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WOMEN'S SATISFACTION WITH THEIR BREAST PROSTHESIS

What Determines a Quality Prosthesis?

PATRICIA M. LIVINGSTON
VICTORIA M. WHITE
SUSAN B. ROBERTS
EMMA PRITCHARD
JANE HAYMAN
ANNE GIBBS
DAVID J. HILL

Centre for Behavioural Research in Cancer, Cancer Council Victoria

The aim of this study is to determine what factors constitute a quality prosthesis and ascertain which factors affect prosthesis satisfaction. Sixty-four women who received full funding for their prosthesis and 38 women who received their hospital's usual funding were recruited. Women rated the information provided about breast prostheses very highly, with 85% reporting that it was "very good" or "excellent." Satisfaction was significantly associated with how well the prosthesis fit (1 week, \( p = .001 \); 3 months, \( p = .01 \)), level of comfort (3 months, \( p = .005 \)), and appearance of the prosthesis when worn (6 months, \( p = .001 \)). Quality was significantly associated with how well it fit (1 week, \( p = .001 \); 3 months, \( p = .001 \)), how natural it felt (1 week, \( p = .001 \); 6 months, \( p = .01 \)), the weight of the prosthesis (3 months, \( p = .003 \)), and appearance when worn (6 months, \( p = .03 \)). The results will be used to improve women's access to a quality prosthesis.

Keywords: breast cancer; breast prosthesis; quality; satisfaction; cost

Despite considerable advances in diagnosis and treatment, breast cancer remains a significant public health issue in Australia: 1 in 11 women will...
develop breast cancer in her lifetime (Australian Institute of Health and Welfare and Australasian Association of Cancer Registries 2001). In Victoria, 42% of women diagnosed with breast cancer in 1995 (Hill et al. 1999) had a mastectomy as their primary surgical treatment. Although the rate of breast reconstructive surgery is increasing steadily, a recent study showed that women who had a mastectomy without reconstruction experienced greater feelings of well-being compared to women who had reconstruction following mastectomy (Nissen et al. 2000). There are many women for whom wearing an external prosthesis is a comfortable and natural-looking alternative to further surgery (Kiefer 2001).

Two types of external breast prostheses are available: the loose external prosthesis, which is positioned inside a bra and cannot be attached to the skin, and the adhesive prosthesis, which does not require a bra and is fixed into position and secured to the chest wall by an adhesive Velcro skin strip (Thijs-Boer, Thijs, and van de Wiel 2001). Both prosthesis types are designed to closely simulate the natural contours of the breast, which outwardly restores feminine shape. The internal composition of breast prostheses may consist of water, silicone, glycerin, or latex (Kiefer 2001) and differ in size and shape. The more expensive forms are made of silicone, which can be whipped to factor in air and enables it to be much lighter in weight. Silicone inside a breast prosthesis equally distributes the weight over the chest wall. It can emulate the look, feel, and motion of natural breast tissue (Kiefer 2001). Other compositions can sag heavily in the bra pocket.

Breast prostheses can be fitted from approximately 6 to 8 weeks after surgery and generally need replacing every 2 to 5 years. Currently in Australia, prostheses range in cost from AU$130 to AU$395. For many women, this may present as a significant financial burden (Consumers Union 1975).

The Victorian state government responded to this potential financial burden by providing financial assistance toward the cost of a breast prosthesis. Through the public hospital system, financial assistance is available to women for the initial prosthesis as part of their episode of care. However, the amount provided is at the discretion of the treating hospital. Rebates can range from AU$150 to the full cost of a prosthesis (up to AU$395). This variation means that for some public patients, a full rebate may be available from the treating public hospital to support the purchase of the woman’s first prosthesis, whereas for other public patients, only a subsidy is provided.

