

ORIGINAL ARTICLE

Survey on Chinese breast cancer patients' husbands toward breast conserving surgery

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Summary

Purpose: Husband, as an important member of the family, greatly impacts the treatment decision. In this study, we sought to evaluate the attitudes toward breast conserving surgery (BCS) in Chinese breast cancer patients' husbands and explore the influencing factors.

Methods: A self-structured questionnaire was distributed to the husbands of 1600 wives with breast cancer, eliciting information on their general information, the level of understanding of BCS, attitudes toward BCS and affecting reasons.

Results: In all, 1468 (91.8%) husbands completed the questionnaire. Collation of the responses showed that only 3.0% had a good understanding of BCS and 81.5% did not favor BCS. Patients' husbands perception were associated with

their age, religion, occupation, educational background, method of payment of medical expenses, understanding the disease condition and doctor's recommendations ($p < 0.05$). The top reason was "fear of incomplete resection, which could easily lead to recurrence and metastasis".

Conclusions: This study indicates that Chinese husbands have skepticism and lack comprehensive and correct understanding for BCS. Meanwhile, their desire of obtaining knowledge was not strong. The results suggest a need for fundamental changes in husbands' education to ensure that they are able to obtain enough information so that they can help their wives make educated decisions.

Key words: attitude, breast conserving surgery, factors, husband

Introduction

BCS is the right surgical approach for stage I, II and partly III breast cancer patients and recommended by NCCN Guidelines. In developed countries, the proportion of BCS is increasing [1-3]. Although the incidence of breast cancer in China is increasing [4,5], the proportion of BCS has long been at a lower level [5-7]. A number of studies have shown that the disease characteristics, patients or surgeons influenced the choice of surgical approach [7,8-13]. In addition, husband, as an important member of the family, greatly im-

pacts the surgical decision [1,7,11,13-20]. Studies have shown that one of the reasons why Chinese patients preferred to choose mastectomy was influenced by their husbands [7,21]. Moreover, our previous research found that husband was an independent factor influencing surgery decision making [7]. Another study showed that the Chinese patients' husbands thought that radical surgery was safer than BCS. Meanwhile, they also believed that their wives' opinions were not important [21].

Up to now, there has been no report on attitudes toward BCS or factors influencing the sur-

gical choice in breast cancer patients' husbands in mainland China where husbands predominate in the family. The purpose of this study was to investigate the following: (1) the attitudes toward BCS in Chinese breast cancer patients' husbands; (2) the level of understanding of BCS in husbands and the ways to gain access to relevant knowledge; (3) factors affecting husbands' surgical recommendations.

Methods

Subjects

Five oncology departments of class A tertiary hospitals, including two teaching hospitals, were involved in the study. To be eligible for the study, subjects needed to meet the following conditions: (1) his wife having pathological diagnosis and preoperative assessment showing stage I or II breast cancer; (2) voluntary participation; (3) no mental disorders; (4) well enough to fill out a questionnaire independently and communicate with the interviewer. Those who did not complete the questionnaire for any reason were excluded in the final results analysis.

Questionnaire

We constructed an open questionnaire based on published studies in combination with some unique aspects of this study [7,22-24]. A pre-test was carried out in 150 qualified husbands, and the reliability and validity of the questionnaire were analyzed. Our center trained the entire interviewers using a unified program. All participants were given enough information explaining the study and asked not to share their information with others. Questionnaires were filled out by participants alone or with the help of the interviewer without signature. When acquiring the questionnaire, investigators checked whether the questionnaire was fully filled in or not. If there were any omission, the questionnaire was returned to participant again.

In this questionnaire, participants would answer some questions about their attitudes and understanding of BCS, while they would choose an answer for each question. Information could be divided into three parts: first, it was general information including the respondents' age, religion, educational background, occupation, family income, method of payment for their wives' medical care, whether his family life was happy, whether his wife's operation had been performed and BCS was chosen. Second, it was to examine the husbands' level of understanding of BCS and knowledge-acquisition pathways including the following items: the level of understanding of BCS, which was an open question. Respondents were classified into four grades (ranging from 'never heard' to 'good understanding') according to the contents of their answers (including BCS operative methods, indication, economical cost, treatment

effect, postoperative treatment, etc.). Which pathways acquiring knowledge of BCS, whether they desire to obtain knowledge of BCS. Third, it was information regarding attitudes toward BCS including nine items. For example, whether they agreed their wives to undergo BCS, whether they desire to conserve the wife's breast during surgery. The husbands, except those who had never heard about BCS, were required to give reasons of this question "If given another opportunity whether he would recommend his wife choose BCS" regardless of his choice. There were several reasons available for selection.

