstly, school head teachers were approached and following consent to school participation written information sheets were sent to pupils and their parents. Passive consent was obtained from parents and pupils gave their informed consent prior to any data collection. At both stages, electronic questionnaires were completed in a school classroom on a PC, laptop or tablet, with at least one investigator present. All pupils who completed Stage 1 and 2 from each school were entered into a prize draw to win a £50 voucher. Stage 2 was conducted approximately 1-2 months following stage 1.

## *Stage 1 measures*

### *Individual characteristics*

Sex, age, ethnicity, and parent education were included as covariates based on previous research indicating an association with cosmetic surgery.<sup>(6, 7, 18, 23, 44, 45)</sup> Parent's highest level of education i.e., did not complete school (<11 years), school (11 years), college (11-13 years), or university (>13 years), was used as a proxy for socioeconomic status<sup>(46)</sup> and was dummy coded (0=13 years or less ( $\leq 13$ ), 1=more than 13 years (>13) of education). As there were a low proportion of adolescents whose ethnicity was not White British (e.g., the next highest prevalence was Asian at 6.1%), the ethnicity variable was dummy coded (0=White British, 1=Other).

### *Bullying role*

We used two measures of bullying: self-report and peer nominations. For *self-reported bullying* we used the validated, Bullying and Friendship Interview schedule.<sup>(47-49)</sup> The schedule included 13 behavioral descriptions that relate to direct, relational and cyber-victimization (table 1). The items were repeated with slight wording adaptations to assess bullying perpetration. Adolescents were asked the frequency of each behavior during the past six months and responses of "quite a lot" or "a lot" indicated bullying involvement.<sup>(48, 49)</sup>

For the *peer nominations*, adolescents were given a list of names of all peers in their tutor group and asked to nominate up to three pupils (excluding themselves), who perpetrated or were a victim of bullying behaviors (table 1). Using the total number of nominations received and the total number of peers in the tutor group, z-scores were computed. Adolescents were identified as involved in bullying if their z-score was one standard deviation (SD) above (>1) the tutor group mean on the bullying items (bullies), victimization items (victims), or on both (bully-victims) (table 2). Adolescents were identified as uninvolved if they received zero nominations.

### *Psychological functioning*

We constructed a latent variable of psychological functioning from three scales: self-esteem,<sup>(50)</sup> body-esteem<sup>(51)</sup> and emotional problems (subscale of the Strengths and Difficulties Questionnaire).<sup>(52, 53)</sup> Differences in scale scores for each bullying role are reported in table 3. Self-esteem and emotional problems were self-reported at Stage 1 and body esteem was self-reported at Stage 2. The latent variable measures total psychological functioning: higher scores indicate higher functioning and wellbeing and lower scores indicate poorer functioning and distress.

### *Stage 2 measure*

#### *Desire for cosmetic surgery*

We used three items adapted from the Acceptance of Cosmetic Surgery Scale<sup>(8)</sup> to assess desire for cosmetic surgery. These were: 1) "I would like to have cosmetic surgery so that others would find me more attractive"; 2) "I would consider having cosmetic surgery as a way to change my appearance so that I would feel better about myself"; and 3) "If I was offered cosmetic surgery for free, I would consider changing a part of my appearance that I do not like". Responses were on a 5-point scale (1=not at all, 5=very much). These items have previously been used to assess overall and current interest in cosmetic surgery in a sample of undergraduate students.<sup>(25)</sup>

### *Statistical analysis*

Between-group comparisons were conducted using chi-square tests, t-tests, analysis of variance (ANOVA) and covariance (ANCOVA). The ANOVA tested the unadjusted associations between bullying roles and desire for cosmetic surgery and the ANCOVA adjusted for covariates (age, parent education and ethnicity) and included sex as a factor. A bullying x sex interaction term was added to

the model to test whether any effects were moderated (i.e., sex-specific). These analyses were performed using IBM SPSS 22.0. To examine the potential mechanisms between bullying role and desire for cosmetic surgery, path analyses were performed in Mplus version 7.4 using full information maximum likelihood, which can handle missing data.<sup>(54)</sup> We first estimated the psychological functioning variable using the scale scores of self-esteem, body esteem and emotional problems (reverse scored). Dummy variables were created (e.g. uninvolved=0, victim=1) to examine the direct effect of each bullying role on desire for cosmetic surgery and the indirect (mediated) effect via psychological functioning. Paths adjusted for covariates were computed for each bullying role separately. To assess model fit, the root-mean square error of approximation (RMSEA), the Comparative Fit Index (CFI) and the Tucker-Lewis index (TLI) were used. RMSEA values less than 0.06 and CFI and TLI values greater than 0.90 indicate an acceptable model.<sup>(55-57)</sup> Model results are expressed as standardized regression coefficients ( $\beta$ ).

