

Functioning and Disability of Women Undergoing Breast Cancer Surgery: Utilization of the International Classification of Functioning, Disability, and Health

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Funcionalidade e Incapacidade de Mulheres Submetidas à Cirurgia Oncológica Mamária: Uso da Classificação Internacional de Funcionalidade, Incapacidade e Saúde

Funcionalidad y Discapacidad de las Mujeres Sometidas a Cirugía de Cáncer de Mama: Uso de la Clasificación Internacional del Funcionamiento, la Discapacidad y la Salud

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ABSTRACT

Introduction: The utilization of the International Classification of Functioning, Disability, and Health (ICF) guides the clinical reasoning and planning of cancer care. **Objective:** To determine the functioning and disability of women who underwent mastectomy, through the application of quality of life and self-esteem, perimeter, and biophotometry questionnaires, converted by the linking rules to the ICF categories. **Method:** Cross-sectional study with 30 women who underwent mastectomy, over 40 years old regardless of postoperative time, assessed through quality-of-life questionnaires, upper limb dysfunction, Rosenberg's self-esteem scale, biophotometry, and perimeter converted to the ICF conceptual model by the linking rules. **Results:** Women who underwent breast cancer surgery frequently presented changes in their body structure (hair (86.6%), breast and nipples (76.6%)), and in their body functions, (pain in upper limb (83.3%) and reduced shoulder mobility in abduction (100%) and flexion (93%) movements); limitations in their daily activities (completing the daily routine (73.3%), transport (76.6%), turn or twist the hands (80%), washing body parts (73.3%), doing housework (73.3%)); limited participation (handling responsibilities (73.3%)), and environmental facilitators (family relationships and access to health services). **Conclusion:** Women who underwent breast cancer surgery had disabilities related to their body structure and functions, limitation of activities and participation and presence of environmental facilitators, suggesting impacts in the lives of these women beyond the health condition.

Key words: International Classification of Functioning, Disability and Health; Cancer Survivors; Breast Neoplasms; Physical Therapy Modalities.

RESUMO

Introdução: O uso da Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF) orienta o raciocínio clínico e o planejamento do cuidado oncológico. **Objetivo:** Determinar a funcionalidade e a incapacidade de mulheres mastectomizadas, por meio da aplicação de questionários de qualidade de vida e autoestima, perimetria e biofotometria, convertidos pelo método de ligação com as categorias da CIF. **Método:** Estudo transversal com 30 mulheres mastectomizadas com idade acima de 40 anos, independentemente do tempo pós-operatório, avaliadas por questionários de qualidade de vida, disfunção de membro superior, escala de autoestima de Rosenberg, biofotometria e perimetria, convertidos pelo método de ligação com as categorias da CIF. **Resultados:** As mulheres submetidas à cirurgia oncológica mamária apresentaram frequentemente alterações na estrutura do corpo (pelos (86,6%), mama e mamilos (76,6%)) e na função do corpo (dor no membro superior (83,3%) e redução da mobilidade do ombro nos movimentos de abdução (100%) e flexão (93%)); limitações nas atividades (concluir rotina diária (73,3%), transportar (76,6%), rodar ou torcer utilizando as mãos (80%), lavar partes do corpo (73,3%), realizar tarefas domésticas (73,3%)); restrições na participação (lidar com responsabilidades (73,3%)); e presença de facilitadores ambientais (relação familiar e serviços de saúde). **Conclusão:** Mulheres submetidas à cirurgia oncológica mamária apresentam incapacidades relacionadas a alterações de estrutura e função do corpo, limitações de atividades, restrição na participação e presença de facilitadores ambientais, sugerindo impactos além da condição de saúde na vida delas.

Palavras-chave: Classificação Internacional de Funcionalidade, Incapacidade e Saúde; Sobreviventes de Câncer; Neoplasias da Mama; Modalidades de Fisioterapia.

