

Scientific Article

Satisfaction of breast cancer patients regarding surgery and radiation therapy: A survey in Japan

Anneyuko I. Saito MD PhD ^{a,*}, Masaru Suda MD PhD ^b,
Keisuke Sasai MD PhD ^a, Reshma Jagsi MD PhD ^c

^a *Division of Radiation Oncology, Department of Radiology, Juntendo University School of Medicine, Chibaken, Japan*

^b *Department of Surgery, Juntendo University School of Medicine, Chibaken, Japan*

^c *Department of Radiation Oncology, University of Michigan, Ann Arbor, Michigan*

Received 28 May 2016; received in revised form 31 August 2016; accepted 8 September 2016

Abstract

Purpose: To evaluate patient satisfaction in Japan and factors, including timing factors, cost, and specific medical practices derived from Western influence (shared decision-making and second opinion), which might affect satisfaction.

Methods and materials: All patients who presented to 1 large Japanese department of radiation oncology for postoperative radiation therapy for breast cancer from September 2010 to November 2013 were included in this study. The questionnaire was distributed to patients after the radiation oncologist consultation, and patients were asked to complete it anonymously by the end of treatment. We measured patient satisfaction with overall treatment and for each treatment separately (surgery, radiation oncology). We further inquired regarding facts that could affect satisfaction, including time from diagnosis to treatment start, waiting time in waiting room for consultation, average length of consultations, out-of-pocket cost for breast cancer treatment, patients' opinion of the cost, level of inclusion of the patient in decision-making, level of the patient sharing her feelings with her physician, and whether the patients had asked for second opinion.

Results: Of 364 patients surveyed, 214 (58.5%) responded. Overall satisfaction and satisfaction with surgeon and with radiation oncologist were 95.7%, 98.5%, and 98.2%, respectively. Factors correlated with satisfaction were waiting time for the consult in the waiting room, treatment cost, and perceived degree of sharing feelings with physicians. Overall, 27 patients (12.6%) reported having asked for second opinions. Of those who did not seek a second opinion, most (173) indicated that they did not think it was necessary.

Conclusions: In a large, typical Japanese radiation oncology practice, breast cancer patients' satisfaction correlated with waiting time, cost, and the rate with which the patient shared her

Conflicts of interest: None.

* Corresponding author. Division of Radiation Oncology, Department of Radiology, Juntendo University School of Medicine, 2-1-1 Tomioka Urayasushi, Chibaken, Japan.

E-mail address: anyusaike@yahoo.co.jp (A.I. Saito)

<http://dx.doi.org/10.1016/j.adro.2016.09.001>

2452-1094/Copyright © 2016 the Authors. Published by Elsevier Inc. on behalf of the American Society for Radiation Oncology. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

feelings with her physician. This illuminates targets for quality improvement within the Japanese system and provides interesting cross-cultural comparative data for other countries in which the context of care may differ.

Copyright © 2016 the Authors. Published by Elsevier Inc. on behalf of the American Society for Radiation Oncology. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Japan is a country with excellent health status, with the longest life expectancy and one of the lowest rates of infant mortality.¹ In addition, the health care system has 4 potentially advantageous features. First, the universal health care system ensures that all residents of Japan are covered regardless of the medical problems they may have. Second, the system protects patients' freedom to choose their health care providers. The patients can go to any physician they want to see or any clinic or hospital where they wish to be treated. Third, the low patient copay required ensures that out-of-pocket expenditure for health per capita is less than half of that of the United States.¹ Fourth, there is a short waiting time for a doctor or nurse appointment, including a specialist appointment. The Organisation for Economic Cooperation and Development (OECD) reports reveal that all patients in Japan can see a doctor or nurse the same or next day when sick or need care, and all experience waiting times of less than 4 weeks to get a specialist appointment.² By comparison, in the United States, only 48% can see a doctor or nurse the same or next day, and the OECD average proportion of the population who can do so is 58%. In the United States, 76% experience waiting times of less than 4 weeks for specialist appointments, with the OECD average being 58% and 60%.² Thus, Japan compares quite favorably, and the expectations of Japanese patients are quite high.

