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## Felt Needs for Rehabilitation After Breast Cancer Treatment in Mexico

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### Abstract

Breast cancer (BC) is the most frequent type of malignancy among women worldwide and the most common cause of mortality, particularly in low and middle-income countries. As detection and treatment have improved, a larger number of surviving women need adequate rehabilitation after treatment. However, awareness among affected patients remains low. Thus, the aim of this study was to explore the needs and expectations concerning rehabilitation among Mexican women after breast surgery. An ethnographic approach was used. Eight focus groups were conducted in the north-central state of San Luis Potosí, Mexico, in 2014, in which women under treatment and survivors participated. Results showed that women had insufficient and misleading information concerning the need for rehabilitation from health care authorities. Women seemed to focus more on survival than on quality of life after treatment even though impairments limiting their daily life activities caused frustration and feelings of uselessness. In conclusion, many women perceived the need for rehabilitation, but information was largely lacking. Public health services fail to provide rehabilitation services, which are now partially covered by private organizations. Treatment for breast cancer should be accompanied by rehabilitation. Awareness, availability and access to physiotherapy services need to be put in place.

**Keywords:** breast cancer, physiotherapy, Mexico, postsurgery care, rehabilitation

## 1. Introduction

Breast cancer (BC) is one of the most common malignancies in the world [1]. In Mexico, it is the most frequent cancer among women, with incidence and mortality rates of 25 and 14 cases per 100,000 person-years, respectively [2]. Between 2007 and 2014, the incidence of BC has been increasing steadily reaching 29 cases per 100,000 women [3] with a large proportion being diagnosed in stages III and IV, which are associated with a more complex treatment and a lower survival probability [4].

The central-northern state of San Luis Potosí (SLP), where this study was carried out, is one of the most affected areas by this tumor [5]. During 2013, BC was the main cause of hospital discharge among women aged 20 years or more and it accounted for 24.6% of all reported malignancies, becoming the first cause of hospital morbidity with 55% of all registered cases of women aged 40–59 years old [5].

Timely diagnosis remains a major concern, especially in poor and marginalized women, due to the limited availability and access to preventive health services [6, 7]. Therefore, when women are detected with BC, it is often at an advanced stage when surgery is the primary treatment modality [8].

Mastectomy [9], but also chemo and radiotherapy [10, 11], often results in decreased motion of the affected extremity and along with pain and edema impairs the mobility and reduces the strength of the upper limb [10] affecting the women's quality of life (QoL) [10, 12]. The occurrence of these conditions can vary depending on who is assessing them (e.g., physiotherapist or self-reported), the treatment modality (e.g., surgery with or without chemo/radiotherapy) and the time elapsed since the surgery [11, 13].

Some relatively common consequences derived from the operation are difficult to deal with, especially if physiotherapy is lacking. For instance, lymphedema arising from the resection of lymph nodes can develop in 15–25% of the women after 1–5 years of surgery [13]. In such cases, physiotherapy can decrease edema by using manual lymph drainage or by compressing garments. Pain, another complaint affecting up to 50% of women surviving cancer [14], can also be relieved through physical means. Thus, postsurgical care should involve physical rehabilitation to help women recover the motion of her upper limbs and to reduce the edema and pain associated [15].

However, many women from low- and middle-income countries, who undergo a mastectomy, do not receive physiotherapy [16, 17]. This could be due to various reasons, including the fact that women are not aware of the existence and relevance of physical therapy after surgery [17], or because availability and access to rehabilitation services is constrained [18, 19].

In Mexico, health care services offered for BC patients include those provided by social security institutions, those covered by the people's health insurance (PHI) run by the Ministry of Health and the costly private medical care [20]. One of the free public programs prioritized by the national health system is the “specific action program for BC,” which covers both diagnosis and treatment, but pays little attention to rehabilitation care [21].

As detection and treatment have improved during the last decades, a larger number of women now survive who need adequate physiotherapy after treatment [22, 23]. However, awareness among affected patients still remains low, especially among poor women [13, 24].

So far, there is limited knowledge and understanding of the importance and use of physiotherapy after BC treatment in Mexican women [25]. Thus, this study aims at filling this gap by exploring the needs and expectations concerning rehabilitation after surgery. This information could be of value to better design and implement rehabilitation programs that can translate into a better QoL.

