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Body image and cosmetic medical treatments

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Abstract

Cosmetic medical treatments have become increasingly popular over the past decade. The explosion in popularity can be attributed to several factors—the evolution of safer, minimally invasive procedures, increased mass media attention, and the greater willingness of individuals to undergo cosmetic procedures as a means to enhance physical appearance. Medical and mental health professionals have long been interested in understanding both the motivations for seeking a change in physical appearance as well as the psychological outcomes of these treatments. Body image has been thought to play a key role in the decision to seek cosmetic procedures, however, only recently have studies investigated the pre- and postoperative body image concerns of patients. While body image dissatisfaction may motivate the pursuit of cosmetic medical treatments, psychiatric disorders characterized by body image disturbances, such as body dysmorphic disorder and eating disorders, may be relatively common among these patients. Subsequent research on persons who alter their physical appearance through cosmetic medical treatments are likely provide important information on the nature of body image.

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The increasing popularity of cosmetic surgery and cosmetic medical treatments

The field of cosmetic surgery has evolved in many ways over the past decade. According to the American Society of Plastic Surgeons (ASPS), in 1992, over 400,000 Americans underwent cosmetic surgery (ASPS, 2003; see Table 1). In 2002, almost 6.6 million Americans underwent cosmetic surgical and non-surgical treatments, an increase of 1600%. Common procedures such as breast augmentation and

rhinoplasty have increased by more than 700% in the past 10 years. Many new procedures have been introduced during that time, such that cosmetic medicine now includes both surgical and non-surgical treatments. In 2002, the top five cosmetic procedures were non-surgical: botulinum toxin (Botox[®], Myobloc[®]) injections, chemical peels, microdermabrasion, laser hair removal, and sclerotherapy. Botulinum toxin injections for cosmetic purposes were not performed a decade ago, and have only been tracked by the ASPS since 2000. Yet, in 2002, they were the most commonly performed procedure, with over 1.1 million patients receiving injections (ASPS, 2003). Given the popularity of these and other non-surgical treatments, it may be more appropriate to refer to “cosmetic

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Table 1
Cosmetic medical treatments performed in 1992, 1998, and 2002

Procedure	1992	1998	2002
Botox [®] injections	–	–	1123510
Breast augmentation	32607	132378	236888
Breast implant removal	18297	32262	43507
Breast lift (mastopexy)	7963	31525	56822
Breast reduction in women	39639	70358	101526
Breast reduction in men (gynecomastia)	4997	9023	14343
Buttock lift	291	1246	1388
Cellulite treatment	–	–	54464
Cheek implants (malar augmentation)	1741	2864	9224
Chemical peel	19049	66002	920340
Chin augmentation (mentoplasty)	4115	4795	18352
Collagen injections	41623	45851	441718
Dermabrasion	13457	12191	64678
Ear surgery (otoplasty)	6371	8069	39748
Eyelid surgery (blepharoplasty)	59461	120001	230672
Facelift (rhytidectomy)	40077	70947	117831
Fat injections	7865	25437	54823
Forehead lift	13501	36777	75638
Laser hair removal	–	–	587540
Laser skin resurfacing	–	55623	194808
Laser treatment of leg veins	–	–	107155
Lip augmentation (other than injectable materials)	–	–	18779
Liposuction	47212	172079	282876
Lower body lift	–	–	4545
Male-pattern baldness/hair transplantation	1955	2146	29031
Microdermabrasion	–	–	900912
Nose reshaping (rhinoplasty)	50175	55953	354327
Retin-A treatment	23520	106862	–
Sclerotherapy	–	–	511827
Thigh lift	1023	3785	4230
Tummy tuck (abdominoplasty)	16810	46597	85752
Upper arm lift	434	1939	4158
Wrinkle injection (fibril)	357	1463	–
Other cosmetic	1098	–	–
Totals	413208	1045815	6589886

(–) denotes data unavailable for year. *Note.* Adapted from The American Society of Plastic Surgeons (ASPS); <http://www.plasticsurgery.org>.

surgery” as a category of procedures under the larger umbrella of “cosmetic medical treatments”.

For years, cosmetic medical treatments were typically seen as the domain of plastic surgeons. Today, physicians from a variety of medical specialties (i.e.,

dermatology, otorhinolaryngology and others) offer these procedures. Surprising to many individuals, there is no regulation that prevents a physician from any medical specialty from performing cosmetic procedures. Furthermore, physicians who practice cosmetic medicine often work with medical aestheticians that provide some of the less invasive treatments, such as chemical peels. Thus, while the idea of 6.6 million Americans undergoing cosmetic medical treatments may be staggering, it is likely an underestimation of the number of persons who actually received these procedures.