Moreover, anecdotal evidence highlights that there is a lack of formal documentation supporting the provision of services, including financial assistance to women. Differential funding levels may make it impossible to ensure all women have access to a quality prosthesis. Knowledge of women’s needs, experience, and perceptions about these services is poor. In addition, it is
Currently unclear what constitutes a quality prosthesis and how satisfied women are with their prosthesis over time. Dissatisfaction has been attributed to characteristics of the fitting experience (Winkler 1977; Lee 1991) and other prosthesis-related factors such as its weight and discomfort (Tanner, Abraham, and Llewellyn-Jones 1983; Thomas and Yates 1977; Smoot, Silverman, and Cohen 1979; Korvenoja, Smitten, and Ask-Oseljavaara 1998). Satisfaction has also been associated with adequate support and information about prostheses (Tanner, Abraham, and Llewellyn-Jones 1983; Reaby, Hort, and Vandervord 1994).

Given the disparity in funding subsidies and the lack of information about what impact differential funding levels may have on the type of prosthesis a woman buys and on her satisfaction with the prosthesis, the Victorian state government sought an independent assessment of breast prosthesis services across Victoria.

The aim of this research was to evaluate women’s experience regarding provision of their first prosthesis following a mastectomy and to determine the impact of funding levels on women’s ratings of satisfaction regarding their prostheses. Specifically, the research aimed to identify the key criteria for the assessment of a quality prosthesis by women and the funding implications of these criteria. The study also investigated the acceptability of current administrative processes as well as the acceptability and appropriateness of information provision and fitting procedures for women.

**METHOD**

The study was a block design, divided into five 2-month periods. Prior to its implementation, participating hospitals were randomly assigned into one of two research conditions, and the Breast Care Nurses (BCNs) and Royal District Nursing Service (RDNS) received a protocol detailing recruitment procedures as well as changeover dates. Hospitals assigned to the control group received the information packages and questionnaires on white paper, and those allocated to the intervention condition received the information packages and questionnaires on pink paper. During each time period, half of the participating hospitals recruited women into the intervention group, and the remaining hospitals recruited women into the control group. At the end of each period, this procedure was reversed, and all hospitals recruited women into the other group for the next 2 months. Prior to the changeover, BCNs from participating hospitals and the RDNS were asked to return any unused study materials and then new information packages and questionnaires were...
forwarded to them for use over the next 2 months. We considered that the block design limited the risk of contamination between patients who received adjuvant therapy at hospital clinics postsurgery and who may have interacted with one another over several months. This design also controlled for potential institution-specific confounders. To determine whether the mix of patients was similar over time, patient characteristics were compared over the five recruitment periods. No differences were found on any of the participants’ sociodemographic characteristics over the recruitment phase of the study.

SAMPLE IDENTIFICATION, RECRUITMENT STRATEGIES, AND CONSENT PROCEDURES

In Victoria, the majority of public hospitals have nurses who are specially trained in the care of women with breast cancer (BCNs) and have completed a postgraduate course in the care of women with breast cancer. If required, the RDNS also provides a follow-up service to patients in their homes following hospital discharge. Ideally, the BCNs are advised of a woman’s mastectomy status and visit an average of three times to assist the woman through her hospital episode. This includes showing the contents of a breast prosthesis kit, which comprises samples of breast prostheses and mastectomy bras (which contain an insert to position the prosthesis) as well as information from the manufacturers on the various types of prostheses available. If requested by the hospital, the RDNS will visit the woman following discharge and will show the prosthesis kit to women at home if they do not want to view the kit in the hospital or have not been given the opportunity to view the kit.

When a BCN visits a woman who has had a mastectomy, she will organize a letter, purchase order, or voucher from the hospital for the woman to take to the retail outlet where she can be fitted for her initial prosthesis by specially trained personnel. This comprises part of the woman’s episode of care.