RESUMEN

Introducción: El uso de la Clasificación Internacional del Funcionamiento, la Discapacidad y la Salud (CIF) orienta el razonamiento clínico y la planificación del tratamiento del cáncer. **Objetivo:** Determinar el funcionamiento y la discapacidad de las mujeres mastectomizadas, mediante la aplicación de cuestionarios de calidad de vida y autoestima, perimetria y biofotometria convertidos por el método de conexión con las categorías de la CIF. **Método:** Estudio transversal con 30 mujeres mastectomizadas, mayores de 40 años (independientemente del tiempo postoperatorio), evaluadas a través de cuestionarios de calidad de vida, disfunción del miembro superior, escala de autoestima de Rosenberg, biofotogrametría y perimetria convertida al modelo conceptual CIF por el método de conexión. **Resultados:** Las mujeres sometidas a cirugía de cáncer de mama presentaron alteraciones frecuentes en la estructura del cuerpo (cabello (86,6%), dolor en las mama y pezones (76,6%)); en las funciones del cuerpo (dolor en el miembro superior (83,3%) y movilidad reducida del hombro en movimientos de abducción (100%) y flexión (93%)); limitaciones en sus actividades (llevar a cabo rutinas diarias (73,3%), en el transporte (76,6%), girar o torcer las manos o los brazos (80%), lavar partes del cuerpo (73,3%), realizar tareas domésticas (73,3%)); restricción de participación, (manejo de responsabilidades (73,3%)) y los facilitadores ambientales (relaciones familiares y el acceso a los servicios de salud). **Conclusión:** Las mujeres sometidas a cirugía de cáncer de mama presentan discapacidades relacionadas con cambios en la estructura y función corporal, limitaciones de actividad, restricciones de participación y la presencia de facilitadores ambientales que sugieren impactos más allá de la condición de salud de estas mujeres.

Palabras clave: Clasificación Internacional del Funcionamiento, de la Discapacidad y de la Salud; Supervivientes de Cáncer; Neoplasias de la Mama; Modalidades de Fisioterapia.

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INTRODUCTION

The disabilities of women survivors of breast cancer involve bio-psychosocial damages and the International Classification of Functioning, Disability and Health (ICF), a world-reference tool to guide the evaluation process, the intervention and physiotherapeutic follow-up¹.

ICF addresses health components that allow the perception of the individual as a whole in addition to helping the construction of individualized, patient-centered therapeutic projects, structuring and strengthening of health indicators in Health Information Systems^{2,3}. In Lourenço et al.⁴, through the Whodas 2.0 questionnaire, it was concluded that 94% of the women survivors of breast cancer presented some sort of disability associated with intense fatigue and worse quality of life and sleeping. These problems reveal the relevance and necessity to integrate information, in addition to the health status associated with the functioning during clinical evaluations and therapeutic conducts.

Notwithstanding the importance of this approach, studies about ICF utilization and dissemination demonstrated its poor application in clinical practice for this population or measuring one component only^{5,6}. With the objective of evaluating the disability and functioning of women in breast cancer treatment, Castro et al.⁷ reported that the utilization of ICF questionnaires as core sets for breast cancer and Whodas 2.0 has positive and negative aspects as scarce practicality and knowledge of how to use it. The revision of Santos et al.⁵ concluded that the utilization of ICF in women with breast cancer is low due to professional unawareness, misinformation about the level of complexity, poor involvement of managers and lack of macro-institutional initiative, however, all the studies emphasized the importance of the bio-psychosocial vision in the therapeutic approach.

The research question of the present study, considering the challenges of using ICF is: has the physiotherapeutic evaluation form of a Minas Gerais rural public service addressed all ICF components common in clinical practice for women with breast cancer? The objective of the study was to determine the functioning and disability of women submitted to breast oncologic surgery through the application of a therapeutic evaluation form structured with questionnaires of quality of life, shoulder, elbow, and hand disorders, perimetry and biophotometry and association with ICF categories.

METHOD

Quantitative, cross-sectional study with sample by convenience approved by the Institutional Review Board

of “*Universidade Federal de Uberlândia, Minas Gerais*” report number 2.731.732.

Thirty volunteers diagnosed with breast cancer submitted to oncologic surgery in public and private hospitals of the “*Triângulo Mineiro*” and “*Alto Parnaíba*” regions of any race or ethnicity older than 40 years beginning therapeutic treatment, regardless of post-surgery time were enrolled in the present study.

The inclusion criteria were volunteers submitted to radical and conserving oncologic surgery who signed the Informed Consent form. Presence of lesions and/or wounds in the breast, metastasis of primary cancer and pathological fractures of the upper limbs (UL) were the exclusion criteria.

