RESEARCH

Cosmetic surgery history and health service use in midlife: Women's Health Australia

Rafat Hussain, Margot Schofield and Deborah Loxton

ABSTRACT

Objective: To explore, among middle-aged women, the relationship between having ever had cosmetic surgery and the frequency of use of other health services.

Design: Retrospective analysis of cross-sectional survey data from the Women's Health Australia (WHA) study.

Setting and participants: A nationally representative sample of the "mid-aged" (45–50 years) cohort of women who participated in the 1996 WHA baseline postal survey. Responses were received from 14 100 women (a response rate of 54%).

Results: Seven per cent of women reported ever having had cosmetic surgery. After adjusting for demographic variables, multivariate analysis confirmed that women who had had cosmetic surgery were significantly more likely to use health services more frequently (eg, surgical procedures, consultations with specialists and alternative healthcare providers). Cosmetic surgery was also associated with a greater number of chronic illnesses and use of medication for anxiety and sleep problems.

Conclusion: Further research is needed to determine whether cosmetic surgery is directly related to health conditions or to attitudinal or psychosocial variables. Such research should examine whether alternative interventions may be more cost-effective in dealing with the issues that motivate women to seek cosmetic surgery.

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THE DEMAND for cosmetic surgery is growing rapidly in many Western countries,[1,2] apparently fuelled by societal perceptions of the ideal body image.[3,4] For example, a large population-based study in Devon, UK, found that concern about physical appearance is widespread among the general population and does not vary markedly by socioeconomic status or standard of living.[5] Similarly, a US study has shown that many Americans are dissatisfied with their physical appearance.[6]

An important healthcare consequence of widespread dissatisfaction with body appearance has been the marked increase in elective cosmetic surgery procedures for primarily *aesthetic* reasons.[7] In the United States, the top five cosmetic surgery procedures performed in 2001 were rhinoplasty, liposuction, eyelid surgery, breast augmentation and facelifts, amounting to a total of over 1.2 million surgical procedures. An additional 3.2 million chemical peels, microdermabrasions and botulinum toxin A injections were performed during the same year.[8] These figures include only selected procedures conducted by certified cosmetic surgeons or therapists and exclude procedures conducted by general surgeons and other specialists.

In Australia, there is no national coordinated system for collecting information on cosmetic surgery patients, procedures or outcomes. Such data are not available through the Australian Health Insurance Commission records, as these procedures do not usually carry a Medicare insurance rebate. Nor does the Australian Society of Plastic Surgeons (Marlene Watson, Chief Executive Officer, ASPS, personal communication) or the Australasian College of Cosmetic Surgery (Dr Anoop Rastogi, Secretary, ACCS, personal communication) maintain a database on the number and type of procedures conducted in Australia. There is very limited information on the prevalence of cosmetic surgery, the characteristics of people who undergo cosmetic procedures or their reasons for doing so. A recent ASPS survey found that approximately 50000 cosmetic surgery procedures were conducted by its members (Marlene Watson, ASPS, personal communication). The ASPS survey figures do not indicate cosmetic procedures carried out by medical practitioners who are not surgeons or plastic surgeons, and are therefore likely to be an underestimate of the prevalence of cosmetic surgery in Australia.

The Australian Longitudinal Study on Women's Health, known as Women's Health Australia (WHA),[9] is the first large-scale national survey to provide information on prevalence of cosmetic surgery and the demographic characteristics of users. Using data from the WHA survey, our aim was to explore the relationship between cosmetic surgery and the use of other health services.

METHODS

WHA is a longitudinal study of factors affecting the health and wellbeing of three national cohorts of women who were aged 18–23 years ("young"), 45–50 years ("mid-age") and 70–75 years ("older") at baseline in 1996.[9] The study sample was selected from the Medicare database, maintained by the Health Insurance Commission, which

See also pages 569, 597 and 601

School of Health, University of New England, Armidale, NSW.
Rafat Hussain, MB BS, PhD, Senior Lecturer in Health Management;
Margot Schofield, MClinPsych, PhD, Associate Professor of Counselling;
Deborah Loxton, BPsych(Hons), PhD Candidate in Counselling.
Reprints will not be available from the authors. Correspondence: Dr Rafat Hussain, School of Health, University of New England, Armidale, NSW 2351.
rhussain@metz.une.edu.au

contains the names and addresses of all Australian citizens and permanent residents. From each of the three age groups a random sample was selected, with intentional over-representation of women from rural and remote areas. Further details of the recruitment methods have been described elsewhere.[9]

Ethical approval for the study was obtained from the Human Research Ethics Committee of the University of Newcastle.