The study was approved by the ethical committee of the Cancer Center of Sichuan University, P.R. China.

Statistics

SPSS version 16.0 software was used for statistical analysis. Descriptive analysis was carried out for husbands' general information, attitudes toward BCS, knowledge of BCS, and factors affecting husbands' preference of BCS. Analysis of variance (ANOVA) and the Chi-square test were used to analyze the relevant factors influencing husbands' preference of BCS. Multivariate logistic regression was used to analyze the independent factors affecting husbands' preference of BCS. The level of statistical significance was set at $p < 0.05$.

Results

General information

One thousand and six hundred participants were contacted and 1468 husbands completed the questionnaire (effective response rate, 91.8%). The characteristics of the participants are summarized in Table 1. The average age of the participants was 49.4 years (range 27-79). Only 12% of the participants were religious. The educational level was high school degree or below in more than 50% of the participants. About one-third of the families (33.5%) had to pay the total medical costs by their own. There were 208 (14.2%) husbands whose wives had not yet been operated and 1260 (85.8%) husbands whose wives had been operated. Of the patients who had been operated, only 8.6% (N=108) were subjected to BCS.

Husbands' level of understanding BCS and knowledge-acquisition pathways

Only 3.0% of husbands showed a good understanding of BCS and, because of that, when analyzing this factor we added those husbands who had moderate understanding of BCS; 53.1% had merely heard of it and 13.1% had never heard of BCS.

The main knowledge-acquisition way of hus-

Table 1. Characteristics of participants (N=1468)

General information	No. of husbands	%
Age, years		
Mean (SD)	49.4 (10.6)	
Range	27-79	
Religion		
Yes	176	12
No	1292	88
Educational background		
High school degree and below	880	59.9
College degree and above	588	40.1
Occupation		
Medicine and related	72	4.9
Others	1396	95.1
Family income (RMB)*		
≤3000†	1065	71.9
>3000‡	412	28.1
Method of payment		
Payment by oneself	492	33.5
Medical insurance	976	66.5
Whether family life happy or not		
Yes	1140	77.7
No	328	22.3
Whether wife's surgery performed or not		
No	208	14.2
Yes	1260	85.8
If yes, kind of surgery		
No BCS	1152	91.4
BCS	108	8.6

* Data from China Academic Journals Electronic Publishing House. Available from URL: <http://define.cnki.net/WebForms/WebDefines.aspx?searchword>

† medium low to low; ‡ medium high to higher;
SD: standard deviation, BCS: breast conserving surgery.
RMB: national currency; 3000 RMB=379.5 Euros or 488.7 US Dollars

bands was through doctors (63.6%). Most of the husbands (80.6%) had not strong desire to obtain knowledge of BCS (Table 2).

Attitudes of toward BCS

The results are shown in Table 3. The percentage of husbands endorsing BCS was higher than those opposing it (33.2 vs 18.8%). The percentage of husbands who believed that BCS was beneficial for women was higher than those who thought that such an operation was disadvantageous (30.1 vs 29.5%), and 40.4% of husbands did not know whether BCS benefits women or not. However, when choosing the type of operation of his wife,

Table 2. Husbands' level of understanding BCS and knowledge-acquisition pathways

	No. of patients	%
Level of understanding BCS		
Never heard	192	13.1
Merely heard	780	53.1
Know a few	452	30.8
Good understanding	44	3.0
Knowledge-acquisition pathways*		
Doctor	812	63.6
Nurse	96	7.5
Friends and family	392	30.7
Books and network	244	19.1
TV and radio	88	6.9
Others, such as lecture	40	3.1
Desire to obtain knowledge of BCS		
No	264	18.0
General	560	38.1
Relative	416	28.3
Extreme	228	15.5

*excluding the 192 cases who never heard of BCS; BCS: breast-conserving surgery.