At least three reasons for the increase in popularity of cosmetic medical treatments exist (Sarwer, Magee, & Crerand, in press). Changes in the medical community have likely played a significant role. Many procedures now can be performed with minimally invasive equipment. Advances in wound care have improved postoperative healing. As a result, almost all treatments are performed more safely and with less recovery time than before. These improvements are often used to market procedures directly to patients. Direct-to-consumer advertisements for pharmaceuticals, medical centers and hospitals are commonly seen on television, billboards and in magazines. Advertisements for cosmetic medical treatments are also found in these venues. Unlike other medical advertising, however, advertisements for cosmetic treatments often resemble advertisements typically found in fashion and beauty magazines. Beautiful models, often in stages of undress, frequently are used to depict postoperative results, along with the promise of improved self-esteem, quality of life and a “new you”.

Beyond direct advertising, other elements of the mass media have likely contributed to the growth. The newest advances in cosmetic medicine regularly can be found in the ever-increasing population of health and beauty magazines. Cosmetic surgery is regularly featured on talk shows and news magazine programs. Several television networks have aired programs which have followed cosmetic surgery patients pre- and postoperatively. In 2003, the ABC television show *Extreme Makeovers* was the second highest rated program for adults under 50.

The relentless bombardment of mass media images of beauty found in magazines, music videos, television programs and movies also have likely contributed to growth of cosmetic medicine. Images of celebrities

have long been used to influence the public's thoughts about their appearance (Etoff, 1999). Given the pervasiveness of the mass media and Internet in contemporary culture, the typical consumer is only minutes away from Hollywood's ideals of beauty at any time of day (Sarwer, Magee, & Crerand, *in press*). Historically, these icons are very thin; presently, many female icons are also muscular and large breasted. This combination of features rarely occurs naturally without restrictive dieting and excessive exercise as well as liposuction and breast augmentation to contour the body (Sarwer, Magee, & Clark, *in press*). This occurs, of course, before computer enhancements further perfect the image.

Although changes in the medical community and the mass media have contributed to the popularity of cosmetic medical treatments, the patients themselves have likely played the largest role. Like weight loss products and health club memberships, cosmetic medicine is another way we combat our increasing dissatisfaction with our appearance (Sarwer, Grossbart, & Didie, 2001). While a very small minority of Americans undergoes cosmetic surgery annually, 55% of women indicated that they approved of cosmetic surgery and 30% said that they would consider it for themselves now or in the future (ASAPS, 2003). In a recent study of over 500 female college students, 5% indicated that they had undergone a cosmetic medical treatment; 40% said they would consider having surgery in the near future; and 48% said they would consider it in middle age (Sarwer et al., 2003).

The demographics of the typical patient also have changed. Over the last decade, patients have become younger. In 2002, almost 70% of patients who underwent cosmetic medical treatments were between the ages of 19 and 50 (ASPS, 2003). Almost 225,000 adolescents (4%) underwent a cosmetic medical treatment. The percentage of male patients (15%) increased to its highest level ever. A similar percentage of patients (16%) were from racial minority groups (ASPS, 2003).

Perhaps the increase in popularity of cosmetic medical treatments is because we have figured out what social psychologists and evolutionary biologists have tried to tell us over the past several decades—that appearance matters. Hundreds of studies have suggested that physically attractive individuals, as compared to those who are less attractive, are perceived more fa-

vorably and receive preferential treatment in a wide range of situations across the lifespan (e.g., Eagly, Ashmore, Makhijani, & Longo, 1991; Feingold, 1992; Langlois et al., 2000). Evolutionary biologists suggest that these preferences are genetically programmed to serve the ultimate evolutionary goal of reproduction. Several studies have suggested that individuals are more responsive to youthfulness, symmetry of features and a lower waist-to-hip ratio because they signal the reproductive capability of a potential mate (Etoff, 1999). From this perspective, using cosmetic procedures to alter the physical characteristics of an otherwise healthy body may make a great deal of sense (Sarwer, Magee, & Clark, 2003).

Psychological investigations of persons who undergo cosmetic medical treatments: a brief history

Since the early days of the field of cosmetic surgery, plastic surgeons have been interested in the psychological characteristics of their patients. Much of this interest has been rather practical in nature. Surgeons have studied the personality characteristics of their patients with the hope of identifying patients who may be psychologically inappropriate for surgery or those who are likely to be dissatisfied with a technically successful surgical outcome (Sarwer, Pertschuk, Wadden, & Whitaker, 1998). Psychologists and psychiatrists have collaborated on many of these studies. Surgeons and mental health professionals have shared an interest in postoperative outcome—to see if surgery leads to an improvement in psychological functioning (Sarwer, Pertschuk, et al., 1998). These studies have most typically included clinical interview of patients, standardized psychological tests, or a combination of the two. These studies can be classified into three generations of research (Sarwer, Magee, & Crerand, *in press*).