The evaluation was based in the following instruments:

1. Questionnaire Disabilities of Arm, Shoulder and Hand (DASH): 30 self-applicable questions with items addressing the level of difficulty while performing activities; intensity of the pain symptoms, weakness, and paresthesia; compromise of social activities; sleeping difficulties and psychological compromise referred to the week before the application of the instrument. Each item of the questionnaire has five possibilities of response, ranging from 1 for no difficulty or symptom until 5 for extreme disability or symptom. The score is obtained by the sum of the values attributed to each item, minus 30 and dividing the result by 1.2. Higher score means great disability⁸.
2. Questionnaires of Life of the European Organization for Research and Treatment of Cancer (EORTC) versions QLQ-30 and QLQ-BR 23: 53 questions addressing specific cancer symptoms, treatment side effects, psychological status, physical functioning, personal interaction, and global health. Questions 1 to 28 and 31 to 53 are scored from 1 to 4, being 1 – no; 2 – mild; 3 – moderately and 4 – very. Questions 29 and 30 refer to the classification of quality of life and health status from 0 to 7, being 0 – poor and 7 – excellent. At last, the values attributed to each question are added, the higher the value, better is the quality of life without specific categorization⁹.
3. Rosenberg Self-Esteem Scale (RSE): 10 multiple choice questions addressing the positive image and low self-esteem. For both questionnaires, a response value representing best the current status of the volunteer is attributed. Each statement has four options of response from “strongly agree” until “strongly disagree”. At the end of the questionnaire, the values attributed to each response are added in order to classify global self-esteem, being high with score above 31 points, average, between 21 and 30 points and low, below 20 points¹⁰.

4. Biophotogrammetry: ensures the accuracy of the measurements of the range of motion (ROM) of extension, flexion and abduction of the shoulder and flexion of the elbow, these movements are analyzed by photography of specific and standardized anatomic points in software Kinovea® version 0.8.15 of 2014. The method is highly reliable and reproducible inter and intraexaminers. The photos are taken with a high-resolution camera Canon model EOS Rebel T6 EF-S 18-55 f/3.5-5.6 III, focusing the 15 mm diameter high relief cylindrical markers¹¹.
5. Perimetry: performed bilaterally at each 5 centimeters in 8 points marked upward beginning in the wrist fold.

According to the ICF conceptual model, the components “body structure and function” were addressed by data of surgery, questions of EAR, of DASH, of quality of life, bio photometry and perimetry. “Activity and participation” were addressed in the questionnaires DASH, EAR and QLQ. “Environmental factors” covered questions about health and family relations and at last, “personal factors” collected through identification of the patient, including life habits (alcohol and tobacco use).

The study volunteers attended the outpatient of Physiotherapy of “Hospital de Clínicas – Hospital do Câncer da Universidade Federal de Uberlândia” after breast cancer treatment. Prior to the physiotherapeutic intervention, they were invited to join the study and after accepting and signing the Informed Consent Form, they were evaluated with the instruments mentioned.

During a 50-minutes visit all the data were collected. Four undergraduate skilled and trained students were in charge of the standard evaluation. Firstly, personal information and data about the surgery were gathered (age, occupational activity, marital status, education, family income, main complaint, year of diagnosis of cancer, family history, medications in use, health habits, adjuvant treatment, associated complications, size of operation and dominance and appearance of the scar). Later, the questionnaires DASH, EORTC QLQ-30, EORTC QLQ-BR-23, and EAR were applied in a secluded environment, ensuring the privacy and confidentiality.

Perimetry and biophotogrammetry were performed with the patient seated. Perimetry was standardized with 8 points marked at each 5 cm upward having as primary reference the wrist fold and after marking, the circumference of each point was measured. Biophotogrammetry was made in a well-lit room and pre-determined distance between the camera and the patient, with anatomic points marked with pre-defined PVC cylindrical markers (acromion, lateral and medial epicondyles, styloid processes of radius and ulna and center of the wrist fold).

The volunteers were photographed with the hands in standard positions in frontal plane for the analysis of the shoulder abduction and in profile to verify the flexion and extension of the shoulder and flexion of the elbow. The pictures were exported to software Kinovea® and with the points already marked, the axis of the movement was selected, and the angle was measured from a straight line drawn perpendicular to the floor and another through the referenced anatomic point.

The data collected were tabulated and every topic evaluated, and its respective ICF health components were linked. ICF categories were attributed to all the instruments DASH, EAR, QLQ, perimetry, biophotogrammetry and the data from the anamnesis according to the linking rules defined by Cieza et al.¹² applied by three independent investigators who met and at least two of them listed the compatible categories. For the questionnaires QLQ, DASH and EAR each question received one category while biophotometry and perimetry, one category for the whole instrument.

