



# SURVEY ON EMBARRASSMENT OF BREAST CANCER PATIENTS RECEIVING RADIATION THERAPY

Y. HAMA, E. TATE

<sup>1</sup>Research Center for Rational Use of Drugs, Tehran University of Medical Sciences, Tehran, Iran

<sup>2</sup>Department of Epidemiology, School of Public Health, Iran University of Medical Sciences, Tehran, Iran

**Abstract – Objective:** When receiving postoperative radiation therapy for breast cancer, patients need to get undressed to prevent setup errors and to minimize the build-up of dose at the skin surface. However, removing clothes is a great mental burden for patients. The purpose of this study was to investigate the embarrassment of female patients undergoing adjuvant radiation therapy for breast cancer.

**Materials and Methods:** We conducted a cross-sectional study involving questionnaire about feelings of embarrassment among patients ( $n = 150$ ) with breast cancer receiving postoperative radiation therapy. The questionnaire consisted of two parts: Part I, the degree of resistance to exposing the upper body; and Part II, the desire to wear clothes under various circumstances.

**Results:** For the question “What do you think about removing the clothes from your upper body?”, 39.0% answered “I want to wear clothes if possible” (A1), and 14% answered “I am embarrassed that I strongly desire to wear clothes” (A2). The proportion of women who answered A1 or A2 increased significantly with the involvement of male radiation therapists, whereas the proportion of women who answered A2 increased significantly with the absence of female therapists.

**Conclusions:** The participation of male therapists and the absence of female therapists were factors that made patients’ embarrassment worse.

**KEYWORDS:** Psycho-oncology, Breast cancer, Radiotherapy, Mental stress, Quality management.

## INTRODUCTION

Radiation therapy is recommended to most patients with stage 0, I, II and III breast cancer after lumpectomy or mastectomy. A total of 45–50 Gy in 25 daily fractions delivered over five weeks is often considered the standard adjuvant radiation therapy. Hypofractionated radiotherapy delivered in doses of 40–42.5 Gy over 15–16 fractions, with all doses given five days per week, is a valuable alternative to conventional fractionated radiotherapy after breast-conserving surgery<sup>1-4</sup>. When receiving radiotherapy, patients need to get undressed from the waist up in order to prevent gross setup errors and to minimize the build-up of dose at the skin surface. However, removing clothes from the upper body every day is a big mental

burden for female patients. There have been no studies on embarrassment caused by removing clothes from the waist up at the time of radiation therapy.

The purpose of this study was to investigate the embarrassment of female patients undergoing adjuvant radiation therapy for breast cancer.

## MATERIALS AND METHODS

This was a survey-based, cross-sectional study in which we asked questions about feelings of embarrassment during radiation therapy in our hospital. The study was carried out from January 2014 to December 2016. A total of 150 female patients (mean age 53.3 years; SD 11.9 years) who were



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/)



receiving adjuvant radiation therapy for breast cancer (Stages 0, I, II and III) were included in the study. The exclusion criteria were diagnosed depression or dementia and use of cognition-impairing drugs. This study was conducted in accordance with the Ethical principles of the Declaration of Helsinki of 1975, as revised in 2000, and written informed consent was obtained from all patients. The data were collected by female nurses and recorded systematically for each subject.

Patients were asked to choose one answer from multiple choices for each question. A semi-structured questionnaire was used for data collection. The major components of the questionnaire were divided into two parts: Part I, the degree of resistance to exposing the upper body; and Part II, the desire to wear clothes under various circumstances. In our hospital, radiation therapy is carried out by two radiation therapists. In the evaluation of Part II, three situations were assumed: 1) two female radiation therapists are involved, 2) one female and one male radiation therapist are involved, and 3) two male radiation therapists are involved. Inter-group comparison of response results was by a paired t-test, and  $p$ -values of less than 0.05 were regarded as statistically significant.