## Results

### Missing and descriptive data

Missing data on desire for cosmetic surgery (2.5%) and the covariates (1.1%) were low. Missing data was highest on the body-esteem scale (15.4%) (table 3) and was related to age (odds ratio (OR) = 0.88, 95% confidence interval (95% CI) = 0.79 to 0.99,  $p=.034$ ); the odds of missing data was lower in older adolescents.

Descriptive data for each bullying role are reported in table 3. The majority of the sample were bully-victims (39.1%) and victims were most likely to be girls (67.6%). Victims and bully-victims had significantly poorer psychological functioning than bullies and uninvolved adolescents. Victims had

the lowest body esteem, self-esteem and had the highest emotional problem scores. Overall, mean interest in cosmetic surgery was low ( $M=1.79$ ,  $SD=1.06$ , range 1-5).

Do adolescents in all bullying roles have a greater desire for cosmetic surgery than adolescents uninvolved in bullying?

Bullies, victims and bully-victims were significantly more interested in cosmetic surgery than uninvolved adolescents. In the unadjusted model (ANOVA), bullying role significantly predicted desire for cosmetic surgery ( $F(3,748) = 17.57$ ,  $p<.001$ ) (see table 3 for means and standard errors). In the adjusted model (ANCOVA), bullying role ( $F(3,738) = 16.99$ ,  $p<.001$ ), sex ( $F(1,738) = 28.46$ ,  $p<.001$ ), age ( $F(1,738) = 16.61$ ,  $p<.001$ ) and parent education ( $F(1,738) = 3.87$ ,  $p<.049$ ) were significant. Desire for cosmetic surgery was highest in victims (table 3), in girls ( $M = 1.98$ ,  $SD = 1.16$ ) compared to boys ( $M = 1.56$ ,  $SD = 0.89$ ) and increased as age increased ( $\beta=.11$ ) and as parent education decreased ( $\beta=-.16$ ). When sex was included as a factor, the bullying x sex interaction was not significant ( $F(3,735) = 1.18$ ,  $p=.32$ ), which means that regardless of whether bullies, victims, and bully-victims were girls or boys they were more interested in cosmetic surgery than uninvolved peers (fig. 2).

Is the relationship between bullying and cosmetic surgery direct or mediated by psychological functioning?

#### *Psychological functioning*

All possible coefficients were estimated meaning the model was saturated (RMSEA=0.000, CFI=1.000, TLI=1.000); these fit indices do not represent a perfect, nor a problematic model.<sup>(58)</sup>



Factor loadings were high for self-esteem (.885), body esteem (.705) and emotional problems (.702), suggesting they were strong indicators of total psychological functioning.

### *Mediation analyses*

The model fits for bullies (RMSEA=0.028, CFI=0.985, TLI=0.975), victims (RMSEA=0.057, CFI=0.973, TLI=0.954) and bully-victims (RMSEA=0.045, CFI=0.978, TLI=0.963) were excellent. Fig. 3 shows the hypothetical mediation model and table 4 shows the total, direct and indirect effect of bullying role on desire for cosmetic surgery. There were both direct and indirect effects in victims and bully-victims: that is, there was a direct relationship between being bullied and a desire for cosmetic surgery, and another part of the relationship was mediated by poorer psychological functioning. In victims, the indirect effect was stronger than the direct effect, suggesting that being victimized resulted in poorer psychological functioning, which was driving their desire for cosmetic surgery. In bullies, desire for cosmetic surgery was direct and not related to psychological functioning. Desire for cosmetic surgery in victims was over double that of bullies (i.e., total effect). Examining the top 25<sup>th</sup> percentile of desire for cosmetic surgery scores revealed that 6.6% (n=50) of the sample had extreme scores, the majority of which were victims (11.5%) and bully-victims (8.8%).

Path diagrams that include the covariates for bullies, victims and bully-victims can be found in supplementary files 1, 2 and 3, respectively. Age contributed to the models for victims ( $\beta=0.117$  SE=0.051,  $p=.022$ ) and bully-victims ( $\beta=0.157$ , SE=0.042,  $p<.001$ ): as age increased so did desire for cosmetic surgery.

## Discussion

This study found that involvement in bullying in any role was associated with an increased desire for cosmetic surgery. The mechanisms were different for those who bully others and those who are

bullied (victims; bully-victims). Bullies want to look better independent of their psychological functioning, while being bullied was related to reduced psychological functioning and that partly mediated the effect between being victimized by peers and desire for cosmetic surgery. Victims had the greatest desire for cosmetic surgery and the most extreme scores.