Qualifiers that best portrayed the patient condition were defined for each category. For questionnaires of quality-of-life DASH and self-esteem, the qualifiers followed the order of response of the questionnaire because each question had five options with the same ICF approach considering the order from low to high compromise. For perimetry, it was considered the percentage of difference of value between the limbs in the same point and the level of range-of-motion measured in biophotometry based in the percentage model recommended by ICF. For the component “activity and participation”, only the performance of the patients was evaluated because many categories addressed were included in the self-responded questionnaires. Only the first qualifier was considered to reach the values of the statistical analyzes of the component “body structure” because it represents the level of disability of the patient, however, the other qualifiers defined the sample.

A descriptive analysis of the qualifiers of each category of ICF was conducted by percentage of responses. For the statistical analysis, the chi-square adherence test was applied to evaluate the frequency of the categories of functioning, considering those presenting percentage of some level of difficulty reflected by values of mean and median of each category for the 30 volunteers analyzed. All the analyzes adopted the level of significance of 5%. Software SPSS version 21 was utilized.

RESULTS

Thirty volunteers joined the study, mean age of 54.7 ± 9.2 years. Table 1 describes the characterization of the sample.

Table 1. Characterization of the sample of 30 volunteers* submitted to breast cancer oncologic surgery

Data	N (%)
Age	
38 - 40 years	2 (6.6)
41 - 50 years	8 (26.6)
51 - 60 years	12 (40)
61 - 70 years	6 (20)
Above 70 years	2 (6.6)
Marital Status	
Single	6 (20)
Married	16 (53.3)
Divorced	3 (10)
Widow	5 (16.6)
Time between the surgery and evaluation	
0 - 4 months	15 (50)
5 - 9 months	5 (16.6)
10 - 14 months	5 (16.6)
15 - 19 months	1 (3.3)
Above 20 months	4 (13.3)
Race	
Caucasian	28 (93.3)
Black	2 (6.7)

(*) Absence of addiction (alcohol and tobacco).

The instruments utilized in the evaluation addressed all ICF components, the “body functioning” presented higher prevalence of alterations in comparison with more categories utilized among all listed by the linking rules (33; 46%), followed by the components “activity and participation” (30; 41%), “body structure” (7; 10%) and “environmental factors” (2; 3%).

In relation to “body structure”, all the volunteers presented some alteration, mainly associated with partial absence of breasts and nipples (23; 76.6%), partial absence of hair (26; 86.6%), with presence of qualitative change, including accumulation of fluids, mainly in the shoulder (30; 100%), elbow (30; 100%) and wrist (30; 100%), in both sides but with higher frequency of the left side (18; 60%) (Table 2).

The component “body functioning” demonstrated that great part of the volunteers had some alteration, the most frequent were: chest pain (21; 70%), pain in the upper limb (25; 83.3%), mobility of the shoulder mostly in the movements of abduction (30; 100%) and flexion (28; 93%), muscle strength of UL (25; 83.3%) and level of energy (23; 76.7%) (Table 3).

Regarding “activity”, the restrictions commonly reported by the volunteers were to complete the daily routine (22; 73.3%), transport (23; 76.6%), reach (21; 70%), turn or twist the hands (24; 80%), wash body parts

(22; 73.3%) and doing housework (22; 73.3%). The main restriction in “participation” was handling responsibilities (73.3%) (Table 4). All the volunteers considered the access to health services (e580) as a complete facilitator in relation to “environmental factors”.

DISCUSSION

The present study concluded that women submitted to breast oncologic surgery presented disabilities with biopsychosocial damages.

The most affected “body structures” of the women evaluated represented by the breasts, nipple (s6302) and edema (s420) had severe alterations, and this is mainly related to the extirpation of the breast, the magnitude of the surgery and possible complications with lymphedema¹³. The mobility of one joint (b7100), mostly the movements of abduction and flexion of the shoulder and power of single muscles (b7300) stand out as the severer and more frequent body functions. This finding was encountered in the study of Marinho and Macedo¹⁴ who reported complications of movements of the homolateral upper limb to the surgery related to the radiotherapy treatment, post-surgical immobilization, syndrome of the axillary cord and lymphedema.