## 2. Methodology

The study presented here was part of a larger evaluation of the BC program in SLP, Mexico [26]. An ethnographic approach was used [27] with a purposive sample [28] of women diagnosed with BC who were either receiving or had received treatment at a public facility, though few family members were also included. Participants were contacted through the group RETO (i.e., total recovery in Spanish, but also means “challenge”), a nongovernmental organization (NGO) that provides social assistance to women with BC at SLP public Central Hospital. Eight focus groups (FGs) [29] comprising four to twelve participants were conducted (**Table 1**). FGs took place at the Faculty of Nursing and Nutrition of SLP Autonomous University between February and March 2014 by one of the coauthors trained and skilled in FG interviews (LMTT) until saturation was reached [30, 31]. Sessions lasted between 29 and 110 min and followed an interview guide that covered various themes dealing with experiences, limitations, strategies, needs and expectations concerning rehabilitation. FGs were audio-taped with the consent of participants. In some cases, family members also participated (this was differentiated in the transcriptions).

ID	Participants (relative) <sup>1</sup>	Duration in min	Age mean (min-max)
FG1	11 (2F)	82	51 (33–69)
FG2	4 (1F)	57	58 (49–76)
FG3	7	110	48 (27–74)
FG4	4 (2F)	51	57 (48–62)
FG5	4 (2M)	46	51 (45–57)
FG6	5 (1F)	36	53 (29–75)
FG7	12	29	44 (34–60)
FG8	5 (1F)	47	41 (36–50)

<sup>1</sup>Number and sex of family member(s) who participated in the group.

**Table 1.** Description of the focus groups.

Prior to the FGs, women filled in a questionnaire to obtain socio-demographic data. The disability of arm shoulder hand (DASH) questionnaire, a self-reported function validated and

reliable instrument was used to determine the women's upper limb motion after surgery [32]. Thereafter, a clinical examination was carried out by one of the authors (VH), a professional physiotherapist, to examine the functional status of the shoulder and arm to identify the presence of limitations that hamper mobility among these women.

Women were examined in a sitting position where the active range of motion (ROM) of the shoulder was measured using a goniometer [33]. The arm volume was determined using the circumference of the arm to compute the volume of a cone [34]. Impaired ROM was defined as an inter-limb difference of more than 10° [35]. Observations made during the clinical examinations were recorded as field notes [36] and used in order to understand the context during the data analysis.

FG data was examined using content analysis, interpreting both manifest and latent content in order to understand both the context and subjectivity in the material [37]. Systematic codification and categorization were made using an inductive approach.

The full process included the following steps: (1) verbatim transcriptions of the FGs, (2) translation from Spanish into English, (3) systematic codification, (4) grouping into categories, (5) second codification of the segments to identify narrative consistency and variability and (6) final discussion among authors to reach consensus about the findings. The software ATLAS.ti 5.2 was used for the analytical process.

Ethical principles were followed concerning self-determination, anonymity and confidentiality. All participants signed an informed consent form using standard practices.

### 3. Findings

Women included in the study were between the ages of 26 and 76 years with a mean age of 50. Their overall socioeconomic status was low. Most were married, were housewives and had one or more children. About half of them went to secondary school and one in four completed college. Most women were affiliated to the PHI (the free public medical service for the lower-income segment of the population), but still reported having made personal payments for the health care received. The average time elapsed from the surgery to the survey date was nearly 3 years, ranging from 1 month to 23 years.

More than half of the women had impaired flexion and abduction and almost one-third of women had impaired lateral rotation of the shoulder. One in four had lymphedema and nearly all reported difficulties in performing tasks in daily life to a more or less severe extent.

The following sections present the findings using five relevant categories that arose from the data analyses: (1) functional limitations in daily life, (2) reasons for limitations and discomfort, (3) strategies to deal with impairments, (4) felt needs for information and (5) expectations of rehabilitation from the health care services.

### 3.1. Functional limitations in daily life

The limitations the women referred to after treatment included problems moving their arm and the lack of strength on the affected side, which hindered them from lifting and carrying heavy objects. This problem occurred in various degrees depending on the time elapsed since the breast surgery, being more severe the shorter the time elapsed. For instance, from 3 to 4 weeks after surgery, the limitation was complete resulting in difficulties even to perform basic personal hygiene actions, which made them rely on others. Yet, many household chores, such as doing the laundry or squeezing the mop, which are commonly performed by hand by these relatively poor women, were still constrained even after 6 months of treatment.