## RESULTS

### Part I: Degree of resistance to exposing the upper body

A summary of questions and responses to each question is shown in Table 1. For the question

“What do you think about removing the clothes from your upper body?”, 43% ( $n = 65$ ) answered “I feel nothing”, 39.0% ( $n = 58$ ) answered “I want to wear clothes if possible”, and 14% ( $n = 21$ ) answered “I am embarrassed that I strongly desire to wear clothes”.

### Part II: The desire to wear clothes under various circumstances.

For the question “If two female radiation therapists perform treatment (F/F), do you want to wear underwear?”, 46% ( $n = 69$ ) answered “I do not need to wear underwear”, 28% ( $n = 42$ ) answered “I do not care whether I wear underwear or not”, 22% ( $n = 33$ ) answered “I would like to wear underwear if possible” (A1), and 2.7% ( $n = 4$ ) answered “I strongly desire to wear clothes” (A2).

For the question “If one female radiation therapist and one male radiation therapist perform treatment (F/M), do you want to wear underwear?”, 20.7% ( $n = 31$ ) answered “I do not need to wear underwear”, 26.7% ( $n = 40$ ) answered “I do not care whether I wear underwear or not”, 46% ( $n = 69$ ) answered “I would like to wear underwear if possible” (A1), and 6% ( $n = 9$ ) answered “I strongly desire to wear clothes” (A2).

For the question “If two male radiation therapists perform treatment (M/M), do you want to wear underwear?”, 16.7% ( $n = 25$ ) answered “I do not need to wear underwear”, 24.7% ( $n = 37$ ) answered “I do not care whether I wear underwear or not”, 44.7% ( $n = 67$ ) answered “I would like to wear

**TABLE 1.** Summary of questions and responses to each question.

Questions	Answers	n (%)	
Part-I: Degree of resistance to exposing the upper body. “What do you think about removing the clothes from your upper body?”	I feel nothing.	65 (43.0%)	
	I want to wear clothes if possible.	58 (39.0%)	
	I am embarrassed that I strongly desire to wear clothes.	21 (14.0%)	
	Others. No answer.	6 (4.0%)	
Part-II: The desire to wear clothes under various circumstances. “Do you want to wear underwear?”			
Answers			* $p < 0.001$
If two female radiation therapists perform treatment. (F/F)	I do not need to wear underwear.	69 (46.0%)	
	I do not care whether I wear underwear or not.	42 (28.0%)	
	I would like to wear underwear if possible. (A1)	33 (22.0%)	
	I strongly desire to wear clothes. (A2)	4 (2.7%)	
	Others. No answer.	2 (1.3%)	
If one female radiation therapist and one male radiation therapist perform treatment. (F/M)	I do not need to wear underwear.	31 (20.7%)	
	I do not care whether I wear underwear or not.	40 (26.7%)	
	I would like to wear underwear if possible. (A1)	69 (46.0%)	
	I strongly desire to wear clothes. (A2)	9 (6.0%)	
	Others. No answer.	1 (0.6%)	
If two male radiation therapists perform treatment. (M/M)	I do not need to wear underwear.	25 (16.7%)	
	I do not care whether I wear underwear or not.	37 (24.7%)	
	I would like to wear underwear if possible. (A1)	67 (44.7%)	
	I strongly desire to wear clothes. (A2)	20 (13.3%)	
	Others. No answer.	1 (0.6%)	

underwear if possible" (A1), and 13.3% (n = 20) answered "I strongly desire to wear clothes" (A2).

The total proportion of women who answered they would like to wear clothes (A1+A2) was 24.7% (n = 37) for F/F, 52.0% (n = 78) for F/M and 58.0% (n = 87) for M/M. The proportion increased as more male radiation therapists participated in the treatment. The proportion of women who answered A1 or A2 increased significantly with the involvement of male radiation therapists (F/F vs. F/M:  $p < 0.001$ ; F/M vs. M/M:  $p = 0.296$ ; F/F vs. M/M:  $p < 0.001$ ).