It may sound from the foregoing description as though Japan has the ideal medical system; however, patient satisfaction scores in Japan are low compared with other countries in international studies.³⁻⁷ One of the reasons may be the long waiting time in the waiting room in the hospital. The aforementioned easy access to hospital care for patients increases the number of patient visits to the hospital; the number of doctors' consultations per capita is more than 3-fold higher than in the United States.¹ This has, unfortunately, resulted in the notorious Japanese "3 hours wait and 3 minutes consultation."⁸ Also, the simple fact that patients can meet a physician right away does not mean that they also receive treatment right away. The diagnosis to treatment time can be affected because of congestion. Further complicating the situation is that Japan has directly imported from Western countries several practices such as documentation of informed

consent, shared decision-making, and solicitation of second opinions, without tailoring these to Japanese culture.

The aim of the present study is to describe patient satisfaction with radiation oncology care in Japan and the factors, including timing factors (diagnosis to treatment time, waiting time in the waiting room, and consultation time), cost, and imported medical practices (shared decision-making and second opinions), that might affect patient satisfaction.

Methods and materials

Study sample

Our study sample was all women, diagnosed with breast cancer, who underwent surgery (mastectomy or breast-conserving surgery) and who presented to our institution's radiation oncology clinic for postoperative radiation therapy. Our institution, Juntendo Urayasu Hospital, is a university hospital and is also a "regional core" hospital, which attracts patients from wide areas. Urayasu is a suburb of Tokyo with 165,000 residents; because the area contains the Tokyo Disney Resort, it attracts many people from not only other cities of Japan, but also from outside of the country; its predominant local economy is based on tourism.

We included stage 0 to III breast cancer patients who presented from September 2010 to November 2013. Inclusion criteria were as follows: breast cancer patients who came to our department for postoperative radiation therapy, breast cancer stages 0 to III, age ≥ 18 years, Karnofsky performance status ≥ 50 , adequate understanding of Japanese language, and physical and mental capability to understand and complete the questionnaires.

Data collection

After institutional review board approval, all eligible patients were given the study questionnaire after the radiation oncologist consult in the department of radiation oncology and asked to complete the survey anonymously before the end of the radiation therapy period, which lasted between 4 to 6 weeks. The questions in the questionnaire were all written in Japanese. Study staff was available for assistance if requested.

Measures

We measured patient satisfaction regarding breast cancer treatment by using a continuous percentage (full satisfaction = 100%; no satisfaction = 0%) for the overall treatment and for each specific treatment (surgery, radiation therapy). In addition, we asked questions regarding the following hypothesized correlates of satisfaction: time from diagnosis to treatment start, waiting time in the waiting room for consultation, average length of consultations, out-of-pocket cost for breast cancer treatment the patient received before start of radiation therapy (the cost of surgery and, in some patients, systemic therapy), the patients' opinion of the cost (categorized as "Far too inexpensive," "Kind of inexpensive," "Suitable," "Kind of expensive," and "Far too expensive"), the level of inclusion of the patient in decision-making, the level of patient sharing her feelings with her physician, and whether the patients had sought second opinion (when the answer was "No," the reason for this).

Analytic approach

All statistical analyses were computed using SAS, version JMP 9.0.0, software (Cary, NC). The correlation between patient satisfaction and each parameter was examined with linear regression analysis, using Pearson's correlation coefficient. A *P* value $\leq .05$ was interpreted as

evidence that the observed difference was statistically significant.

Results

Of 366 breast cancer patients surveyed, 2 were excluded because they had severe dementia and were considered not to have enough physical and mental capability to understand and complete the questionnaire, and 214 (58.5% of the 364 eligible) patients completed the survey.

Responding patients' perceptions and experiences with breast cancer care are summarized in Table 1. Patient satisfaction with providers was high (>95). Waiting time was just under an hour for an average 11-minute consultation, and waiting time was significantly negatively associated with overall satisfaction and satisfaction with the radiation oncologist. Costs for treatments before radiation therapy were significantly negatively associated with overall satisfaction and satisfaction with radiation oncologist. Few patients indicated that they perceived cost to be "far too expensive" (12; 5.7%), but many indicated that it was "kind of expensive" (102; 48.8%); most others indicated it was "suitable" (86; 41.2%) with only 9 (4.3%) suggesting it was "kind of inexpensive" and none endorsing that it was "far too inexpensive." Perceptions of cost were associated with actual reported costs ($P = .05$).