*"For me it was very difficult. At first I couldn't do anything, like for half a year, I couldn't for example squeeze the mop [by hand]. I couldn't, it hurt in this hand and it hurt in the whole arm. It took me half a year until I had the strength to squeeze it, to be able to really squeeze it." (Woman FG 1)*

The impact of the limitation depended upon the specific context of every woman; while some received support from family members, others felt obliged to fulfill their household duties on their own in whatever way possible. For instance, a mother with young children was forced to move her arm to be able to care for her family.

*"For me personally, I have my little girls, I need to move on, to continue doing things, that's why you do it, for the girls really, for the girls and the husband, you have to move on." (Woman FG 6)*

### 3.2. Reasons for limitations and discomfort

The women ascribed their limitations to both direct and indirect causes, which can be grouped into medical, emotional and idiosyncratic. While some described the limitations in medical terms, others referred them more simply as pain or weakness. Emotional reasons included the fear of moving the arm or unawareness of impairment. The role of culture and the perception of impairment in the Mexican context were also referred to by some women.

Sometimes the limitations were explained as a result of the extraction of lymph nodes and/or muscles and nerves being cut off. The bottom line was that these provided a logical explanation for the experienced sensations and difficulties. Women seemed to have obtained this information from their doctors, from members of the RETO group, or by reading educational materials.

*"...because they take out the lymph nodes the circulation is insufficient, unlike it was before; they take out muscles, arteries and veins. For me it was a radical mastectomy, they took all the breast out, so it makes sense what I feel because some muscles and nerves die..." (Woman FG 4)*

The main discomforts mentioned by the women included pain, numbness, weakness, swelling of the arm and the feeling of having a heavy arm. Both women working at home and those with professional careers emphasized the impact that these problems had on their ability to



perform daily tasks. Activities such as lifting heavy objects or working in the computer for various hours resulted in pain and exhaustion leading to feelings of incompetence.

*"I felt incapable, I felt incapable of not being able to, like use a pen, an eraser..." (Woman FG 5)*

Some women reported being reluctant to move their arm out of fear that the wound would open, potentially damaging the neighboring anatomic structures and others were worried about the chance that the movement could increase the pain. Thus, the lack of information regarding the motion possibilities of their upper extremities resulted in fear, making some women overly cautious and over protective of their arms.

*"...I was scared, mostly regarding the exercises. I thought that maybe they [the doctors] told me not to move the arm, as I might hurt myself and the wound could open... I was scared." (Woman FG 5)*

Another reason for the limitations faced was the acceptance of the impairment; a sense of normality concerning the discomfort, which they assumed would not require any therapeutic measure. Some women were not even aware of their inability to lift their arms until they were about to receive radiotherapy, as this was a requirement to get such treatment. Until then, some women had not even tried to improve their arms' mobility.

*"I have gone every week [to the doctor] since February 10, but the doctor didn't tell me that I had to move my arm. I had the first radiation session yesterday, but I couldn't lift the arm; now I have to go next Tuesday to see if I can lift it for the radiation, otherwise I will have to wait week after week." (Woman FG 7)*

The local idiosyncrasy also seemed to play a role for preventing women from recognizing impairments as disabilities at least until they are completely unable to perform conventional tasks. Some discomfort and/or limitations were often seen as natural and justified as part of the normal healing process by both patients and doctors themselves.

*"My arm has been fine; it hasn't hurt at all. I can lift it perfectly, like I don't feel anything. I only feel it when I'm carrying something. But if I forget and carry something heavy, then later I feel it; it's normal." (Woman FG 2)*

Fear of recurrence and feelings of loss of femininity due to the removal of the breast were heavy burdens to women. Consequently, many women expressed the need for psychological assistance and ascribed psychological rehabilitation more value than to physiotherapy.

*"...we need information, but also psychological care; we need it a lot, really, because we women are very strong, but sometimes it knocks you down, really, it does." (Woman FG 2)*

### 3.3. Strategies to deal with impairments

Women used various strategies to decrease their impairment. While few used the available medical services, for the majority, this was not a feasible option due to financial constraints and geographic difficulties accessing rehabilitation services. For those unable to receive

professional medical therapy, the alternative was to perform exercises at home and to adjust their daily tasks to their condition. Women also discussed about the relevance of keeping a good attitude toward recovery and the importance of being motivated to do so.

The use of medical services varied and ranged from the utilization of compression garments, manual lymphatic drainage and physiotherapy to the use of prosthetic devices and medications such as diuretics. Those using a prosthesis saw it more as an aesthetic device rather than as a functional implement; thus, women tended to use just the cloth without weight or nothing at all. Many women got in contact with the providers of these services through RETO or received help directly from this organization.