For the purpose of this study, BCNs and the RDNS were asked to recruit women for the intervention study at the time they were showing them the breast prosthesis kit. Following explanation of the study, women who agreed to participate signed a consent form and background information questionnaire that included questions about age, partnership status, employment status, level of education achieved, and contact details for follow-up. The consent form and background questionnaire were completed at the time of recruitment and returned to the nurse, who then forwarded the documentation to researchers at the Cancer Council Victoria.
Participants in the control group received the usual forms or purchase orders from their hospital for the purchase of their initial prosthesis. Those allocated to the intervention group received a voucher in the mail from the Cancer Council Victoria (funded by the Health and Aged Care Division of the Victorian Department of Human Services), indicating that the prosthesis of their choice would be fitted free of charge. All women were advised to present the voucher at the time of their appointment to the retailer who was to fit them for their prosthesis. Included with the voucher was a letter of explanation and a short questionnaire for the fitter to complete following the fitting procedure. All women were asked to give the letter and questionnaire to the fitter at the time of the fitting. All retail outlets with trained fitters were approached prior to the study, requesting their support.

Part of the woman’s commitment to the study involved sending a “Notification of Completion Form” that specified the date and location of the fitting and name of the fitter and retailer. This procedure allowed the researchers to track both the fitter’s questionnaire (in the event that the fitter did not return the questionnaire after the woman was fitted) and the woman’s time frame in obtaining a prosthesis. Women were contacted for interview by telephone within 1 week of being fitted for their prosthesis and followed up 3 and 6 months later.

Women in the control group received usual care offered by the treating public hospital. This included information on breast prostheses and the funding subsidy available from the hospital. Women in the intervention group received usual care and the opportunity to purchase a breast prosthesis of their choice to the value of AUS$395. Nurses were asked not to inform women that there were two different groups.

Exclusion criteria. Women who did not have adequate written or spoken English were not recruited into the study due to financial constraints associated with using interpreters. Women with a documented psychiatric condition were also excluded from the study.

Questionnaires. Questionnaires were administered using computer-assisted telephone interviews. The background questionnaire was composed of specific demographic questions, that is, age, country of birth, current employment status, private health insurance, postcode, and proposed adjuvant therapy. The 1-week follow-up questionnaire was composed of questions on sources of information regarding breast prostheses, perceived level of emotional and practical support provided by BCNs, ratings associated with the information provided, the administrative processes involved in obtaining a breast prosthesis, the fitting experience, the cost of the prosthesis,
satisfaction with funding level, factors that influenced the choice of prosthesis, perceived impact of the cost of the prosthesis, rating of the breast prosthesis in terms of quality and satisfaction, and usage patterns. The 3- and 6-month questionnaires were composed of questions regarding adequacy of information provided about breast prostheses, rating of the breast prosthesis in terms of quality and satisfaction, and usage patterns.

Statistical analyses. Data collected from the surveys were analyzed using SPSS and STATA. The clustering of participants by hospital was adjusted for by using the cluster option available within the STATA statistical package. Descriptive statistics were used to characterize the sample, and mean differences were tested using t tests. Chi-square tests were used to determine if the distribution of responses on categorical variables differed between groups. Logistic regression techniques were used to investigate the effect of the intervention on ratings of the information provided about breast prostheses, ratings of both the fitting experience and the person who fitted the prosthesis, and quality and satisfaction ratings relating to the prostheses purchased. This involved recoding dependent and predictor variables that were measured on 5-point scales as binary variables. The effect of the intervention was tested by logistic regressions in which significant predictors and the grouping variable were entered into the model. Changes over time in satisfaction and quality ratings were tested using the nonparametric McNamara test for related samples. When changes observed over time from the first interview (1 week postfitting) to the final interview (6 months postfitting) were reported, statistical analyses were conducted using the responses of 50 women who were interviewed at all three time periods (18 [36%] were in the control group and 32 [64%] were in the intervention group). Consequently, 95% confidence intervals around estimates were wide, restricting our ability to report estimates of association (e.g., odds ratios) with accuracy. Therefore, we report the p values associated with only significant findings.

RESULTS

Of the 132 women approached to participate in the study, 102 (77%) agreed to take part. Sixty-four women (63%) were recruited into the
intervention group and 38 (37%) into the control group (see Table 1). The main reason for nonparticipation was ill health. Women were also less likely to obtain a prosthesis with increasing age (see Table 2). Women who had not been for their fitting at the conclusion of the study were compared on all demographic variables with those who had been fitted. No significant differences were found on any of these variables.