Table 1 Japanese patients' perceptions and experiences with breast cancer care

	Mean	SD	Correlation with satisfaction with...		
			Overall	Surgeon	Radiation oncologist
Patient-reported satisfaction with providers					
Overall (n = 212)	93.02	11.16			
Surgeon (n = 211)	94.75	12.8			
Radiation oncologist (n = 211)	96.68	7.81			
Timing					
Minutes of waiting time (n = 204)	54.64	41.39	<i>P</i> = .01	<i>P</i> = .46	<i>P</i> = .03
Minutes of consultation time (n = 207)	11.4	9.04	<i>P</i> = .5	<i>P</i> = .29	<i>P</i> = .63
Weeks from diagnosis to treatment (n = 207)	6.07	3.29	<i>P</i> = .72	<i>P</i> = .39	<i>P</i> = .18
Treatment cost in yen (n = 193) ^a	551,582	729,147	<i>P</i> = .02	<i>P</i> = .26	<i>P</i> < .01
Perceived amount of involvement in decision (n = 214)	42.83	24.35	<i>P</i> = .25	<i>P</i> = .32	<i>P</i> = .74
Perceived degree of sharing feelings with physicians (n = 212) ^b	92.61	12.79	<i>P</i> < .01	<i>P</i> < .01	<i>P</i> < .01

^a In 2013-2014, when this survey was administered, the yen was trading at approximately 100 yen to the US dollar.

^b Specifically, patients were asked, "Are you sharing all your opinion (even a negative one) with your physician?" and asked to rate on a scale of 1 to 100.

Perceived amount of involvement in decision-making was not correlated with satisfaction, but the perceived degree of sharing feelings with the physician was strongly associated with satisfaction.

Overall, 27 patients (12.6%) reported having asked for a second opinion. Those who asked for a second opinion had a trend toward lower overall satisfaction ($P = .09$). Of those who did not seek a second opinion, most (164) indicated that they did not think it was necessary (trend to higher overall satisfaction and satisfaction with radiation oncologist; $P = .1$ and $P = .06$, respectively); 19 indicated they wanted to start treatment as soon as possible (significant correlation with lower satisfaction with surgeon and trend with low satisfaction with radiation oncologist; $P = .02$ and $P = .1$, respectively); 14 indicated that their physician did not explain the option of a second opinion (significant correlation with lower satisfaction to radiation oncologist; $P = .01$); and only 3 worried that seeking a second opinion would make the physician feel bad (significant correlation with lower overall satisfaction and satisfaction with surgeon; both $P > .01$).

Discussion

Japan has excellent health outcomes and access to medical care, but many studies have noted the relatively low satisfaction of Japanese patients.³⁻⁷ We hypothesized that some of this dissatisfaction related to timing factors (long waiting time in the waiting room, short consultation time, and long diagnosis to treatment time), cost, and specific medical practices derived from the West (shared decision-making and second opinion) without tailoring to Japanese culture. We found that timing factors did indeed correlate with satisfaction, but satisfaction in this study was high overall, even though waiting times were high and consultation times were extremely short.

Given easy access, many patients in Japan go directly to specialists for care, often favoring those at large academic institutions. This has led to bankruptcy of small clinics, because, given the tight profit margin in Japanese health care, unpopular clinics cannot last long.⁹ In 1900, the number of hospitals with beds in Japan used to be more than 20,000, but is now only 8493.¹⁰

The Japanese Ministry of Health, Labor and Welfare worked out a countermeasure for this situation, deciding to charge patients an additional fee for direct consultations with a specialist. In 1994, hospitals with more than 200 beds were advised to charge this fee; from April 2016, this has been mandatory.¹⁰ The amount used to be freely decided by the hospitals. In a survey done at 2010, 20.2% were still free of charge, and most of the hospitals set it to around 1000 yen (the yen was trading at approximately 90 yen to the US dollar in 2010); only 12% of hospitals required more than 5000 yen, and the most expensive

24 hospitals charged 8400 yen.¹¹ From April 2016 onward, a new rule was launched, by which hospitals with more than 500 beds must charge 5000 yen or more to patients who come directly to the hospital. Nevertheless, it remains the case that in many hospitals, including our institution, there is no need to make a reservation for first visit. Anybody can walk in to the hospital and if paying the additional fee, can see a specialist on the day they want.