First-generation studies

The earliest investigations of the psychological characteristics of cosmetic surgery patients were conducted at Johns Hopkins University during the 1950s and 1960s. This group of researchers, which included plastic surgeons and psychiatrists, primarily used clinical interviews to assess psychological character-

istics pre- and postoperatively. Patients' responses appeared to be interpreted from a psychodynamic perspective, the dominant theoretical orientation of the day. These studies reported high rates of psychopathology among cosmetic surgery patients (e.g., Edgerton, Jacobson, & Meyer, 1960; Meyer, Jacobson, Edgerton, & Canter, 1960; Webb, Slaughter, Meyer, & Edgerton, 1965). For example, a study of 98 patients seeking a variety of procedures reported that 70% had a psychiatric diagnosis, most commonly characterized as neurotic depression or passive-dependent personality (Edgerton et al., 1960). Postoperative assessments of these patients yielded mixed results. Some studies reported favorable psychological changes such as decreases in depressive symptoms (Webb et al., 1965). Others suggested that significant numbers of patients were still experiencing psychological distress postoperatively (Edgerton et al., 1960; Meyer et al., 1960).

Second-generation studies

During the 1970s and 1980s, researchers began to incorporate standardized psychometric tests into their studies. Investigations that used the Minnesota Multiphasic Personality Inventory found essentially normal profiles among breast augmentation patients (Baker, Kolin, & Bartlett, 1974), facelift patients (Goin, Burgoyne, Goin, & Staples, 1980), and rhinoplasty patients (Micheli-Pellegrini & Manfreda, 1979; Wright & Wright, 1975). An investigation utilizing the California Personality Inventory reported few differences among breast augmentation patients and normal controls, with each of their scores falling within the norms of the measure (Shipley, O'Donnell, & Bader, 1977). Only modest evidence of psychopathology has been found in other studies using standardized paper-and-pencil assessments (Hay, 1970; Hollyman, Lacey, Whitfield, & Wilson, 1986; Robin et al., 1988).

Several second-generation studies have suggested that patients experience psychological benefits postoperatively. Reductions in depressive symptoms and improvements in self-esteem were reported in studies of breast reduction (Goin, Goin, & Gianini, 1977) and breast augmentation patients (Ohlsen, Ponten, & Lambert, 1978). Studies of rhinoplasty patients reported reductions in anxiety, obsessiveness, and paranoia postoperatively (Robin et al., 1988), as well as improvements in self-concept (Marcus, 1984).

Other studies have reported no change in preoperative psychological characteristics (Hollyman et al., 1986; Wright & Wright, 1975).

Third-generation studies

Investigations in the 1990s have continued to use both clinical interview and psychometric assessments. These studies have attempted to address some of the methodological limitations of the earlier generations of studies. Clinical interview investigations have typically used established diagnostic criteria to assess psychopathology. Psychometric investigations have more consistently used both pre- and postoperative assessments of psychological characteristics.

Napoleon (1993) investigated the rate of preoperative psychopathology among 133 patients using a clinical interview and behavioral observations. Approximately 20% of patients met DSM-III-R diagnostic criteria for an Axis I disorder, primarily anxiety and mood disorders, whereas 70% of patients received an Axis II diagnosis. Similarly, 48% of 415 Japanese cosmetic surgery patients received a psychiatric diagnosis, notably neurotic and hypochondriacal disorders, based on International Classification of Diseases diagnostic criteria (Ishigooka et al., 1998).

At least two psychometric investigations have demonstrated improvements in psychological functioning postoperatively. An investigation utilizing the several self-report questionnaires found improvements in quality of life and depressive symptoms postoperatively among 105 patients who underwent a variety of procedures (Rankin, Borah, Perry, & Wey, 1998). An investigation of 79 rhinoplasty patients found a decrease in anxiety and neuroticism at both 6 months and 5 years postoperatively (Ercolani, Baldaro, Rossi, & Trombini, 1999).

Summary

Reaching definitive conclusions from the three generations of research is difficult (Sarwer & Crerand, 2002; Sarwer, Magee, & Crerand, in press; Sarwer, Pertschuk, et al., 1998). Results from the clinical interview studies and psychometric investigations have essentially contradicted each other. First-generation studies, which reported high rates of psychopathology, mainly relied on psychodynamically based clin-

ical interviews. Patients' appearance concerns were frequently interpreted as symbolic displacements of intrapsychic conflicts, and thus, inherently were reflective of psychopathology. As a result, the high rates of psychopathology may be a function of the theoretical biases of the investigators. Second-generation studies, which relied more heavily on psychometric assessments, reported far less psychopathology. However, methodological problems with these investigations, such as the failure to include both pre- and post-operative assessments or appropriate control groups, limit the validity of these findings (Sarwer, Magee, & Crerand, *in press*; Sarwer, Pertschuk, et al., 1998).