81.5% of the husbands did not favor BCS. Up to 87.4% of husbands would advise other consultants not to choose BCS. If they were given another opportunity, 70.2% indicated that they would not advise their wives to choose BCS.

Factors affecting husbands' recommendation

Table 4 shows that many factors including husbands' age, religion, educational level, and so on affected husbands' suggestions ($p < 0.05$), their family income and the level of understanding of BCS having nothing to do. Moreover, multivariate logistic regression analysis showed that husbands who tended to choose BCS for their wives were younger, more educated, having religious beliefs, having inadequate understanding of the wife's condition and holding the suggestion of BCS from a physician. ($p < 0.05$, Table 5).

Husbands' perception of important reasons for recommending their wives selecting BCS

The reasons that husbands recommended their wives selecting BCS are displayed in Figure 1. A total of 408 husbands answered these questions. The top three reasons were "small surgical trauma and faster recovery" (68.6%), "the long-term survival rate of BCS is not different from that of radical mastectomy" (64.7%), and "wives dis-

Table 3. Husbands' attitudes toward BCS*

	No. of husbands	%
Whether agreed for women to undergo BCS		
Oppose	240	18.8
Neutral	612	48.0
Favor	424	33.2
Whether BCS is beneficial for women		
Don't know	516	40.4
No	376	29.5
Yes	384	30.1
Desire to conserve wife's breast		
Must not choose BCS	488	38.2
Prefer BCS, don't care of having not BCS	552	43.3
Prefer BCS	116	9.1
Extremely prefer BCS	72	5.6
Must choose BCS	48	3.8
Whether would initiate discussions with doctors about wife's suitability for BCS		
No	824	64.6
Yes	452	35.4
Self-judgment about wife's suitability for BCS		
Don't know	328	25.7
Appropriate	216	16.9
Not appropriate	732	57.4
Reaction to the finding that wife's breast could not be preserved		
Extremely calm	304	23.8
Relatively calm	644	50.5
A little disappointed	264	20.7
Extremely disappointed	48	3.8
Despair	16	1.3
How often husband would mention BCS to friends and family		
Never	440	34.5
Little	488	38.2
Sometimes	288	22.6
Usually	60	4.7
Surgical recommendations that husband would provide to other consultants		
Not BCS	160	12.5
Prefer not BCS	956	74.9
Prefer BCS	10	11.0
BCS	20	1.6
Whether husband would recommend his wife choose BCS if given another opportunity		
Hesitation	112	8.8
No	896	70.2
Yes	268	21.0

*excluding the 192 cases who never heard of BCS; BCS: breast-conserving surgery

ease condition was appropriate for BCS (according to the patient's self-judgment)" (62.7%).

A total of 1164 husbands gave the reasons for their not recommending BCS (Figure 2). The top three reasons were "fear of incomplete resection, which could easily lead to recurrence and metastasis" (88.7%), "wife disease condition was not appropriate for BCS (according to the patient's self-judgment)" (67.7%), and "fear of repeated surgery due to failed BCS" (59.5%).

Discussion

In Chinese family, the husband is the head and decides on the family matters. In their wives' BCS decision making, some studies have shown that husband was one of the effecting factors [7,18,21]. The present study showed that most of Chinese patients' husbands had negative attitudes toward BCS (Table 3). Of all the participants, those who supported women choosing BCS were more than the opponents, while facing the BCS choice of their own wives, only 18.5% of the husbands (including prefer, extremely prefer and must) preferred to reserve their wives' breasts. According to this study, the major reason was that husbands thought BCS was insecure and that the wife's body appearance was not important (Figures 1 and 2). This result is consistent with foreign reports about the attitudes toward breast surgical treatment.