This necessarily causes waiting times in the Japanese system. For example, our chief breast cancer surgeon sees 60 to 70 patients a day on average and our radiation oncologist treat 500 to 600 patients a year in a setting without resident or trainee support. Moreover, our hospital is not special; this is typical of Japanese university hospitals. Patients on treatment, re-examination, or follow-up do have scheduled appointments, but because the numbers are large, it is almost impossible to see the patients on time and also to devote meaningful time to consultations. This causes the notorious situation of a “3 hours wait and 3 minutes consultation.”⁸ In fact, the average waiting time was 55 minutes and the average consultation time was 11 minutes in our study, considerably longer than the consultation time in another Japanese study of only 6 minutes.⁸ The difference may be caused by, in that study, patients being general patients; in our study, however, the patients were all cancer patients. We expect that an international audience will appreciate that even 11 minutes is an exceptionally short duration for a consultation visit with a specialist in radiation oncology. We also suspect that the international audience will find our waiting times to be long. A study from Stockholm investigated the waiting times in the waiting room and consultation time of breast cancer patients.¹² Only 3% of patients waited for 45 to 60 minutes, and most of the patients' (55%) consultation times were 5 to 15 minutes.

We observed a significant correlation between waiting time and satisfaction in our study, but no correlation between consultation time and satisfaction. There are few studies that investigate the correlation between waiting time and cancer patients' satisfaction. Famiglietti and colleagues from the MD Anderson Cancer Center surveyed 8069 cancer patients who had undergone radiation therapy and showed that waiting time was 1 of the items with strong correlation with satisfaction.¹³ However, in a systematic review from Denmark, which analyzed 11 studies, waiting time was 1 of 4 dimensions that were not highly important.¹⁴

Another important point is that easy access to immediate physician consultation does not necessarily translate into immediate commencement of treatment. In our study, the diagnosis to the first treatment time was 6.07 weeks. In Quebec, the median time from diagnosis to first treatment was 34 days,¹⁵ and increased with the number of diagnostic procedures performed. The median diagnosis to first treatment time was 48 days with 3 diagnostic procedures,

and 72 days with 4. In Japan, most of the patients undergo 3 or 4 diagnostic procedures (ultrasound, mammography, magnetic resonance imaging, and/or computed tomography), which is the case in our institution, where the median waiting time was 42 days (6.07 weeks). Liederbach and colleagues¹⁶ showed the diagnosis to surgery time of US breast cancer patients based on the National Cancer Data Base. The factor that showed correlation with longer than 30 days' delay was as follows: increasing age, black or Hispanic race, Medicaid or no insurance, low-education communities and metropolitan areas, increasing comorbidities, stage 0 and grade 1 disease, academic/research facilities, high-volume facilities, and facilities located in the New England, Mid-Atlantic, and Pacific regions. Our institution is an academic, high-volume facility, which is located in the metropolitan area of Urayasu. This could be 1 reason for our institution's diagnosis to treatment time being quite long. Petersen and colleagues¹⁴ showed that diagnosis to first treatment time has correlation with patients' satisfaction.