The third generation of studies has attempted to improve on many of these methodological problems. Interestingly, the assessment method has continued to predict the results of the research. Interview-based investigations have found high rates of psychopathology. Although these studies have used formal diagnostic criteria, like the first generation of studies, they have relied upon unspecified clinical interviews to assess patients. Thus, replication and verification of the results is difficult at best. Recent psychometric investigations reported improvements in several psychological characteristics postoperatively. However, most have failed to include appropriate control or comparison groups.

Despite these methodological weaknesses and contradictory findings, at least two tentative conclusions can be drawn from the body of research (Sarwer, Magee, & Crerand, *in press*; Sarwer, Pertschuk, et al., 1998). First, cosmetic surgery patients exhibit a variety of psychological symptoms and conditions. Second, although an increasing number of studies have documented psychological improvements postoperatively, it likely remains premature to confidently conclude that cosmetic medical treatments lead to positive psychological benefits in the majority of patients.

The theoretical relationship between body image and cosmetic medical treatments

Interestingly, relatively few studies from the three generations of research have examined the relationship between body image and cosmetic surgery. Clinical reports have suggested that women who seek cosmetic surgery reported elevated dissatisfaction with their appearance preoperatively and improvements in body

image postoperatively (Sarwer, Pertschuk, et al., 1998; Sarwer, Wadden, Pertschuk, & Whitaker, 1998a). Nevertheless, the relationship between body image and cosmetic medical treatments has been the focus of empirical study only within the past decade. These investigations may represent the fourth generation of research on psychological aspects of cosmetic surgery.

Borrowing heavily from existing body image theory, Sarwer et al. (1998a) proposed a theoretical model of the relationship between body image and cosmetic surgery (the model readily applies to surgical and nonsurgical cosmetic treatments). According to this model, physical and psychological factors are theorized to influence both body image as well as the decision to seek cosmetic procedures. The objective reality of appearance is the first component of the model. Physical appearance is an important part of body image as it is a primary source of information that others use to guide social interactions. Thus, it plays a primary role in determining beliefs and behaviors about one's body.

Psychological influences of body image include perceptual, developmental, and sociocultural factors (Sarwer et al., 1998a). Perceptual factors involve a person's ability to accurately evaluate the size, shape, and texture of a physical characteristic. Cosmetic surgery patients often describe their physical appearance in ways that do not correspond to the objective reality of their appearance. Developmental factors, such as maturational timing and appearance-related teasing, also are thought to play an influential role. Cosmetic surgery patients frequently speak of the emotional pain of being teased about their appearance even decades after the teasing. Sociocultural influences on body image include the interaction of cultural ideals of beauty (i.e., the images of physical perfection portrayed by the mass media) with tenets of self-ideal discrepancy and social comparison theory. From this perspective, people compare themselves to individuals who represent cultural ideals of beauty and find that their own appearances do not measure up. The discrepancy between one's actual appearance and an ideal, whether that ideal is that of a celebrity, friend, or personal ideal, results in body image dissatisfaction (Heinberg, 1996).

These physical and psychological factors are thought to influence attitudes toward appearance and body image. These attitudes are thought to be multidimensional.

mensional, although two basic elements—body image valence (otherwise known as body image investment) and body image value (body image evaluation)—may play the most central role (Cash, 2002). Body image valence/investment is defined as the measure of the importance of body image to one's self-esteem. Body image value/evaluation characterizes the degree to which one is satisfied or dissatisfied with one's appearance. The interaction between the two is thought to influence a person's decision to seek cosmetic treatments (Sarwer et al., 1998a). Persons with a high body image valence, who derive much of their self-esteem from their body image, and high levels of body image dissatisfaction, may be more likely to present for cosmetic treatments as compared to those with little investment or dissatisfaction with their body image (Sarwer et al., 1998a). Thus, body image dissatisfaction may serve as the motivational catalyst to the pursuit of cosmetic medical treatments (Sarwer & Didie, 2002).

Empirical studies have found that cosmetic surgery patients report heightened body image dissatisfaction prior to surgery (e.g., Bolton, Pruzinsky, Cash, & Persing, 2003; Didie & Sarwer, 2003; Sarwer, Bartlett, et al., 1998; Sarwer, LaRossa, et al., 2003; Sarwer, Wadden, Pertschuk, & Whitaker, 1998b; Sarwer, Whitaker, Wadden, & Pertschuk, 1997). Most (Bolton et al., 2003; Didie & Sarwer, 2003; Sarwer et al., 1998b), but not all (Sarwer, LaRossa, et al., 2003; Sarwer et al., 1997) studies have found similar levels of investment in appearance between patients and controls or norms. Greater body image investment, however, has been associated with more favorable attitudes toward cosmetic surgery (Sarwer et al., 2003). Finally, studies have found that most patients report improvements in their body image postoperatively (e.g., Bolton et al., 2003; Cash, Duel, & Perkins, 2002; Sarwer, Wadden, & Whitaker, 2002). These studies, as well as others that have specifically investigated body image, can be grouped as facial or body procedures.