A total of 81 women (30 [37%] control and 51 [63%] intervention) completed the first of three interviews for this study at 1 week postfitting. The second interview was completed by 73 women (28 [38%] control and 45 [62%] intervention) 3 months after the prosthesis was fitted. The final interview was completed 6 months postfitting by 55 women (21 [38%] control and 34 [62%] intervention). A total of 50 women completed all three interviews, of which 18 (36%) were in the control group and 32 (64%) in the intervention group. Analyses found no significant differences between the two groups of women on the demographic characteristics of age, marital status, country of birth, or current employment status (see Table 2).

On conclusion of the study, 17 women had not been for their fitting and were contacted by either the project coordinator or the woman’s BCN. Four women reported that they did not have any plans to purchase a silicone prosthesis, as they were happy using the temporary cotton prosthesis given to them by their BCN on discharge. Five women stated that they were planning to visit a store within the next month or so to be fitted with a silicone prosthesis, whereas the remaining women gave no indication as to if or when they were likely to go for their fitting.

INFORMATION PROVISION

At the 1-week postfitting interview, women were asked a series of questions relating to the information they were given about breast prostheses. Nearly two thirds (63%) of the women indicated that the subject of a breast prosthesis was first discussed in detail either before or just after surgery. Women rated the overall quality of information provided to them about breast prostheses very highly, with 85% reporting that it was very good or excellent. Women were asked to rate the information they were given about breast prostheses, and the aspects rated were as follows: how easy it was to access, how accurate the information was, the amount of information given, and the quality of the information provided. A logistic regression analysis showed that an excellent rating for the overall quality of information received was associated with the amount of information given \( (p = .001) \) and the
accuracy of that information \( (p = .02) \). There were no significant effects of the intervention on overall ratings for the quality of information provided.

At all three follow-up interviews, women reported that they would have liked more information about the different types of prostheses available, that is, weights and styles at the time of their fitting. Other information women would have liked at the time of their fitting included details of financial assistance available (at 1 week [18%] and 3 months [13%]), cost of prostheses (at 1 week [12%] and 3 months [27%]), pictures of different prostheses (at 1 week [12%] and 6 months [33%]), samples (at 1 week [12%]), written information (25%), and expected life span of prostheses (17%; at 6 months).

**PROSTHESIS FITTING**

At the 1-week postfitting interview, women were asked why they chose the retail outlet they went to for their fitting. The reason given by more than half (56%) of the women was that the outlet was close to home, whereas 16% went to a particular store because it was recommended by their BCN. Twenty-two women (27%) indicated that they would have preferred to be fitted at their own home, and 17 (22%) would have preferred to be fitted at a community health center, had these options been available.

Women rated the experience of being fitted for their prosthesis and were also asked to rate the woman who fitted them. These ratings were high, with

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**TABLE 1: Recruitment, Study Participation, and Prosthesis-Fitting Details of Women Involved in This Study**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>All women</td>
<td></td>
</tr>
<tr>
<td>Approached</td>
<td>132</td>
</tr>
<tr>
<td>Recruited</td>
<td>105</td>
</tr>
<tr>
<td>Died</td>
<td>3</td>
</tr>
<tr>
<td>Participated</td>
<td>102</td>
</tr>
<tr>
<td>Control group</td>
<td>38</td>
</tr>
<tr>
<td>Intervention group</td>
<td>64</td>
</tr>
<tr>
<td>Participants</td>
<td></td>
</tr>
<tr>
<td>Fitted at conclusion of study</td>
<td>85</td>
</tr>
<tr>
<td>Not fitted at conclusion of study</td>
<td>17</td>
</tr>
<tr>
<td>Women interviewed</td>
<td></td>
</tr>
<tr>
<td>1 week postfitting</td>
<td>81</td>
</tr>
<tr>
<td>3 months postfitting</td>
<td>73</td>
</tr>
<tr>
<td>6 months postfitting</td>
<td>55</td>
</tr>
</tbody>
</table>
96% and 97% of all women rating the fitting and fitter, respectively, as good or better. There was no significant difference in ratings given by women in the intervention or control groups on their experience of being fitted for their prosthesis ($\chi^2 = 0.68$, $df = 1$, $p > .05$).