The survey items showed lack of understanding BCS in husbands of mainland China (Table 2). Of all husbands (Figures 1 and 2), only 20.7% knew that the long-term survival rate of BCS is not different from that of mastectomy and 80.9% believed that BCS could not resect the tumor completely, easily leading to recurrence and metastasis. This suggests that, in China, husbands of breast cancer patients and the patients themselves had false understanding for BCS [7]. A previous study had shown that Chinese had a deep-rooted concept that radical surgery was safer than other surgical methods [21]. At the same time, we also found that in the majority of husbands the desire of obtaining knowledge was not strong (Table 2). Although people's cognition of things was an important factor affecting their behaviors [25], our findings showed that husbands' level of understanding BCS did not affect their recommendation about whether their wives conserve the breast or not. This may be that the husbands lack proper knowledge of BCS, while they have an incorrect understanding of the disease of their wives (Table 4, Figure 2). Husbands who did not understand the condition of their wife did not tend to recommend their wives choosing BCS (Table 5). In

Table 4. Analyses of factors affecting husbands' recommendation*

	Hesitation N (%)	No N (%)	Yes N (%)	p-value
Age [§]				
Mean (SD) (test) [†]	44.9 (7.8)	50.2 (11.0)	45.3 (7.0)	<0.001
Religion [†]				
No	88 (78.6)	824 (92.0)	204 (76.1)	0.000
Yes	24 (41.4)	72 (8.0)	64 (23.9)	
Educational background [†]				
College degree and above	48 (42.9)	344 (38.4)	152 (56.7)	<0.000
High school degree and below	64 (57.1)	552 (61.6)	116 (43.3)	
Occupation [†]				
Medicine and related occupation	4 (3.6)	44 (4.9)	24 (9.0)	0.035
Others	108 (95.1)	852 (95.1)	244 (91.0)	
Family income (RMB) [†]				
≤3000	84 (75)	608 (67.9)	192 (71.6)	0.188
>3000	28 (25)	288 (32.1)	76 (28.4)	
Method of payment [†]				
Pay by oneself	28 (25)	300 (33.5)	164 (61.2)	0.029
Medical insurance	84 (75)	596 (66.5)	104 (38.8)	
Whether happy his family life [†]				
No happy	40 (35.7)	148 (16.5)	64 (23.9)	0.000
Happy	72 (64.3)	748 (83.5)	204 (76.1)	
Level of understanding BCS [†]				
Merely heard	68 (60.7)	560 (62.5)	152 (56.7)	0.236
Know a few	44 (39.3)	336 (37.5)	116 (43.3)	
Understanding for wife disease condition [†]				
No	4 (3.6)	92 (10.3)	4 (1.5)	0.000
Yes	108 (96.4)	804 (89.7)	264 (98.5)	
Doctor's recommendations [†]				
No BCS	72 (64.3)	652 (72.8)	156 (58.2)	0.000
Neutral	32 (28.6)	216 (24.1)	72 (26.9)	
BCS	8 (7.1)	28 (3.1)	40 (14.9)	

*excluding 192 cases who never heard of BCS, [§]: Chi-square test, [†]: Analysis of variance, BCS: breast conserving surgery, RMB: national currency (see footnote of Table 1)

this condition, the relationship between husbands' level of understanding BCS and their action may not be statistically significant. This result is similar with the result of our previous research about breast cancer in Chinese women [7].

BCS increases medical expenses. Health insurance and income were factors affecting the implementation of BCS [7,13,26]. In this study, a proportion of husbands whose wives had health insurance, compared to those whose wives had not insurance, tended to not recommend their wives choosing BCS (Table 5). In addition, our results on the factors preventing husbands from recommending their wives choosing BCS showed that the opinion that "financial difficulties and they can not afford the cost of

BCS", held by 30.2% of the husbands, was an important preventing factor (Figure 2). However, our study found no correlation between "level of family income" and "whether or not husbands advise their wives choosing BCS" (Table 4). This matches with overseas research results which also indicate that, although economic factors were related to treatment methods chosen by patients, they were not determining factors affecting the selection of BCS [26]. Yet, the results concluding the present study are contradictory. It may be that the husbands conceal the real situation in the survey of family income, or the participants come from different social classes and different regions leading to a big gap in the family income, or China's medical insurance

Table 5. Multivariate logistic regression analyzing the independent factors affecting husbands recommendation*