The function pain in upper limb (b28014) operated was also a frequent data as well as the touch function (b265). Bezerra et al.¹⁵ conducted a longitudinal study about this subject affirming that the sensory system in women who underwent breast oncologic surgery can be compromised as pain that can appear soon after immediate post-operation and persist with the radiotherapy treatment, inducing cutaneous and nerve reactions as well as the fear of immobilization and the own inflammation resulting from the surgical incision. In addition, radiotherapy treatment in some women induces hypoesthesia together with neural disorders like neuropathies from fibrosis and ischemia of neural tissue in the treatment site, favoring pain even in late post-surgery¹⁶.

The painful impact can compromise still more the psychic stability (b1263), sleeping (b134), trustworthiness (b1267) and handling stress and responsibility (d2400), categories with high frequency of qualifiers with severe alteration^{15,16}. These damages affect the ability of involving and performing daily activities because they cause suffering, anxiety, anguish and low self-esteem⁶. It is essential that the woman is cared by a multiprofessional team under inter-disciplinary approach able to minimize the suffering in several aspects and contexts¹⁷.

Undertaking multiple tasks (d2200), doing household (d640), completing daily routine (d2302), carrying in the hands (d4301), pulling (d4451) and wash body

Table 2. Frequency of the categories of the domain body structure of ICF according to the qualifiers of 30 volunteers submitted to breast cancer surgery

Category of ICF		s – Body Structure																Mean	Median	p-value	
		1 st . Qualifier of ICF						2 nd . Qualifier of ICF					3 rd . Qualifier of ICF								
		Some problem			No problem			Nature of disability					Local of the disability								
		1	2	3	4	%	0	9	%	1	2	7	9	%	1	2	3				%
s6302	Breasts and nipples	0	23	7	0	100	0	0	0	7	23	0	0	100	12	18	0	100	2.23	2	0.003
s7201	Joints of shoulder region	17	11	1	0	97	1	0	3	0	0	30	0	100	12	18	0	100	1.40	1	0.000
s73001	Elbow joint	26	0	2	0	93	2	0	7	0	0	30	0	100	12	18	0	100	1.06	1	0.000
s73011	Wrist joint	22	2	0	0	80	6	0	20	0	0	30	0	100	12	18	0	100	0.86	1	0.000
s8102	Skin of the upper extremity	0	5	10	0	50	15	0	50	0	0	0	30	100	12	18	0	100	1.33	1	0.082
s840	Structure of hair	21	4	1	4	100	0	0	0	4	26	0	0	100	0	0	30	100	1.60	1	0.000
s420	Structure of immune system	0	30	0	0	100	0	0	0	0	0	0	30	100	12	18	0	100	2.00	2	0.000

Caption: ICF = International Classification of Functioning, Disability and Health.

Note: Qualifiers (extension/nature/location): 1st Qualifier (0 – no disability/1 – mild disability/2 – moderate disability/3 – severe impairment/4 – complete disability/9 – not applicable); 2nd Qualifier (1 – total absence/2 – partial absence/7 – qualitative changes in structure, including accumulation of fluids/9 – not applicable); 3rd Qualifier (1 – right/2 – left/3 – both sides).

parts (d5100) involve actions of repetitive movements and in several directions of the UL. These tasks were frequently qualified as severer, justified by alterations of the movements of abduction and flexion of the shoulder (b7100) and power of isolated muscles (b7300) found in these women¹⁸. The interdependence of the categories shows what needs to be known about the context where the woman lives, whether she is married, carries out daily routine, has a job, responsible for the family and to identify the limitations of the activities involving daily life and investing in physiotherapeutic treatment with person-centered actions to recover the essential movements for her independence and autonomy.

If an oncologic surgery means a negative experience, the ICF proposes a broad view where it is feasible to figure out aspects that can strengthen the process of treatment and recovery, improving the functioning¹⁹. Great part of the women submitted to oncologic surgery presented qualifiers with restriction of self-care (d5700; d5101;

d5202), economic resources (d8700), family and social relations (d7608). These categories show that even going through a sensitive moment, these women took care of themselves, held a good family relation, were economically provided, optimized the access to health services and favored functioning¹³.