In our study, treatment expense had a correlation with patients' satisfaction. In Japan, patients younger than 70 years face a 30% copay for medical procedures, whereas those age 70 years or older have copays ranging from 10% to 30% depending on income; if the monthly copay reaches a given amount (this depends on the income of the patient, which ranges from 20,000 to 150,000 yen), the rest will be reimbursed. The median out-of-pocket cost of surgery \pm systemic therapy reported in our study was 517,850 yen. This is similar to estimates from the Japanese breast cancer society,¹⁷ which estimated that the total cost of breast-conserving surgery and sentinel lymph node biopsy and the 7-day hospital stay would be 750,000 yen. Although we did not measure costs of radiation therapy in our study, we believe it may be of interest to the international audience that the total cost of radiation therapy to the breast (25 fractions), is estimated by the Japanese breast cancer society¹⁷ to range from 470,000 to 700,000 yen. The cost of hormonal therapy for 1 year would be from 140,000 to 550,000 yen. The cost of chemotherapy would be from 150,000 to 680,000 yen. The cost of Herceptin (for 18 times use) would be 2,160,000 yen. Of note, these costs represent the total costs; copays would be 30% of these amounts. Also, if the monthly expense exceeds the cap as described previously, the rest would be reimbursed, which means that if treatment ends within 1 month, copays are substantially reduced.

Even though costs compare favorably to other countries, in our study, 54.5% of the patients indicated the cost as "Far too expensive" or "Kind of expensive." Here, what matters is not the surgery, because this treatment ends within 1 month and so much of the cost, which exceeds the cap, will be reimbursed. What matters here is the systemic therapy, and because in Japan the cost of drugs is high, this matters very much. Of all patients

asked to participate in this study, 230 (62.8%) underwent some form of systemic therapy before radiation therapy and 10 (2.7%) used Herceptin before radiation therapy.

The perceived amount of involvement in decision-making did not show any correlation to satisfaction, but the amount of sharing feelings showed strong correlation to satisfaction. Bruera and colleagues reported that 89% of breast cancer patients of the MD Anderson Cancer Center wanted to be included in treatment decision-making.¹⁸ Janz and colleagues reported that higher education was significantly associated with patients' preferred level of control.¹⁹ Keating colleagues reported that 64% of the patients desired a collaborative role in decision-making and the patients whose reported actual role matched their desired role were more satisfied with their treatment.²⁰ We hypothesized that relationships between shared decision-making and satisfaction might differ in Japanese culture. Our study showed that patients who rated their perceived amount of involvement in decision-making highly did not always rate their satisfaction highly; however, the rate the patient shared her feeling with her physician did correlate with satisfaction. According to the report of the Ministry of Health, Labor and Welfare's survey conducted among 152,988 patients,²¹ 44.5% of outpatients and 49.5% of inpatients felt they could totally share their feelings or ask their questions, and 6.3% of the outpatients and 7.2% of the inpatients could not do that at all in Japan. In Japanese culture, it remains challenging to share one's feelings, and our study suggests that even in our culture, if this were improved, patients' satisfaction might increase.

Only 12.6% of responding patients in our study reported having asked for a second opinion, and these patients had a trend toward lower overall satisfaction. Given the importance of respect for authority in Japanese culture, one might have worried that more respondents would have endorsed a concern about second opinions making the initial physician feel bad. However, it is possible that some of the many who perceived no need at all for a second opinion may have so strongly internalized this norm of respect for authority that they did not even contemplate questioning it.

Conclusion

Our survey showed that breast cancer patients' satisfaction correlated with waiting time, cost, and the rate with which the patient shared her feelings with her physician. This survey provides insights regarding the experiences and satisfactions of patients with breast cancer in the context of the Japanese health care system. We hope that this information is informative to others in different cultures and health care systems as well as to those within the Japanese system who seek to increase patient satisfaction.

Acknowledgment

We thank the many breast cancer patients who participated in this survey.