	<i>Hesitation vs Yes OR (95% CI)</i>	<i>No vs Yes OR (95% CI)</i>	<i>Hesitation vs No OR (95% CI)</i>
Age			
Mean (SD)	0.979 (0.953,1.006)	1.039 (1.022,1.056)	0.943 (0.920,0.967)
Religion			
No	1.499 (0.851,2.640)	4.486 (2.965,6.785)	0.334 (0.193,0.580)
Yes			
Educational background			
College degree and above	0.382 (0.223,0.651)	0.313 (0.219,0.449)	1.218 (0.759,1.954)
High school degree and below			
Occupation			
Others	1.716 (0.567,5.195)	1.772 (0.997,3.148)	0.968 (0.330,2.838)
Medicine related			
Payment			
Insurance	3.705 (2.031,6.758)	2.027 (1.381,2.975)	1.828 (1.068,3.128)
Self			
Understanding wife's disease condition			
No	3.962 (0.929,16.899)	7.156 (2.499,20.490)	0.554 (0.190,1.617)
Yes			
Doctor's recommendations			
No BCS	2.498 (1.057,5.903)	4.429 (2.474,7.929)	0.564 (0.232,1.371)
Neutral	2.384 (0.952,5.969)	3.872 (2.071,7.241)	0.616 (0.241,1.573)
BCS			
Whether happy his family life			
No happy	2.127 (1.234,3.666)	0.709 (0.478,1.051)	3.001 (1.851,4.866)
Happy			

*excluding 197 cases who never heard of BCS; OR:odds ratio, 95% CI:95% confidence interval, BCS: breast-conserving surgery

system is flawed. And the true reasons need further research.

Some studies have shown that doctors directly impacted the implement of BCS [21, 27,28]. The present study also found that doctors could affect the implement of BCS by impacting the husbands' cognition of BCS (Table 5). However, the communication between doctors and husbands and how this affects BCS implementation needs further exploration in a future study. In addition, this study also found that age, religion, education and happiness of family life also affected the attitude of the husband toward BCS. These factors influenced husbands' attitudes toward BCS by affecting their ability of accepting and understanding new things and new concepts, attitude toward life, self-awareness of the family role and function and awareness of their own wives' role and status, etc [7,13].

In summary, our study shows that Chinese husbands are sceptic and lack comprehensive and correct understanding for BCS. Meanwhile, their desire of obtaining knowledge was not strong. Health

insurance, doctor's recommendation, age, religion, education and happiness of family life affected the attitude of the husbands toward BCS. Therefore, we must attach importance to husbands' education and ensure that they are able to obtain enough information so that they can help their wives make educated decisions. Our study is the first to reveal attitudes and affecting factors toward BCS in Chinese patients' husbands. However, it has some limitations. The questionnaire was not prefect. The respondents were limited in a hospital and the universality of results needs to be verified. Our intention is to perform in-depth studies to investigate attitudes for BCS in husbands with larger sample and larger area, as well as the influencing factors, and deeply reveal the unique role of Chinese husbands in their wives' treatment decision.