The findings of this study offer several new contributions to knowledge. Firstly, previous research indicated that around 50% of adults seeking cosmetic surgery were teased or bullied, mostly during adolescence.<sup>(24)</sup> Results here suggest the relationship between bullying and cosmetic surgery is not limited to adult samples and is present in adolescents who are currently being victimized by their peers. The desire for cosmetic surgery in bullied adolescents is thus immediate and long lasting. Secondly, our findings highlight that being bullied is related to reduced psychological functioning (i.e., reduced body esteem, self-esteem and increased emotional problems), which in turn increases the desire for cosmetic surgery. This supports previous research suggesting that poor body image is one of the key drivers of desire for cosmetic surgery,<sup>(5, 9, 10)</sup> and adds to the literature by showing that bullying involvement during adolescence is an important driver of reduced body esteem and emotional functioning. There is now ample evidence that peer victimization is a childhood trauma that negatively affects psychological functioning, both concurrently and longitudinally.<sup>(28, 32, 33, 59, 60)</sup> Childhood trauma has been associated with poor post-operative outcomes (despite a technically good result) and an increased rate of recurrent cosmetic procedures.<sup>(61)</sup> Thus, those who are victims of bullying are at increased risk of seeking cosmetic surgery and we speculate, less likely to be satisfied with the outcome due to poorer psychological functioning related to symptoms of body dysmorphia,<sup>(12, 31)</sup> which are present in approximately one fifth of cosmetic surgery candidates.<sup>(62)</sup> Thirdly, this study showed that adolescents who bully others also have an increased desire for cosmetic surgery, which was unrelated to psychological functioning. Pure bullies generally have good psychological and physical health, are well known and often popular in the peer group.<sup>(37, 38, 63)</sup> Thus, for bullies, cosmetic surgery may simply be another tactic to increase social status, i.e., another strategy to look good and achieve dominance.<sup>(30)</sup>

Another new contribution is the lack of sex differences in the pathway from being bullied to cosmetic surgery desire. Although desire for cosmetic surgery was greater in girls than in boys, bullied boys and girls are both at increased risk of body dysmorphic symptoms as adults,<sup>(12, 31)</sup> and therefore may equally want to change their appearance through cosmetic surgery. The lower prevalence of cosmetic surgery amongst males might suggest that they alter their body in other ways, like body building<sup>(31)</sup> or disordered eating.<sup>(30)</sup> When males do undergo cosmetic surgery they are more likely to have poorer outcomes<sup>(4)</sup> and this might be explained by poorer psychological functioning before surgery as a result of peer victimization. Further research is needed to test this empirically.

Longitudinal research is now needed to determine whether adolescents involved in bullying undergo cosmetic procedures more often than adolescents uninvolved in bullying; to determine if the age at which they have their first procedure is earlier and whether peer victimization has adverse effects on long-term postoperative outcomes. Our findings already suggest that screening tools for cosmetic candidates should include assessments of bullying in all roles to better counsel candidates for cosmetic surgery and potentially reduce risks to the candidate and surgeon.<sup>(64)</sup> An adapted version of the bullying interview questionnaire,<sup>(47-49)</sup> as used in a study of adult male bodybuilders<sup>(31)</sup> could be administered to cosmetic surgery candidates. The brief questionnaire asks about six types of victimization behaviors (i.e., been kicked, had belongings taken or damaged, been called names, made fun of, socially excluded, had rumours spread about you) in childhood or adolescence, and asks the age at which this first happened. Responses to include “never/hardly ever”, “occasionally”, “quite a lot” (at least 2–3 times per month), or “a lot” (at least once a week). Victims are those who experience any of the six victimization behaviors at least 2–3 times per month. The items can be reworded to assess bullying perpetration.

There are some limitations to the study. Firstly, the cross-sectional design means we cannot determine causality. However, a meta-analysis has shown that the effects of bullying on poor

psychological functioning are stronger than vice versa<sup>(65)</sup> and that bullying is an environmental trauma, as shown in studies of discordant monozygotic twins.<sup>(66)</sup> Secondly, we reported on general bullying, but it is possible that specific types of bullying may be more or less likely to increase desire for cosmetic surgery. For example, relational bullying is often used in intrasexual competition by adolescent girls and is particularly damaging to body esteem;<sup>(67)</sup> it is also possible that the effects of several types of bullying may be cumulative.<sup>(5)</sup> Thirdly, the outcome measure focused on cosmetic surgery and not minimally invasive procedures (e.g., Botulinum toxin type A), which are increasingly prevalent, even amongst 13 to 19 year olds (up 1% between 2014-15).<sup>(1)</sup> The outcome measure was also broad and did not ask about specific types of procedures e.g., evidence suggests those who are bullied may particularly seek rhinoplasty.<sup>(12, 24)</sup>

In conclusion, adolescents involved in bullying have an increased desire for cosmetic surgery compared to their non-involved peers. For bullies, their desire appears to be driven by a need for status and admiration; for the bullied, it is partly related to their reduced psychological functioning. Addressing the mental health of bullied adolescents may reduce their desire for cosmetic surgery. Cosmetic surgeons should screen candidates for psychological vulnerability as recommended by the Royal College of Surgeons of England,<sup>(68)</sup> and may want to include a short screening questionnaire<sup>(31)</sup> for a history of peer victimization.

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Fig. 3 Path diagram for bully-victims.