*"...at RETO they gave me advice and a lot of help; they told me how to do many exercises. They sent me to lymphatic drainage because my arm had started to get swollen and heavy, but this drainage helped me a lot. They [RETO] also teach you how to do the massage."*  
(Woman FG 3)

In order to decrease the sense of impairment, many women made adjustments in their life. For instance, they would modify the way in which they use to perform a task or would just remove such activity from the agenda. Occasionally, women would receive help from their family or from close acquaintances, but this was rather exceptional. As a rule, women were responsible to take care of their children and other family members. Thus, to fulfill their chores they mentioned that they tried to plan their activities according to what could be done considering their limitations.

*"... I have constant pain in my arm. This is because of the physical activities I do when I work at home with all my chores. I have to plan according to what my arm allows. If it goes well one day I sweep and I mop. But I always do the dishes and fix the food. I know that I have to do the daily tasks, but I plan for doing the laundry and to sweep because these are the things that cause most trouble; it's very heavy to mop."* (Woman FG 2)

Being able to manage household chores, work and to a smaller extent to perform recreational activities were often reasons for moving or exercising. Some women emphasized that their children and spouses provided motivation to continue fighting and to overcome their limitations.

*"...I was 40 years old, so I still had a life, I had to fight for my kids, for my husband..."*  
(Woman FG 4)

Some women mentioned that feeling like a disabled person that has to cope with her reality worked as a motivator to become more active. For many, there was no alternative but to help themselves improve, as they have to support their families, which were already living on scarce means. Therefore, recovery became a necessity.

*"...my doctor told me that I was going to have like a disability, well, he didn't say it like that and then I thought 'how will I make a living?'"* (Woman FG 4)



### 3.4. Felt needs for information

Women described functional limitations as a consequence of the lack of adequate information, exercise, or movement. Limited knowledge was often a source of insecurity. However, they also emphasized the value of the help received from RETO and highlighted the importance of the assistance of such NGOs for women during the course of treatment and thereafter.

After surgery many women left the hospital with bandages attaching their affected arm to the torso without knowing what they could or could not do. Some of them were actually told not to move their arm, even after the bandages had been taken off to avoid the opening of the wound, which resulted in fear and insecurity.

*"... I liked to have the arm here [attached to the body]. I didn't move it and until today; I still cannot lift it very high, because I liked to walk with the arm here. The doctor said: 'leave it like that' [laughs]; I was scared to lift it." (Woman FG 1)*

Some women mentioned that few doctors and nurses gave them good and adequate information and advice. Yet, for the most part, it was lacking, contradictory, or failed to sufficiently clarify things for them and to provide full understanding of the issues involved. Consequently, the fear and insecurity persisted.

*"I get scared of getting close to the stove because, who knows what could happen to me? I never got a clear explanation, not at any point after the operation. They never explained to me at any stage what kind of things I could do or not." (Woman FG 4)*

The most frequent support for rehabilitation was the instructions provided by RETO, which contained general information and guidelines for exercise and for the lymphatic drainage. These instructions were generally given in the form of a brochure that was handed out when leaving the hospital after the surgery. In fact, the support of RETO was often the only organization providing some kind of rehabilitation information for women.

*"I went looking for information; I had to know what was going to come after [the surgery]. I took the little brochure and then at RETO they explained everything to you: how to do the exercises, how to start, how many days and all, everything. I got the information about that from them." (Woman FG 5)*

However, the presence of RETO at the hospital somehow also prevented the public health services to offer additional information and support concerning rehabilitation.

*"...apart from the RETO group, I think that the doctors, well, here at the hospital it's like they think, or I don't know, that if the RETO group is helping us to survive then they are taking care of our needs." (Woman FG 1)*

### 3.5. Expectations of rehabilitation from the health care services

Women's views regarding the care that they believe BC patients should be given were also explored along with suggestions on how to do this. The presence of family members in the discussions shed additional light in topics such as the unequal access to care.

While the medical and surgical treatment for BC was covered by the popular health insurance, women mentioned financial and logistic obstacles to access adequate and comprehensive care that included rehabilitation. For instance, one spouse commented on the possible effect of not paying for services could have affected the coverage and quality of care of his wife.