Ratings were provided on three aspects of the fitting experience: privacy, the number of styles or brands shown, and the physical layout of the fitting room. A logistic regression showed that an excellent rating of the fitting experience was associated with high ratings for privacy ($p = .001$) and the number of styles shown during the fitting ($p = .05$). There was no significant effect of the intervention condition on overall ratings of the fitting experience.

### TABLE 2: Demographic Characteristics of Participants for Intervention and Control Conditions (in percentages)

<table>
<thead>
<tr>
<th></th>
<th>Control ($n = 38$)</th>
<th>Intervention ($n = 64$)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-50 years</td>
<td>26</td>
<td>36</td>
</tr>
<tr>
<td>51-60 years</td>
<td>37</td>
<td>23</td>
</tr>
<tr>
<td>61-70 years</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>71 years and over</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Married</td>
<td>71</td>
<td>52</td>
</tr>
<tr>
<td>De facto</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Separated</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Divorced</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Widowed</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>74</td>
<td>70</td>
</tr>
<tr>
<td>Born elsewhere</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time work</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Part-time work</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>Home duties</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td>Retired</td>
<td>37</td>
<td>30</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Private health insurance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Extras/ancillaries cover(^a)</td>
<td>0</td>
<td>54</td>
</tr>
<tr>
<td><strong>Type of mastectomy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>100</td>
</tr>
</tbody>
</table>

\(^a\) Proportion of women who had private health insurance.
In addition, women were asked to rate their fitter on 10 characteristics. Logistic regressions showed that significant characteristics for predicting high positive ratings of the fitter were the fitter’s attitude toward the woman \((p = .001)\) as well as the fitter’s knowledge and experience \((p = .001)\). Information provided, how comfortable the fitter made the woman feel, the amount of emotional and practical support provided, how caring and respectful the fitter was of the woman, and the pressure to buy other products were not related to the fitter’s rating. Women’s ratings of the fitter did not significantly differ between the control and intervention conditions.

**SATISFACTION WITH BREAST PROSTHESES**

Overall satisfaction with breast prostheses was measured on a 5-point scale ranging from *extremely dissatisfied* to *extremely satisfied*. At each interview, women were also asked to report their satisfaction with the following features of breast prostheses: appearance when worn, ease of cleaning, durability, weight, how well it fitted the woman, how well it moved with the woman, how natural it felt, comfort, and value for money. Logistic regression analyses showed that different features were significantly associated with satisfaction at each interview (see Table 3). At 1 week postfitting, a high level of satisfaction was associated with how well the prosthesis fitted the woman \((p = .001)\). At 3 months postfitting, satisfaction was best predicted by how well the prosthesis fitted the woman \((p = .01)\) and by the level of comfort \((p = .005)\). Satisfaction was best predicted at 6 months postfitting by the appearance of the prosthesis when worn \((p = .001)\). There was no significant effect for the intervention at any of the three postfitting interviews.

Figure 1 presents satisfaction ratings at 1 week, 3 months, and 6 months postfitting for all women interviewed at these times. The number of women who were extremely satisfied with their prosthesis decreased over time in both the control and intervention conditions, although this effect was more pronounced in the intervention group. Although 77% of women in the intervention group were extremely satisfied with their prosthesis at 1 week postfitting, this decreased to 59% of women at 6 months postfitting. Satisfaction ratings from women in the control group decreased from 63% 1 week postfitting to 50% 3 months postfitting and increased slightly to 52% at the 6-month follow-up. However, possibly due to the small sample size, no significant differences in satisfaction were found between the control and intervention groups at any of the postfitting interviews. In addition, when data from the 50 women who completed all three interviews were examined using
nonparametric McNemar tests, no significant changes were found in satisfaction ratings over time for either the intervention or control groups.