Study sample

Our study sample was the "mid-age" (45–50 years) cohort of WHA women who participated in the 1996 baseline survey. The cohort consisted of 14 100 women (representing a survey response rate of 54%). The sample was largely representative of the general population of Australian women aged 45–50 years, with a slight over-representation of married women, employed women, and women with post-school education.[9]

Measures

In a self-completed postal questionnaire, women were asked to indicate whether they had ever had various surgical procedures, including "any cosmetic surgery (eg, for face, breasts, fat removal, etc)". (There was no further elaboration of what procedures would be defined as "cosmetic surgery".) Affirmative responses to types of surgical procedures *other than* cosmetic surgery (eg, hysterectomy, repair of prolapsed vagina, mastectomy, cholecystectomy, and other specified procedures) were summed to give a total score for the number of non-cosmetic surgical procedures (maximum score, 9).

The frequency of use of health services was assessed by asking women how many times within the past 12 months they had consulted each of the following for their own health: a family doctor or general practitioner, a hospital doctor, a specialist doctor, an allied health professional (eg, optician, dentist, physiotherapist, podiatrist, dietitian, counsellor), or an alternative health practitioner (eg, chiropractor, naturopath, acupuncturist, herbalist). Responses were coded on a three-point scale (0, 1–4, or 5+ times).

Health status was measured using the Medical Outcomes Study Health Survey, Short Form (SF-36),[10] a widely used and validated measure of health-related quality of life. The physical health component summary (PCS) and mental health component summary (MCS) scores calculated from the SF-36 were standardised using the cohort means for WHA.[11] Participants were asked whether they had ever been diagnosed with any of 15 chronic health problems, such as various cancers, diabetes, cardiovascular and respiratory problems. Affirmative responses were summed to give a total score for the number of chronic conditions.

Medication use was assessed by asking women if they had taken any medication for anxiety, sleep problems or any chronic illness in the four weeks prior to the survey, or if they were currently taking hormone replacement therapy.

Demographic data gathered by the survey included current marital status, country of birth, highest level of education achieved, occupational status (coded as professional, paraprofessional or managerial; administration and sales; trade, machine work, manual work, or other work; or never in paid work), area of residence (categorised, by postcode, as large city, other metropolitan, large rural, small or other rural, or remote),[12] and State of residence.

Analysis

Initial exploratory analyses involved computing cross-tabulations for a range of variables relating to demographic factors, health status, health service utilisation and medication history. To correct for oversampling of women from rural and remote areas, observations were weighted (area-adjusted) so that the study population was representative of the Australian population for women of this age group.

As the outcome variable — having had cosmetic surgery — was dichotomous ("yes"/"no"), the crude odds ratios (ORs) were computed using logistic regression. Correlation coefficients were assessed for categorical and continuous-level data by Spearman and Pearson correlation coefficients, respectively. There was no marked difference in the distribution of cosmetic surgery cases by age, thus obviating the need for age adjustment of results. A number of multivariable logistic regression models were run to examine the association between the history of cosmetic surgery and health service use, after adjustment for demographic and health-status-related factors. The final model was rerun using the backward elimination method described in SPSS.[13]

RESULTS

Seven per cent of respondents reported that they had had cosmetic surgery.

Univariate analysis

At the univariate level, cosmetic surgery was significantly associated with demographic variables such as occupation, marital status, country of birth, area of residence and State of residence. Women employed in professional, administrative and sales positions were more likely to have had cosmetic surgery than women working in trade, mechanical or other occupations. Separated or divorced women were more likely to have had cosmetic surgery than currently married women. Women from non-English-speaking countries were less likely to have had cosmetic surgery than women born in Australia. Rates of cosmetic surgery were higher in capital cities and metropolitan areas than rural or remote areas, and higher in South Australia than other States.