Body image and facial procedures

Cosmetic facial procedures traditionally are some of the most popular cosmetic treatments (see Table 1). This is not surprising, given that the face is typically

an individual's most prominent and defining physical feature. Despite the popularity of cosmetic facial procedures and the prominent role of the face in defining an individual's body image, relatively few studies have investigated body image among patients seeking these treatments. In many instances, individuals who underwent these procedures have been studied along with person who underwent surgical treatments of the body. For example, in a preoperative investigation of 100 women who sought a range of procedures, 65 women sought facial procedures (Sarwer et al., 1998b). Women in this study completed two measures of body image (the Multidimensional Body-Self Relations Questionnaire [MBSRQ; Brown, Cash, & Mikulka, 1990] and the Body Dysmorphic Disorder Examination, Self-Report [BDDE-SR; Rosen & Reiter, 1996]) at their initial consultation for surgery. As compared to the norms of the measures, patients reported higher levels of dissatisfaction with the feature for which they were seeking surgery, but not increased dissatisfaction with their overall body image. They also did not report a greater investment in their appearance; although they did report a greater investment in their health and fitness. A postoperative investigation of 45 of these women found significant improvements in the degree of dissatisfaction with the feature altered by surgery, but no significant change in overall body image (Sarwer et al., 2002).

Rhytidectomy and blepharoplasty

Traditionally, two of the most popular surgical treatments are rhytidectomy (facelift) and blepharoplasty (eyelid surgery). These procedures are typically performed with the goal of providing the patient with a more youthful appearance. To our knowledge, only one study has specifically investigated the body image concerns of women interested in these procedures (Sarwer et al., 1997). As compared to the norms of the MBSRQ, 97 women who sought these procedures reported, preoperatively, a greater investment in and satisfaction with their overall appearance. As compared to a significantly younger sample of 32 women interested in rhinoplasty (nose reshaping), facelift and blepharoplasty patients reported less dissatisfaction with their facial features, as assessed by the BDDE-SR. This finding suggested that patients who seek anti-aging procedures may experience less

feature-specific body image dissatisfaction but may attach greater importance to their body image as compared to younger patients. This result, however, also may be function of the significant difference in age between the two groups.

Rhinoplasty

With the exception of the study of discussed above, no study has yet to specifically assess the body image concerns of rhinoplasty patients. This is surprising for several reasons. First, rhinoplasty is historically one of the most popular cosmetic procedures. Second, the surgery is typically performed on adolescent girls and young women, who are frequent participants in body image research studies. Finally, rhinoplasty has probably been the focus of more psychiatric discussion than any other cosmetic surgical procedure. During the first generation of research, a young woman's interest in rhinoplasty was typically interpreted as symbolic of an unconscious wish to remove a part of her father's personality from her own (Sarwer, 2001). Of course, a more straightforward and plausible interpretation of the woman's interest in rhinoplasty is that she is self-conscious of her prominent nose in social situations and hopes that the surgery will increase her self-confidence and improve her body image (Sarwer, 2001).

Craniofacial procedures

A small number of patients consult with plastic surgeons to undergo extensive recontouring of their facial features through craniofacial surgery. The procedures typically involve the repositioning and reshaping of bone and soft tissue in order to create a different appearance. Some of these patients present with the atypical complaint of their heads being out of proportion to their bodies or that their faces are too thin or too wide. Edgerton, Langmann, and Pruzinsky (1990) have described postoperative body image improvements among 15 patients with these concerns. Unfortunately, body image changes were not assessed with psychometric measures. The clinical descriptions of several patients suggested that some may have been experiencing severe body image disturbances consistent with body dysmorphic disorder.

Non-surgical treatments

As seen in Table 1, cosmetic treatments, such as botulinum toxin injections, collagen injections, and laser skin resurfacing have surpassed the traditional surgical treatments in popularity. Little is known about the body image concerns of these patients. Some have been included in previous body image studies, but they have yet to be studied in isolation.

Body image and body contouring procedures

When “body image” and “cosmetic surgery” are considered together, most people are likely think of body contouring procedures—breast surgery (augmentation and reduction) as well as liposuction and abdominoplasty. Numerous anecdotal clinical reports have described the body image concerns of breast augmentation and reduction patients. In the last several years, studies have empirically investigated several aspects of these concerns. Somewhat surprisingly, only one study has specifically investigated the body image concerns of abdominoplasty patients and none has studied liposuction patients.