**SATISFACTION WITH FUNDING LEVEL**

The average cost of the prostheses purchased by women in the intervention group (AUS298) was significantly higher than those purchased by the
control group (AU$233; \( t = 3.38, p = .001 \); see Table 4). Women in the intervention group (14%) were significantly less likely than those in the control group (47%) to report that cost was an important influence on their choice of prosthesis (\( \chi^2 = 10.15, df = 1, p < .01 \)). Fourteen (37%) women in the control group contributed to the cost of their prosthesis. Personal contributions ranged from AU$10 to AU$150, with an average outlay of AU$65. Additional amounts were paid in the majority of cases due to insufficient funding from the hospital (79%).

Women in the intervention group were significantly more likely to be shown the most expensive prosthesis available (\( t = 4.23, p < .001 \)). On average, the most expensive prosthesis shown to women in the intervention group was AU$18 less than the most expensive in stock. In the control group, the most expensive prosthesis shown cost an average of AU$85 less than the most expensive product.

At the 1-week postfitting interview, women were asked to rate their satisfaction with the amount of money provided to them for their breast prosthesis on a 5-point scale. Compared to women in the control group (70%), those in the intervention group (90%) were more likely to be extremely satisfied with the amount of funding provided, although this difference was not significant. The main reason for being extremely satisfied with the funding provided was that it fully covered the cost of the prosthesis (63% of responses in the intervention group compared to 47% in the control group). Thirty-eight percent of women in the control group reported that partial reimbursement of costs added to their satisfaction; 19% of women in the intervention group compared to 9% of women in the control group reported that choice added to their satisfaction with their prosthesis.

QUALITY OF BREAST PROSTHESIS

Women rated the overall quality of their prosthesis on a 5-point scale, ranging from poor to excellent. Overall, 43% of women thought their prosthesis to be of excellent quality at 1 week postfitting, 38% at 3 months postfitting, and 39% at 6 months postfitting. Quality ratings did not differ between groups. Logistic regression analyses using the nine features of breast prostheses mentioned earlier as predictors showed that different factors were related to quality ratings over time (see Table 5). At 1 week postfitting, high quality ratings were associated with how well the prosthesis fitted the woman (\( p = .001 \)) and how natural it felt (\( p = .001 \)). At 3 months postfitting, significant predictors of an excellent quality rating were the weight of the prosthesis (\( p = .003 \)) and how well it fitted the woman (\( p = .
Finally, high quality ratings were best predicted at 6 months postfitting by the appearance when worn ($p = .03$) and by how natural it felt ($p = .01$). There was no significant effect for the intervention at any of the three postfitting interviews.

Figure 2 presents quality ratings at 1 week, 3 months, and 6 months postfitting for all women interviewed at these times. In the intervention group, the number of women who reported an excellent rating declined over time. At 1 week postfitting, prostheses were judged to be excellent by 52% of women, but this declined to 40% of women at the 3-month interview and remained constant at the 6-month postfitting follow-up. Compared to the intervention group, women in the control group (28%) were significantly less likely to give an excellent quality rating at 1 week postfitting ($\chi^2 = 4.58, df = 1, p < .05$). At 3 months postfitting, excellent quality ratings rose to 36% of women in the control group, and this remained constant at 6 months postfitting. Analyses of data from the 50 women who completed all three interviews using nonparametric McNemar tests for repeated measures data showed no significant changes in quality ratings over time for either the intervention or control groups.

**USAGE PATTERNS**

Patterns of prosthesis use were consistent over time, with 75% of women reporting at each time period that they were wearing their prosthesis every day or most days. No significant differences were found in usage patterns between the intervention and control groups.

**DISCUSSION**

To our knowledge, this is the first study to examine women’s experiences of breast prosthesis provision, address the funding issue, identify what
constituted a quality prosthesis, and determine what aspects affect women’s satisfaction with their prosthesis.