*"...well, I don't know, maybe it's because one doesn't pay, because it's given for free (...) and I guess it's that, because for the most part I don't contribute with anything economically that they leave you like that. You get your surgery and that's enough for you to be satisfied and then the rest is up to God to help you (...) because if one could pay, I guess they would say 'come on, let's go'." (Male relative, FG 5)*

Conversely, posttreatment care, including physical therapy, lymphatic drainage and the provision of assistive devices (e.g., prosthesis) are not covered by the PHI. Thus, since for most women were unable to pay out of their pocket for rehabilitation care, then they just had to rely on charitable assistance such as the one provided by RETO or simply receive no care whatsoever.

*"...I didn't have the possibility [to get rehabilitation]; in fact, they didn't say anything to me about rehabilitating exercises, nothing, even though I wanted that. At that time, that year, my husband was out of work and God knows, you have to eat, so for one, paying rehabilitation, was impossible for one, we had to pay rent (...) it's impossible." (Woman FG 3)*

The financial problems were paired with the logistic access to rehabilitation services. This was particularly relevant for those women living in marginalized or rural areas where means of transportations became the main concern.

*"...the truth is that I didn't, I didn't have rehabilitation of my arm. Yes, the oncologist sent me to rehabilitation, but it was very difficult for me because I lived two hours from Tampico [a major city where the service was available]. I needed to go every day and so this was one of the things that I couldn't do, thank you very much, but I couldn't do it." (Woman FG 2)*

Most women suggested additional public clinics and doctors that can spend more time with each patient. However, since women were not informed about the treatment procedures and the consequences thereof, they did not have a clear picture of what kind of care they could ask for. Some suggested seminars to inform and guide patients and their families about BC treatment and posttreatment care.

*"We have to become people who demand and ask for better care, like 'you are going to take care of me because it's your job and I pay you for it and you have to do it'." (Woman FG 7)*

## 4. Discussion

This study aimed to explore the needs and expectations concerning rehabilitation among Mexican women after BC surgery. Due to insufficient and sometimes misleading information

from the health care services, the actual need for posttreatment care is neither met nor acknowledged. However, the positive attitude found among women toward rehabilitation is an important resource for future interventions. How these women perceive their right to comprehensive health care seems to be affected by the structure of the health care services and the Mexican idiosyncrasy.

The study provides in-depth information about the rehabilitation needs and expectations of BC survivors from a middle-size central Mexican city. Various themes emerged that underlie factors associated with the lack of rehabilitation care for most women such as the absence of free- or low-cost public facilities that provide such services, as previously observed [18].

A relevant issue was the lack of knowledge concerning the various aspects of treatment and posttreatment care. There was a general unawareness of the impairments as such or a belief that the discomforts were part of the normal healing process. Contrary to previous findings showing that the needs and complications reported by patients tend to be greater than those reported by clinicians [38], the women in this study seemed to give less importance to the functional limitations than to what their actual clinical assessment revealed (nearly all women included in this study had significant functional motion restrictions as assessed by a physiotherapist; data not presented). Yet, most of those experiencing limitations after surgery did not even try to seek rehabilitation care in agreement with others studies reporting that just few women are aware of the importance of posttreatment rehabilitation, especially in poor settings [17, 39, 40].

The findings of this study are also added to the evidence that there is a dissatisfaction regarding the information and support given by physicians and health care personnel after BC surgery. Fear, insecurity and confusion are generated by absent or misleading information [16, 39] which makes women have an overtly protective attitude toward the movement of their affected arms. Advice to keep the arm still and to avoid heavy lifting led to the belief that strenuous activity can have a negative effect on movement and volume, when studies suggesting the opposite [41, 42]. The motion restrictions advised by the health care personnel seemed to derive from outdated information concerning the effects of arm movement after surgery [41] which points to the need to update physicians and health professionals on the current physiotherapy guidelines for BC patients.

Most women were not informed about the procedures or the consequences that the treatment entailed. In particular, they were neither told nor they themselves requested for rehabilitation care for the experienced discomfort. In accordance with previous studies [43, 44], many women tried to handle their bothers either by changing the usual way in which they carried out an activity, by modifying their work schedule, or by eliminating tasks considered too difficult to perform. The relatively lack of assistance from spouse, family members, or friends to carry out daily activities also needs to be considered, as it can affect the interaction of this women with their family and social environment [43].

Cancer brings negative consequences associated with both the disease and the medical and surgical treatment [45]. As women experience the cancer process, some of them develop a fatalist attitude with a loss of hope that results in less energy and motivation to continue

fighting the disease [46, 47]. This can in turn prevent women from trying to improve their welfare while alive, which partially explains why they do not prioritize their rehabilitation. However, the disease can also result in a positive proactive attitude [48], as it was observed among many of the women interviewed here whereby they try to keep themselves alive in optimal conditions for their children and husbands. A positive mindset and the will to fight the disease with the hope to survive are also part of the survival strategies used by BC women [49]. Unfortunately, these women still lack the information and support needed to face their physical limitations and many end up prioritizing the needs of others at the expense of their physical rehabilitation.