ICF has a specific core set for breast cancer with categories listed for its qualification. While comparing the categories selected in this study with the core set, it was seen that the components “activity and participation” presented more items. Carvalho et al.²⁰ carried out a similar study and identified categories related to “activity and participation” unaddressed by the core set. These authors justified that the core set is based in the choice of the categories of the disease, steering the focus to what actually matters – identify what the individual is able or not to do in its daily life²⁰.

At last, it is interesting to highlight that the form of structured physiotherapeutic evaluation of the oncology

Table 3. Frequency of the categories of ICF body function according to the qualifiers

Category of ICF		b – Body Function									Mean	Median	p-value
		Qualifier of ICF											
		Some barrier					No barrier						
		1	2	3	4	%	0	9	%				
b11420	Orientation to self	10	0	2	3	50.0	15	0	50.0	0.93	0.5	0.002	
b1263	Psychic stability	9	0	0	7	53.3	14	0	46.7	1.23	1	0.273	
b1267	Trustworthiness	2	0	11	5	60.0	12	0	40.0	1.83	3	0.027	
b1300	Energy level	12	0	0	11	76.7	7	0	23.3	1.86	1	0.497	
b134	Sleep functions	3	2	9	3	56.7	13	0	43.3	1.53	1	0.004	
b1344	Functions involving the sleep cycle	7	0	0	12	63.3	11	0	36.7	1.83	1	0.497	
b1400	Sustaining attention	6	0	0	7	43.3	17	0	56.7	1.13	0	0.025	
b1441	Long term memory	7	0	0	13	66.7	10	0	33.3	1.96	1	0.407	
b1800	Experience of self	6	0	0	8	46.7	16	0	53.3	1.26	0	0.061	
b1801	Body image	5	0	0	4	30.0	21	0	70.0	0.70	0	0.000	
b250	Taste function	7	0	0	7	46.7	16	0	53.3	1.16	0	0.067	
b265	Touch function	8	0	0	12	66.7	10	0	33.3	1.86	1	0.670	
b28010	Pain in head and neck	11	0	0	5	53.3	13	1	46.7	1.33	1	0.007	
b28011	Pain in chest	12	0	0	9	70.0	9	0	30.0	1.60	1	0.741	
b28014	Pain in upper limb	3	8	13	1	83.3	5	0	16.7	2.07	2	0.005	
b28018	Pain in body part	7	0	0	8	50.0	14	1	50.0	1.60	1	0.010	
b440	Respiration functions	8	0	0	4	40.0	18	0	60.0	0.80	0	0.006	
b5104	Salivation	5	0	0	13	60.0	11	1	40.0	2.20	1	0.007	
b5106	Regurgitation and vomit	3	0	0	2	16.7	24	1	83.3	0.66	0	0.000	
b5250	Elimination of feces	9	0	0	7	53.3	14	0	46.7	1.23	1	0.273	
b5253	Fecal continence	4	0	0	1	16.7	25	0	83.3	0.26	0	0.000	
b5350	Sensation of nausea	6	0	0	4	33.3	20	0	66.7	0.73	0	0.001	
b6400	Functions of sexual arousal phase	11	0	0	9	66.7	10	0	33.3	1.56	1	0.905	
b6402	Functions of orgasmic phase	9	0	0	7	53.3	2	12	46.7	8.50	4	0.000	
b7100	Mobility of a single joint (abduction of shoulder)	17	11	2	0	100.0	0	0	0.0	1.50	1	0.003	
b7100	Mobility of a single joint (flexion of the shoulder)	16	8	4	0	93.3	2	0	6.7	1.46	1	0.002	
b7100	Mobility of a single joint (extension of the shoulder)	13	3	3	0	63.3	11	0	36.7	0.93	1	0.011	
b7100	Mobility of a single joint (flexion of the elbow)	4	0	0	0	13.3	26	0	86.7	0.13	0	0.000	
b7200	Mobility of scapula	4	5	2	7	60.0	12	0	40.0	1.60	1	0.046	
b7300	Power of isolated group or muscle groups	7	0	0	18	83.3	5	0	16.7	2.63	4	0.007	
b740	Muscle endurance functions	3	0	0	15	60.0	12	0	40.0	2.10	2.5	0.020	
b7800	Sensation of muscle stiffness	3	6	5	2	53.3	14	0	46.7	1.26	1	0.005	

Caption: ICF = International Classification of Functioning, Disability and Health.

Note: Qualifier (0 – no barrier/1 – mild barrier/2 – moderate barrier/3 – severe barrier/4 – complete barrier/9 – not applicable).