The proportion of women who answered that they strongly desired to wear clothes (A2) was 2.7% (n = 4) for F/F, 6.0% (n = 9) for F/M and 13.3% (n = 20) for M/M. The proportion of women who answered A2 increased significantly as female radiation therapists' involvement disappeared (F/F vs. F/M:  $p = 0.156$ ; F/M vs. M/M:  $p = 0.032$ , F/F vs. M/M:  $p < 0.001$ ).

## DISCUSSION

To the best of our knowledge, this is the first study on embarrassment of female patients receiving post-operative radiation therapy for breast cancer. It has been considered that patients need to get undressed in order to prevent gross setup errors and to minimize the build-up of dose at the skin surface. So far, there has been no verification or scrutiny of sex preferences for radiation therapists and embarrassment. How the patient's feelings change depending on the sex of radiation therapists has not been investigated. It has been reported that female patients and female health care professionals prefer female gastroenterologists when to perform colonoscopy<sup>5</sup>. In the examination of breast cancer, about a third of women prefer a female breast surgeon for their breast examination<sup>6</sup>. Embarrassment during the examination was the major reason for same-gender preference<sup>6</sup>. In this study, even if only female radiation therapists perform the treatment, half of patients wanted to wear clothes. In this study, a quarter of the participants (24.7%, A1+A2, Table 1) wanted clothes even when treated by only female radiation therapists (F/F). This shows that the patient's embarrassment does not disappear even if only female therapists carry out the treatment.

The proportion of women who answered "I would like to wear underwear if possible" (A1) or "I strongly desire to wear clothes" (A2) increased significantly with the involvement of male radi-

ation therapists. This indicates that the participation of male therapists significantly increases patients' embarrassment. In the evaluation of the strong desire to be clothed (A2), the fact that female therapists did not participate in treatment was considered to enhance embarrassment significantly.

## CONCLUSIONS

Even if only female radiation therapists participated in treatment, it was found that a quarter of the patients felt embarrassment. The participation of male therapists and the absence of female therapists were factors that made patients' embarrassment worse.

### STATEMENT OF INTERESTS:

All authors have seen and agree with the contents of the manuscript and there is no financial interest to report.

## REFERENCES

- Speers C, Pierce LJ. Postoperative radiotherapy after breast-conserving surgery for early-stage breast cancer: a review. *JAMA Oncol* 2016; 2: 1075-1082.
- Haviland J1, Owen JR, Dewar JA, Agrawal RK, Barrett J, Barrett-Lee PJ, Dobbs HJ, Hopwood P, Lawton PA, Magee BJ, Mills J, Simmons S, Sydenham MA, Venables K, Bliss JM, Yarnold JR; START Trialists' Group. The UK Standardisation of Breast Radiotherapy (START) trials of radiotherapy hypofractionation for treatment of early breast cancer: 10-year follow-up results of two randomised controlled trials. *Lancet Oncol* 2013; 14: 1086-1094.
- Whelan TJ, Pignol JP, Levine MN, Julian JA, MacKenzie R, Parpia S, Shelley W, Grimard L, Bowen J, Lukka H, Perera F, Fyles A, Schneider K, Gulavita S, Freeman C. Long-term results of hypofractionated radiation therapy for breast cancer. *N Engl J Med* 2010; 362: 513-520.
- Smith BD, Bellon JR, Blitzblau R, Freedman G, Haffty B, Hahn C, Halberg F, Hoffman K, Horst K, Moran J, Patton C, Perlmutter J, Warren L, Whelan T, Wright JL, Jagsi R. Radiation therapy for the whole breast: Executive summary of an American Society for Radiation Oncology (ASTRO) evidence-based guideline. *Pract Radiat Oncol* 2018; 8: 145-152.
- Shah DK, Karasek V, Gerkin RD, Ramirez FC, Young MA. Sex preferences for colonoscopists and GI physicians among patients and health care professionals. *Gastrointest Endosc* 2011; 74: 122-127.
- Groutz A, Amir H, Caspi R, Sharon E, Levy YA, Shimonov M. Do women prefer a female breast surgeon? *Isr J Health Policy Res* 2016; 5: 35.