The data need to be interpreted in view of the study’s limitations. First, the number of women recruited into the study was approximately half that expected on the basis of information received from the Department of Human Services Information Analysis Unit (IAU). The IAU provided data on the number of mastectomy procedures undertaken over a 12-month period for each public hospital involved in the study. Second, despite careful monitoring, we cannot be certain that all eligible women who presented at the public hospitals for mastectomy were recruited into the intervention study. It is possible that some women may have slipped through the system.

| TABLE 5: Significant Predictors Associated With Quality Ratings Over Time |
|---------------------------------|-----------------|-----------------|-----------------|
|                                 | 1-Week Follow-Up, Regression 1 (n = 81) | 3-Month Follow-Up, Regression 2 (n = 73) | 6-Month Follow-Up, Regression 3 (n = 55) |
| Weight of prosthesis            | —                | —                | —                |
| Fitted woman                    | p = .001         | p = .001         | —                |
| How natural prosthesis felt     | p = .001         | —                | p = .01          |
| Appearance when worn            | —                | —                | p = .03          |

Figure 2: Changes Over Time in Quality Ratings of Breast Prostheses
NOTE: Proportion of women interviewed at all three postfitting interviews (1 week, n = 81; 3 months, n = 73; 6 months, n = 55).

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therefore were not seen by a BCN during their hospital stay. Also, BCNs were asked to apply only two exclusion criteria (women from culturally diverse backgrounds and those with a documented psychiatric condition). Given the low numbers in the control group, it is unclear if any further selection processes were applied, reducing our potential recruitment. In addition, because of the small sample size, the study had enough power to detect only large differences between groups. We acknowledge that with the number of statistical tests conducted, it is possible that some of the significant associations may be due to chance (Keppel and Zedeck 1989). However, given the lack of research in this area, rather than discounting potential associations by using conservative multicomparison tests (Rothman and Greenland 1998), we present our findings as potential factors that may influence women’s satisfaction and ratings of quality regarding their prostheses. These factors need to be confirmed in larger studies.

With these caveats in mind, the analyses suggest differences between the two groups and possible associations that are indicative of important trends.

The results highlighted that the majority of women considered that the information provided to them about breast prostheses was either very good or excellent and that they rated the information easy to access and accurate. This result reflects other earlier studies that found the importance of providing women with information regarding prostheses (Consumers Union 1975; Thomas and Yates 1977). However, our results also demonstrated that improvements could be made in this area. Women reported that they would have liked information on different features associated with the prosthesis including the different weights and styles, cost, details of financial assistance available, expected life span, pictures of different prostheses, and samples. In addition, our preliminary work involving focus groups (Roberts et al. 2003) highlighted that because of the initial impact associated with a breast cancer diagnosis, it was necessary for BCNs to repeat information about prostheses. More extensive resources, such as a breast prosthesis booklet or educational video that can be taken home for future reference and covers not only the features of a prosthesis women in our study considered important but also detailed aspects of the fitting process, warrant consideration. The educational video may be an effective tool for some women who cannot absorb all of the written material during this period of time or who have low reading skills.

Women in the intervention group reported significantly higher quality ratings for their prostheses at 1 week postfitting. Women in the intervention group rated their prosthesis significantly higher than did women in the control group initially, then decreased over time. It is possible that the high quality ratings given by women who received full funding for their prosthesis
reflect an element of their satisfaction with the funding that they received and
the opportunity of purchasing the most appropriate prosthesis with no finan-
cial implication. The significant factors that constituted a quality prosthesis
changed over time. How natural the prosthesis felt was the significant predic-
tor at 1 week and 6 months postfitting; how well it fitted the woman was a sig-
nificant predictor of quality both initially and at 3 months, the weight of the
prosthesis was a significant predictor at 3 months, and its appearance when
worn was the significant predictor at the 6-month follow-up. Women need to
be made aware of these features associated with a quality prosthesis prior to
the fitting procedure so they can consider them when making their purchasing
decisions.

It appears that differences in subsidies influenced women’s prosthesis
choice. The average cost of the prostheses purchased by women in the inter-
vention group was AU$298, compared with an average cost of AU$233 for
women in the control group. Cost was also a significant factor in deciding
prosthesis purchase for women in the control group. Other research has also
indicated that cost can affect the purchase of a prosthesis. Cheaper prostheses
may be uncomfortable; cause shoulder, neck, and back pain; or may not give
the desired natural look (Kiefer 2001) compared to the more expensive
forms. In addition, the more expensive prostheses are made with silicone,
have a more natural feel about them, and emulate the look of a breast under
clothing.