Table 4. Frequency of the ICF categories of the domains activity and participation according to the qualifiers of 30 volunteers submitted to breast cancer surgery

d- Activity and participation (performance)												
Category of ICF		Qualifier of ICF								Mean	Median	p-value
		Some restriction					No restriction					
		1	2	3	4	%	0	9	%			
d170	Writing	3	0	2	3	26.7	22	0	73.3	0.70	0	0.000
d2200	Undertaking multiple tasks	9	0	9	1	66.3	11	0	36.7	1.33	1	0.049
d2302	Carrying out daily routine	8	0	0	14	73.3	7	1	26.6	2.43	2,5	0.010
d2303	Managing own activity level	13	0	4	3	66.6	10	0	33.3	1.23	1	0.027
d2400	Handling responsibilities	10	0	0	12	73.3	8	0	26.7	1.93	1	0.670
d2401	Handling stress	5	0	0	13	60	12	0	40.0	1.90	1	0.150
d4104	Standing	8	0	0	6	46.7	16	0	53.3	1.06	0	0.061
d4301	Carrying in the hands	7	4	5	7	76.6	7	0	23.3	1.93	2	0.856
d4451	Pushing	6	4	2	5	56.7	13	0	43.3	1.33	1	0.020
d4452	Reaching	5	4	4	8	70	9	0	30.0	1.90	2	0.453
d4453	Turning or twisting the hands or arms	7	5	3	9	80	6	0	20.0	2.07	2	0.504
d5100	Washing body parts	9	3	3	7	73.3	8	0	26.7	1.73	1	0.255
d5101	Washing whole body	9	0	0	4	43.3	17	0	56.7	0.83	0	0.014
d5202	Caring for hair	4	2	4	3	43.3	17	0	56.7	1.06	0	0.000
d5400	Dressing	6	3	3	6	60	12	0	40.0	1.50	1	0.061
d550	Eating	1	5	4	5	50	15	0	50.0	1.43	0,5	0.001
d5700	Ensuring one's own physical comfort	9	0	1	0	33.3	20	0	66.7	0.40	0	0.000
d5702	Maintaining one's health	8	4	5	2	63.4	11	0	36.7	1.30	1	0.080
d6300	Preparing simple meals	2	5	6	3	53.4	14	0	46.7	1.40	1	0.005
d640	Doing housework	5	1	5	11	73.3	8	0	26.7	2.20	3	0.053
d6501	Maintaining dwelling and furnishing	2	0	2	14	60	12	0	40.0	2.13	3	0.001
d6505	Taking care of plants indoors and outdoors	5	4	1	8	60	12	0	40.0	1.60	1	0.020
d7108	Basic interpersonal interactions	10	0	0	7	56.6	13	0	43.3	1.26	1	0.407
d7608	Family relationships	7	0	0	7	46.6	16	0	53.3	1.16	0	0.067
d7702	Sexual relationships	0	6	1	6	43.3	17	0	56.7	1.30	0	0.000
d8451	Maintaining a job	7	0	0	10	56.6	13	0	43.3	1.56	1	0.407
d8508	Remunerative employment	7	0	0	10	56.6	13	0	43.3	1.56	1	0.407
d8700	Personal economic resources	3	0	0	9	40	18	0	60.0	1.30	0	0.003
d9205	Socializing	4	0	0	3	23.3	23	0	76.7	0.53	0	0.000

Caption: ICF = International Classification of Functioning, Disability and Health.

Note: Qualifier (0- no problem/ 1 – mild problem/ 2 – moderate problem/ 3 – severe problem/ 4 – complete problem/ 9 – not applicable).

service of the hospital where the study was conducted addresses all the components of the ICF²¹. However, there is good representation of the component “body function” in the model of evaluation and at the same time, few categories listed in “environmental factors”, which is a limitation of the study. The component “activity and participation” was well represented, suggesting high

influence in determining the functioning and disability of women with breast cancer.

CONCLUSION

Women submitted to breast cancer oncologic surgery present changes in the body structure as nipples and breast,

shoulder articulation, hairs/furs; and in the body function, pain in the upper limb and articular function of the shoulder movement limiting the daily activities, negatively impacting their independence and autonomy. The use of an evaluation card addressing all the components of ICF ensures a whole vision of the individual.

CONTRIBUTIONS

The authors contributed equally to all the stages of the article and approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

None.

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