References

1. OECD Health Statistics. Available at: http://www.oecd-ilibrary.org/social-issues-migration-health/data/oecd-health-statistics_health-data-en. Accessed October 3, 2016.
2. OECD Library. Waiting times for a doctor or nurse appointment and a specialist appointment, 2013. Available at: http://www.oecd-ilibrary.org/governance/government-at-a-glance-2015/waiting-times-for-a-doctor-or-nurse-appointment-and-a-specialist-appointment-2013_gov_glance-2015-graph129-en. Accessed April 16, 2016.
3. Blendon R, Leitman R, Morrison I, Donelan K. Satisfaction with health systems in ten nations. *Health Affairs (Millwood)*. 1990;9:185-192.
4. Kurita J, Watanabe Y, McBride C, Kawai K, Anderson R. A comparative study of patient satisfaction with health care in Japan and the United States. *Soc Sci Med*. 1994;39:1069-1076.
5. OECD Library. Government at a glance, 2015. Available at: http://www.oecd-ilibrary.org/governance/government-at-a-glance-2015/waiting-times-for-a-doctor-or-nurse-appointment-and-a-specialist-appointment-2013_gov_glance-2015-graph129-en. Accessed April 16, 2016.
6. Sweden, Canada outrank U.S. on healthcare. *International Business Times*. Available at: <http://www.ibtimes.com/sweden-canada-outrank-us-healthcare-190764>. Accessed December 26, 2015.
7. HawkPartners. Patient pulse executive summary, 2012. Available at: <http://hawkpartners.com/perspectives/2012-patient-pulse-executive-summary>. Accessed April 16, 2016.
8. Wooldridge AN, Arató N, Sen A, Amenomori M, Fetters MD. Truth or fallacy? Three hour wait for three minutes with the doctor: Findings from a private clinic in rural Japan. *Asia Pac Fam Med*. 2010;9:11.
9. Japan's medical infrastructure crumbling. *Japan Today*. Available at: <http://www.japantoday.com/category/kuchikomi/view/japan%E2%80%99s-medical-infrastructure-crumbling>. Accessed April 16, 2016.
10. Ministry of health, Labor and Welfare. Medical care. Available at: <http://www.mhlw.go.jp/toukei/youuran/aramashi/byouki.pdf>. Accessed April 16, 2016.
11. Care review Inc..The result of investigation of amount of direct consult to specialists [Japanese]. Available at: http://www.carereview.co.jp/reference/news_release/56.html. Accessed April 16, 2016.
12. Bergenmar M, Nylén U, Lidbrink E, Bergh J, Brandberg Y. Improvements in patient satisfaction at an outpatient clinic for patients with breast cancer. *Acta Oncol*. 2006;45:550-558.
13. Famiglietti RM, Neal EC, Edwards TJ, Allen PK, Buchholz TA. Determinants of patient satisfaction during receipt of radiation therapy. *Int J Radiat Oncol Biol Phys*. 2013;87:148-152.
14. Petersen GS, Knudsen JL, Vinter MM. Cancer patients' preferences of care within hospitals: A systematic literature review. *Int J Qual Health Care*. 2015;27:384-395.
15. Mayo NE, Scott SC, Shen N, Hanley J, Goldberg MS, MacDonald N. Waiting time for breast cancer surgery in Quebec. *CMAJ*. 2001;164:1133-1138.
16. Liederbach E, Sisco M, Wang C, et al. Wait times for breast surgical operations, 2003-2011: A report from the National Cancer Data Base. *Ann Surg Oncol*. 2015;22:899-907.
17. Japanese Society of Breast Cancer. Cost of breast cancer treatment. [Japanese]. Available at: <http://jbsfpguideline.jp/category3/q018/>. Accessed January 18, 2016.
18. Bruera E, Willey JS, Palmer JL, Rosales M. Treatment decisions for breast carcinoma: Patient preferences and physician perceptions. *Cancer*. 2002;94:2076-2080.
19. Janz NK, Wren PA, Copeland LA, Lowery JC, Goldfarb SL, Wilkins EG. Patient–physician concordance: Preferences, perceptions and factors influencing the breast cancer surgical decision. *J Clin Oncol*. 2004;22:3091-3099.
20. Keating NL, Guadagnoli E, Landrum MB, Borbas C, Weeks JC. Treatment decision making in early-stage breast cancer: Should surgeons match patients' desired level of involvement? *J Clin Oncol*. 2002;20:1473-1479.
21. Ministry of Health, Labor and Welfare. Patients survey of 2014. [Japanese]. Available at: <http://www.mhlw.go.jp/toukei/saikin/hw/jyuryo/14/dl/kekka-gaiyo.pdf>. Accessed April 16, 2016.