Breast augmentation

Cosmetic breast augmentation surgery is now the most popular cosmetic surgery for women, surpassing liposuction (ASPS, 2003). Clinical reports from the first three generations of research have described the body image concerns of breast augmentation patients (e.g., Baker et al., 1974; Killman, Sattler, & Taylor, 1987; Schlebusch, 1989; Shipley et al., 1977). Several empirical studies have been conducted in the past few years. Preoperatively, breast augmentation candidates reported less dissatisfaction with their breasts and overall body image as compared to breast reduction patients (Sarwer, Bartlett, et al., 1998). Nevertheless, more than 50% of augmentation patients reported avoidance of being seen undressed by others, checking the appearance of the breasts, and camouflaging the appearance of their breasts with special brassieres or clothing.

At least three studies have compared the preoperative body image concerns of breast augmentation candidates to women who were not interested in

augmentation surgery. As compared to an age-matched sample of women, breast augmentation candidates reported significantly greater dissatisfaction with their breasts (Nordmann, 1998). Augmentation candidates also reported more frequent negative emotions in situations where they were aware of their physical appearance, such as when wearing a bathing suit, trying on clothing, or during sexual relations. The frequency of these upsetting experiences was negatively related to self-esteem.

Two recent studies compared breast augmentation candidates preoperatively to small-breasted women not seeking surgery and replicated several of these findings. Breast augmentation patients, as compared to controls recruited from a university community, reported greater investment in their overall appearance as well as increased dissatisfaction with their breasts and greater distress about their breasts in social situations (Sarwer et al., 2003). Augmentation patients also rated their ideal breast size, as well as the breast size preferred by women, as significantly larger than did controls. Finally, augmentation candidates reported more frequent appearance-related teasing and more frequent use of psychotherapy as compared to controls.

Breast augmentation patients, as compared to healthy controls recruited from a gynecology outpatient clinic, also reported greater dissatisfaction with their breasts preoperatively (Didie & Sarwer, 2003). The two groups, however, did not differ on overall investment or dissatisfaction with appearance or greater awareness or internalization of sociocultural influences on appearance. Overall, surgical candidates reported being motivated for surgery by their own feelings about their breasts. Romantic partners and sociocultural ideals of beauty played less of a role in the decision to seek surgery. This study, as well as the investigation by Sarwer et al. (2003), found that breast augmentation candidates, as compared to controls, also reported a greater investment in their health and fitness.

In the absence of postoperative complications, which occur in approximately 10–30% of patients (Sarwer, Nordmann, & Herbert, 2000), the majority of breast augmentation reported improvements in body image postoperatively (e.g., Baker et al., 1974; Sihm, Jagd, & Pers, 1978; Young, Nemecek, & Nemecek, 1994). In one of the largest studies of

psychosocial outcomes following breast augmentation, greater than 90% of patients reported an improved body image and more than 85% reported an enhanced self-image postoperatively (Cash et al., 2002). A novel investigation of women who had their silicone breast implants removed also demonstrated the impact of breast augmentation on body image (Walden, Thompson, & Wells, 1997). After removal of the implants, women reported less satisfaction with their appearance, fewer positive appearance-related thoughts, and greater discrepancy between their ideal and current breast size. Removal of breast implants (experienced by over 43,000 women in 2002 [ASPS, 2003]), much like loss of a breast to cancer, can have a dramatic impact on a woman's body image.

Breast reduction

Although our culture commonly idealizes large breasts, extremely large breasts frequently are problematic for the women who have them. Many women with large breasts suffer from neck, shoulder, back and breast pain, skin irritations as well as shoulder grooving from brassiere straps. Unlike other patients, physical rather than psychological discomfort often motivates the pursuit of cosmetic surgery. Thus, breast reduction surgery is often considered a reconstructive, and not cosmetic, procedure. Nevertheless, these women report significant dissatisfaction with their breasts and overall body image preoperatively (Sarwer, Bartlett, et al., 1998). They report significant embarrassment about their breasts in public areas and social settings, believe that others are noticing their breasts to a great extent, and report significant avoidance of physical activity. Postoperatively, breast reduction patients typically report substantial improvement or elimination of physical pain and social embarrassment, as well as lower levels of body image dissatisfaction (Glatt et al., 1999).

Liposuction and abdominoplasty

Liposuction and abdominoplasty are typically performed to improve the shape of the midsection of the body. Although a very popular cosmetic procedure and one ripe for body image study, liposuction has

received very little empirical attention. This may be because liposuction procedures can vary greatly from patient to patient. In addition, liposuction is frequently used to remove fat from the arms, legs, chest and face. A recent study of 30 abdominoplasty patients assessed pre- and 2 months postoperatively found significant improvements in overall body image as well as decrease in self-consciousness during sexual activity (Bolton et al., 2003). Similar to other studies, patients reported no change in the degree of investment in their appearance.