At the univariate level, women who reported having had cosmetic surgery had lower mean PCS and MCS scores, but the difference was statistically significant only for MCS. There was a significant association between having had cosmetic surgery and having a greater number of chronic illnesses; using medications for anxiety, sleep disturbances or chronic illness; and HRT use. Cosmetic surgery use was also significantly higher among women who reported having had more surgical interventions, and who, over the past year, had had more consultations with GPs, specialists or alternative healthcare providers. However, no significant association was found between use of cosmetic surgery and the number of visits to hospital doctors or allied health providers. Cos-

Multivariate analysis for predictors of cosmetic surgery use

	Number of respondents	Cosmetic surgery: Adjusted odds ratio (95% CI)	*P*
Occupation			
Professional, paraprofessional, managerial	4317	1.42 (1.13–1.78)	0.001
Administration, sales	4397	1.51 (1.21–1.89)	
Trade, other	2271	1.00	
Never worked	169	0.43 (0.13–1.42)	
Area			
Capital city	7293	1.22 (0.99–1.50)	0.000
Other metropolitan area	939	1.86 (1.39–2.51)	
Large rural centre	681	1.13 (0.70–1.50)	
Small rural, other rural area	2084	1.00	
Remote centre, other remote area	268	0.77 (0.41–1.44)	
State of residence			
New South Wales	3269	1.00	0.012
Victoria	2636	1.13 (0.92–1.42)	
Queensland	2437	1.14 (0.92–1.42)	
South Australia	973	1.62 (1.26–2.10)	
Western Australia	1024	1.15 (0.89–1.51)	
Tasmania	456	0.89 (0.53–1.51)	
Northern Territory	209	1.39 (0.66–2.91)	
Australian Capital Territory	150	0.72 (0.41–1.26)	
*Mean MCS**	11154	0.99 (0.98–1.00)	0.063
Number of chronic illnesses			
0	3288	1.00	0.004
1	3596	1.52 (1.24–1.87)	
2	2306	1.32 (1.05–1.67)	
3	1205	1.46 (1.12–1.90)	
4	486	1.34 (0.93–1.92)	
5+	273	1.42 (0.86–2.14)	
Medications (taken in past four weeks)			
For "nerves" (anxiety)			
No	10436	1.00	0.012
Yes	718	1.41 (1.08–1.84)	
For sleep problems			
No	10351	1.00	0.009
Yes	803	1.39 (1.09–1.79)	
Number of non-cosmetic surgical procedures (ever)			
0	2866	1.00	0.000
1	4689	1.26 (1.02–1.55)	
2	1944	1.54 (1.21–1.96)	
3	1063	1.48 (1.11–1.97)	
4	398	2.34 (1.64–3.33)	
5+	194	3.16 (2.02–4.94)	
Number of GP consultations (in past year)			
0	988	1.00	0.074
1–4	7094	1.18 (0.86–1.62)	
5+	3072	0.97 (0.68–1.37)	
Number of specialist consultations (in past year)			
0	6645	1.00	0.001
1–4	3845	1.24 (1.05–1.46)	
5+	664	1.61 (1.22–2.12)	
Number of consultations with alternative health practitioners (in past year)			
0	8011	1.00	0.001
1–4	1877	1.35 (1.12–1.64)	
5+	1266	1.33 (1.07–1.66)	

* For every unit increase in MCS. MCS = Mental health component summary of SF-36.

metic surgery use was higher among women with private health insurance than women with no private health insurance.

Use of cosmetic surgery was not significantly associated with education level, mean PCS score, or number of consultations with a hospital doctor or allied health provider.

Multivariate analysis

Variables that remained significantly and independently associated with cosmetic surgery after multivariable logistic regression analysis and adjustment for demographic and health-status factors are presented in the Box.

The adjusted odds ratio (AOR) for cosmetic surgery among women who worked in professional and managerial occupations was 1.42 (95% CI, 1.13–1.78), and 1.51 (95% CI, 1.21–1.89) for those in administrative and sales occupations, compared with women working in trade, mechanical and other occupations.