Moreover, the amount of funding available to women seemed to influence
the price range of prostheses shown to women, further influencing choice of
a prosthesis. Women in the intervention group were shown significantly
more expensive prostheses than were those in the control group. There are
several possible reasons for this. It may be that fitters were sensitive to the
fact that cost was a significantly more important consideration for women in
the control group and therefore showed them only breast forms within their
budget range. Alternatively, fitters may have been trying to sell women the
most expensive prosthesis within their funding. It is unclear whether this was
due to a belief that the more expensive prostheses were more suitable or an
attempt to maximize sales. However, the results suggest that women with
limited funding were not given the opportunity to contribute their own funds
and buy a more expensive prosthesis. Irrespective of the reason, all women
should be aware of the full range of prostheses available and given the oppor-
tunity to add to the subsidy with their own funds so that they can purchase a
prosthesis that is most suitable for them. Women’s attention to prosthesis
provision also needs to be drawn to these features that may not obviously be
important during the fitting procedure but become important over time. In
addition, features that were significantly related to women’s satisfaction (i.e.,
how well the prosthesis fitted the woman as an individual, the level of comfort, and appearance when worn) need to be considered.

The fitter is in a unique position to provide a positive influence on women’s experience of a prosthesis acquisition. The significant factors important for women in this study in relation to their fitting experience were privacy and the range of styles and brands available. The extent of styles and brands was not made available to everyone in the control group as not all women were offered the most expensive range of prostheses. The most important fitter characteristics considered by women were the fitter’s knowledge and experience and the fitter’s attitude to the woman. These results support previous research that highlighted how the attitude of the fitter toward the woman affects the fitting experience (Lee 1991; Smoot, Silverman, and Cohen 1979).

The results highlight a number of issues associated with breast prosthesis provision, including the impact of funding on the type of prosthesis purchased, what features influence satisfaction, and which characteristics constitute a quality prosthesis. The results of this research will form part of an overall review of breast prosthesis services, designed to improve women’s access to quality prosthesis services.

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Patricia M. Livingston is a public health researcher at the Centre for Behavioural Research in Cancer, the Cancer Council Victoria. She has a background in issues concerning mammography and prostate and colorectal screening. Her main areas of research expertise are improving service provision among women with breast cancer and the determinants of behavior change related to screening for the early detection of prostate and colorectal cancers.

Victoria M. White is deputy director of the Centre for Behavioural Research in Cancer. Her current research interests include understanding women’s experiences and the management of breast cancer, the role of support programs in cancer patients’ psychosocial adjustment to illness, and the determinants of smoking behaviors of adolescents and young adults.

Susan B. Roberts is a health psychologist currently working with a government department. Her interests include public health, psychosocial adjustment to illness, mental health, delivery of human services, and lifestyle and behavioral modification following illness. She has worked with the Centre for Behavioural Research in Cancer as a senior behavioral scientist.

Emma Pritchard was the coordinator of the Breast Prosthesis Review undertaken by the Cancer Council Victoria for the Department of Human Services (Victoria). She is currently working as a volunteer at the National Centre for Health Promotion (Ministry of Health) in Phnom Penh, Cambodia.

Jane Hayman is a project coordinator at the Centre for Behavioural Research in Cancer. Her current research interests include psychosocial adjustment among men diagnosed with prostate or colorectal cancer, the use of support services by cancer patients, and information-seeking behaviors of cancer patients.
Anne Gibbs is a project coordinator with the Centre for Behavioural Research in Cancer. Her main research interest is in qualitative research with cancer patients.

David J. Hill, a behavioral scientist, is director of the Cancer Council Victoria and was founding director of its Centre for Behavioural Research in Cancer. His published work includes research on smoking prevalence, strategies for smoking cessation, reduction of smoking uptake, smoking regulation, behavioral aspects of screening mammography, monitoring trends in skin cancer prevention, and exploring determinants of behaviors related to skin cancer prevention.