Summary of the empirical studies of body image and cosmetic medical treatments

Based on the relatively few empirical investigations of body image in cosmetic surgery patients conducted over the past several years, a few tentative conclusions can be drawn. Early investigations that compared cosmetic surgery patients to norms provided with the psychometric measures suggested that preoperative surgical patients reported increased dissatisfaction with the feature considered for surgery, but not necessarily greater dissatisfaction in overall appearance. Subsequent studies with more appropriate control groups have replicated these findings. These studies also have suggested that cosmetic surgery patients are more invested in their health and fitness. With the exception of two studies, significant differences in appearance investment have not been found. At least three studies have found improvements in body image following cosmetic surgery.

For many individuals, cosmetic surgery appears to be an adaptive strategy to address body image dissatisfaction. At least one study has suggested that breast augmentation patients, as compared to controls, reported a greater frequency of appearance-related teasing and greater use of psychotherapy in the year prior to surgery. Thus, for some persons, the pursuit of cosmetic surgery may be related to some form of psychopathology, which may be more appropriately treated by psychotherapy than cosmetic surgery. Clearly, additional studies are needed to further determine the relationship between body image dissatisfaction and psychopathology among persons who seek cosmetic medical treatments.

Extreme body image dissatisfaction and cosmetic medical treatments

Results from several of the body image studies raise an interesting issue—can someone be too dissatisfied with his or her body image for a cosmetic medical treatment? Extreme body image dissatisfaction can be a feature of several forms of psychopathology (Castle & Phillips, 2002). Similarly, almost all forms of psychopathology have been documented among persons who seek cosmetic medical treatments (Sarwer et al., *in press*). Body dysmorphic disorder (BDD) and eating disorders may be the most common body image disorders among persons who seek these procedures (Sarwer & Didie, 2002).

Body dysmorphic disorder

Reports of BDD likely appeared in the cosmetic surgery and dermatology literatures prior to its formal inclusion in the DSM-III-R in 1987. Researchers at Johns Hopkins described both the “minimal deformity” and “insatiable” cosmetic surgery patient (Edgerton et al., 1960; Knorr et al., 1967). These patients typically complained of concerns with slight or nonexistent appearance defects or made multiple requests for surgery on the same feature. They also were largely dissatisfied with their postoperative results (Edgerton et al., 1960). Such reports are consistent with descriptions of individuals with BDD who present for cosmetic procedures today.

Patients with BDD can experience such high levels of emotional distress that they may take desperate measures to correct their perceived defect. Use of harsh household chemicals or sharp objects to pick at defects are not uncommon. Others have resorted to “do-it-yourself” surgeries in an attempt to address their extreme dissatisfaction (Veale, 2000). BDD patients seek out cosmetic medical treatments with great frequency. Phillips, Grant, Siniscalchi, and Albertini (2001) reported that 76% of 289 BDD patients had sought and 66% received nonpsychiatric medical treatment for their perceived defects. Similarly, Veale et al. (1996) found that nearly half of the BDD patients in their sample had sought cosmetic treatments, with 26% having undergone at least one cosmetic surgical procedure.

The rate of BDD among persons who seek cosmetic medical treatments is thought to be greater than that found in the general population. A study that used the BDDE-SR to assess BDD symptomatology found that 7% of cosmetic surgery patients met diagnostic criteria (Sarwer et al., 1998b). An interview-based study of Japanese cosmetic surgery patients reported that 15% of patients had BDD (Ishigooka et al., 1998). Two investigations of dermatology patients that used a brief screening measure reported that 12–15% of patients met criteria for BDD (Phillips, Dufresne Jr., Wilkel, & Vittorio, 2000; Dufresne Jr., Phillips, Vittorio, & Wilkel, 2001).

Although BDD patients frequently believe that cosmetic treatments are the only viable interventions for their distress, they rarely benefit from these procedures. The majority of patients report dissatisfaction with the results (Veale, 2000). Some reports suggest that cosmetic treatments may exacerbate preoccupation with the feature or shift the concern to another feature. One study reported that 83% of all cosmetic procedures reported by persons with BDD led to no change or an increase in BDD symptoms (Phillips & Diaz, 1997). A more recent investigation found that only 7.3% of all nonpsychiatric treatments resulted in improvements in BDD symptoms (Phillips et al., 2001). Of additional concern, there have been reports that patients with BDD may pursue legal action or become violent toward their surgeon. Forty percent of surgeons in a recent survey reported that a patient with BDD had threatened them legally or physically (Sarwer, 2002). Taken together, these reports suggest that cosmetic treatments may be contraindicated for patients with BDD. Unfortunately, at present, only 30% of aesthetic surgeons believe that BDD is always a contraindication to cosmetic surgery (Sarwer, 2002).