Among the health-status-related variables, cosmetic surgery use was significantly associated with the number of chronic illnesses and use of medication for anxiety or sleep disturbances.

Health-service-use variables significantly associated with higher odds of having had cosmetic surgery included the number of non-cosmetic surgical procedures and frequency of consultations with specialists or alternative health practitioners. A positive association was observed between the odds of having had cosmetic surgery and the number of other surgical procedures reported. For example, the odds of having had cosmetic surgery were about 1.5-fold for women reporting two non-cosmetic surgical procedures, and about 3.2-fold for women reporting five or more procedures, compared with women who had had no surgical procedures. Even after taking chronic illnesses into account, women who had had five or more consultations with specialist doctors in the past year were more likely to have had cosmetic surgery (AOR, 1.61; 95% CI, 1.22–2.12) than women who had had no consultations. A similar association was also found between history of cosmetic surgery and use of alternative healthcare

providers, but the magnitude of the effect was smaller.

Although MCS score appeared to have a negative association with cosmetic surgery, the association after multivariate analysis was not statistically significant ($P = 0.06$) (see Box).

DISCUSSION

Our study demonstrates that cosmetic surgery use is significantly and independently related to wider health service use, notably the number of other surgical procedures and the frequency of consultations with healthcare providers. Our results also suggest that women who have had cosmetic surgery are more likely to suffer from poor physical and psychosocial health. The positive association between past cosmetic surgery and current use of medication for anxiety and sleep disturbances may be indicative of psychological distress. There is empirical evidence that psychosocial factors such as poor body image and low self-esteem play a part in women's motivation to undergo cosmetic surgery.[14,15] It has been argued that cosmetic surgery may not be the best intervention to deal with the issues underlying low self-esteem and poor body image,[16] and the need for preoperative psychological screening of patients requesting cosmetic surgery has been recommended.[17,18] Moreover, in the postoperative period, general psychological complications such as anxiety, depression, non-specific physical complaints and sleeping difficulties have been reported to be much more common than physical problems for patients undergoing cosmetic surgery.[19]

One of the major limitations of current research on cosmetic surgery is that most of it focuses on postoperative assessment *in the short term*. While there is a need for long-term evaluations of patient satisfaction with cosmetic surgery,[19-22] there is also a need to explore whether alternative interventions such as counselling and somatic psychotherapies may be more cost-effective treatments for low self-esteem and negative body image among women.

An interesting finding is the higher rate of cosmetic surgery among women in professional, managerial, administrative and sales occupations compared with those in trade and other occupations. This provides some empirical support for trends identified in recent news media reports suggesting that, in occupations for which appearance is important for job success, there may be greater pressure on women to have cosmetic surgery.[23]

There is some evidence of State-based and regional differences in the use of cosmetic surgery. Further investigation is required to determine whether these differences reflect consumer demand or are simply a manifestation of sampling variation.

Our study was limited by a lack of information about the type of cosmetic surgery undergone and the number and timing of cosmetic procedures. As the question relating to cosmetic surgery was phrased in a non-specific way, it was impossible to tell how women defined "cosmetic surgery" in their own minds (whether, for instance, some included procedures that were technically "reconstructive" rather than aesthetic in nature). We also lacked information on the preoperative psychological state of patients, the motivations for and outcomes of surgery, and the reasons for use of other health services. We were thus unable to assess whether the greater use of services was causally related to cosmetic surgery. A long-term prospective investigation would allow us to assess these factors and to examine the cost-effectiveness of current procedures and the degree of patient satisfaction with the outcomes.

Our study suggests that women who have had cosmetic surgery use other health services more frequently and are more likely to experience psychological distress. These findings have important implications for health planning and point to the need for further research into women's reasons for seeking cosmetic surgery and the extent to which the surgery meets those needs. Furthermore, the long-term health outcomes of cosmetic surgery, both physical and psychological, also warrant investigation. With this information in hand, it would be possible to make recommendations to practitioners about improving the health outcomes for women seeking cosmetic surgery.

COMPETING INTERESTS

None declared.

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