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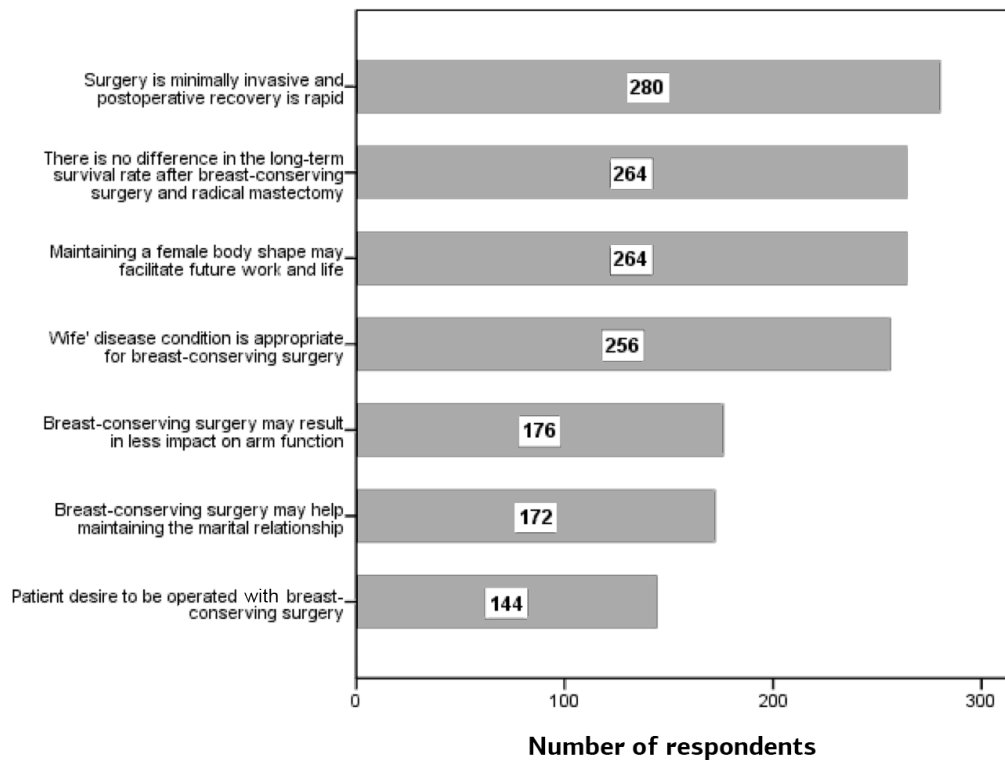


Figure 1. Husbands' perception of important reasons for recommending conservative therapy.

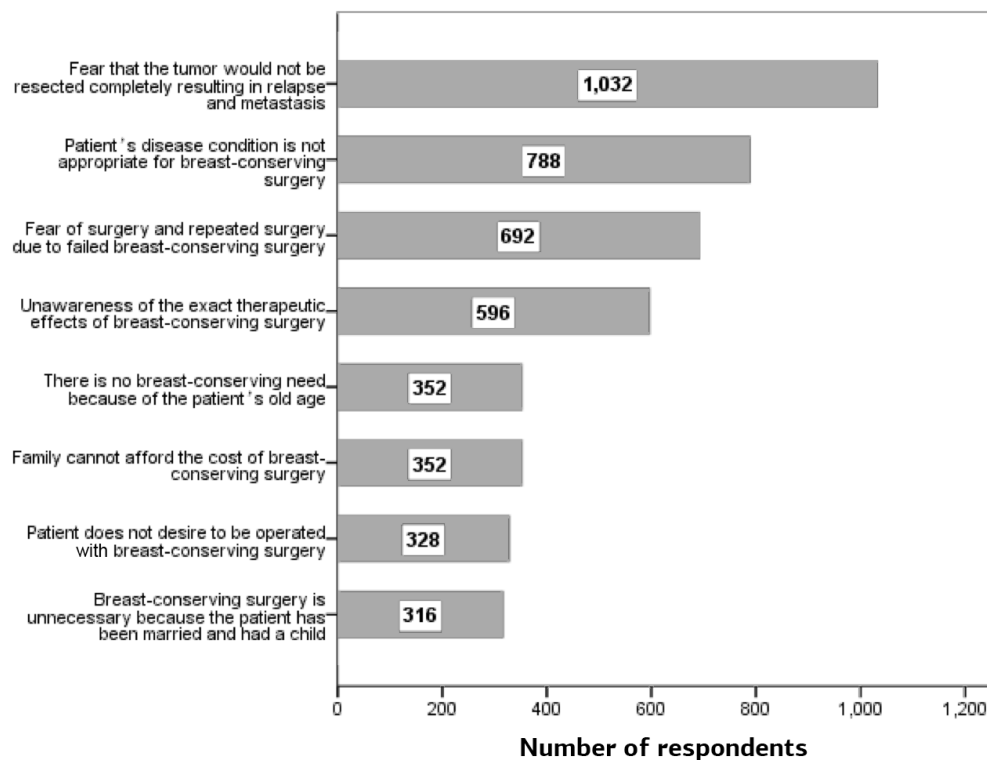


Figure 2. Husbands' perception of important reasons for not recommending conservative therapy.

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