Eating disorders

Given the central role of body image in anorexia nervosa and bulimia nervosa, both disorders may occur with greater frequency among persons interested in cosmetic medical treatments. To date, this issue has not been formally studied. Case reports of women with anorexia and bulimia who have undergone both facial and bodily procedures have suggested that surgery led to an exacerbation of eating disorder symptoms (McIntosh, Britt, & Bulik, 1994; Willard,

McDermott, & Woodhouse, 1996; Yates, Shisslak, Allender, & Wollman, 1988). In contrast, a report of breast reduction patients suggested that several patients, but not all, reported an improvement in eating disorder symptoms postoperatively (Losee, Serletti, Kreipe, & Caldwell, 1997).

Eating disorders may be of particular concern for patients interested in body contouring procedures. Many breast augmentation patients have a low normal to below normal body mass index, leading to some concern about the presence of an eating disorder (Didie & Sarwer, 2003; Sarwer, Bartlett, et al., 1998; Sarwer et al., 2003). Eating disorders also may occur with some frequency in persons interested in liposuction and abdominoplasty. Many people mistakenly believe that these procedures can produce a significant weight loss. The amount of fat and tissue removed, however, typically results in little change in body weight. Thus, neither is considered appropriate treatment for weight reduction.

Conclusions and future directions

Cosmetic medical treatments have become an increasingly popular and acceptable means of improving physical appearance. Medical and mental health professionals' interest in persons who seek these treatments predates the recent explosion in popularity. The first three generations of research sought to evaluate the pre- and postoperative psychological characteristics of these patients. Differences in assessment techniques and other methodological weaknesses have made it difficult to draw conclusions from these studies. Nevertheless, individuals who seek these procedures appear to exhibit a variety of psychological symptoms and conditions. While patients typically report satisfaction with their postoperative result, based on existing studies, it may be too early to conclude that all procedures lead to positive psychological outcomes.

More recently, studies have begun to focus on the construct of body image and its relationship to cosmetic medical treatments. Empirical evidence from a growing number of studies suggests that cosmetic patients report body image dissatisfaction preoperatively and improvements in body image postoperatively. While research suggests that increased body image

dissatisfaction may be common among these patients, persons with severe body image disturbances, such as those with BDD or eating disorders, may be poor candidates for these treatments. Reports to date suggest that the procedures may exacerbate, rather than alleviate, body image dissatisfaction.

Cosmetic medical treatments likely will continue to increase in popularity. This continued growth highlights the need for future studies of the psychological characteristics of patients who seek these procedures and of the psychological outcomes resulting from them. There are several areas that warrant particular attention. Methodologically sound investigations are needed, as methodological problems from the previous generations of research have limited the validity and generalizability of the findings. Future studies need to include reliable and valid measures, pre- and post-treatment assessments, and appropriate control or comparison groups.

With the exception of breast augmentation and breast reduction patients, little is known about the body image concerns of patients who seek body-contouring procedures. Similarly, few studies have investigated body image dissatisfaction in persons who seek facial procedures such as rhinoplasty and nonsurgical treatments such as botulinum toxin injections. Factors thought to play key roles in the development of body image dissatisfaction have not been thoroughly investigated. The role of sociocultural factors, such as the promotion of the unrealistically thin female body ideal in the media, has received only modest attention. Similarly, developmental factors, such as early physical maturation and teasing, and their contributions to pre- and postoperative body image dissatisfaction warrant further study. Computer imaging tools commonly used by cosmetic surgeons for clinical purposes can be used to assess perceptual aspects of body image in patients pre- and postoperatively.

Another area of interest is the relationship of extreme body image dissatisfaction, as found in BDD and eating disorders, to cosmetic medical treatments. As noted above, evidence from case reports suggest that patients with both disorders typically do not benefit from cosmetic treatments. This issue, however, awaits confirmation in prospective studies. Similarly, the rate of other forms of psychopathology among cosmetic patients is unknown. While all psychiatric disorders likely exist within the population, it is un-

known if some disorders present more frequently than others. Previous interview-based studies, which have suggested high rates of psychopathology, have failed to utilize formal, structured clinical interviews conducted by blind assessors. This is a critical methodological challenge for future studies that hope to conclusively establish the rate of psychopathology among prospective patients.

The rate of psychopathology among these patients is an interesting issue; the relationship between pre-existing pathology and postoperative outcome is a more compelling one. Even if certain disorders occur more frequently within the population of cosmetic surgery patients, the presence of these disorders is irrelevant if they do not affect post-treatment outcome. This is a practical issue among great interest within the cosmetic medicine community that has yet to be answered. Even among patients free of psychopathology, the psychological impact of these treatments warrants further study. A few studies suggest that patients experience improvements in psychological functioning within the first postoperative year. It is unclear, however, if these improvements endure over time. Quite possibly, these improvements may diminish, particularly if they are related to the frequency of positive feedback patients receive about their postoperative appearance. As increasing numbers of people are willing to take on the risks and expense of cosmetic medical treatments, it will become even more important to demonstrate that the treatments lead to significant improvements in body image and other areas of psychosocial functioning.

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