While taking care of the close family can grow in relevance among BC women [50] becoming a key issue to face the disease, it seems that there can also have a negative effect when it comes to paying attention to their physical rehabilitation.

One must also consider the importance of providing social support to these women during this stage of the disease [51], including that of spouse, grown-up children and other family members, which is crucial to take appropriate decisions with respect to rehabilitation [52].

It is important that the public health services pay attention to the rehabilitation needs of BC women after surgery by designing and implementing follow-up programs that have been proven successful [53] involving family members that provide support [54] and optimizing the resources and offering benefits that translate into a better quality of life.

Since the survival rate for BC is increasing, so it is the importance of posttreatment care. As it is the case in many other low- and middle-income countries, there is no institutional public program available in Mexico that provides free coverage for rehabilitation services to BC women after surgery [55]. At present, the health system mainly focuses on survival, namely, on primary and adjuvant treatment [56, 57] whereby posttreatment care is left to NGOs such as the RETO group that provide information, exercise programs, lymphatic drainage and other activities to support women during the rehabilitation period. Yet, this study and others [16, 17, 39, 40] illustrate the need of rehabilitation and psychological therapy in addition to surgical treatment and radiotherapy for BC women.

During the discussions, economic and logistic issues were brought up as reasons limiting the access to comprehensive care. Those few women referred for rehabilitation found significant barriers to access those services either because of the high cost involved and/or due to distance and transportation difficulties. Differential accessibility to health services has been acknowledged in Mexico by health authorities who have even called for strong patients' advocacy groups to improve cancer care [58]. Unfortunately, the notion that survival is the main and almost only goal of treatment seems to prevail among both, patients and health personnel and so far little attention is being paid to the provision of better care after BC surgery [57].

The structure and recent evolution of the Mexican health system has had an impact on how the right to health care is looked upon by the population. The PHI, implemented in 2003 with the aim of providing comprehensive health care to those uninsured, entitled nearly 50 million Mexicans to a regulated and structured health care service. Thus, it is important to consider that many of the women interviewed here would have received an even more limited health

care service prior to the inclusion of BC treatment in the insurance policies of 2007 [8, 55, 56]. However, the inclusion of posttreatment rehabilitation is yet to be part of such insurance to achieve a more humane comprehensive care for these women.

It is worth noting that while the public health services in SLP have insufficient human resources and infrastructure to rehabilitate BC women after surgery, the health authorities fail to even provide women with relevant information concerning the benefits of motility and physical exercise after surgery and during chemo and radiotherapy; instead, women have to rely upon the support and guidance of a NGO for that purpose [18]. Governmental authorities must be aware of this and as a result take a more active role rehabilitating these women. The same logic applies to the psycho-emotional support, which is commonly overlooked, as both BC women and health professionals are mostly focused on survival, but far less on the women's quality of life.

Altogether the findings of this study stress the pain and difficulties of BC women have to go through, which affect their quality of life significantly, including their social interaction with those dearest and nearest to them. However, the positive attitude of most women in their will to improve their functionality after surgery should be seen as an opportunity to design and implement effective rehabilitation programs with high adherence to its guidelines.

5. Conclusion

Many women perceived the need for rehabilitation, but information is still largely lacking. At present, public health services fail to provide rehabilitation services, which are now partially covered by private organizations. Treatment for BC should be accompanied by adequate rehabilitation. Therefore, awareness, availability and access to physiotherapy services need to be put in place.

Abbreviation list

BC	Breast cancer
DASH	Disability of arm shoulder hand
FG	Focus groups
NGO	Nongovernmental organization
PHI	People's health insurance
RETO	Recuperación total (total recovery)
ROM	Range of motion
SLP	San Luis Potosí



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## References

- [1] Torre L, Bray F, Siegel R, Ferlay J, Lortet-Tieulent J, Jemal A. Global cancer statistics, 2012. *CA: A Cancer Journal for clinicians* 2015, 65(2):87–108. Available from: <http://onlinelibrary.wiley.com/doi/10.3322/caac.21262/epdf>
- [2] Soto-Perez-de-Celis E, Chavarri-Guerra Y. National and regional breast cancer incidence and mortality trends in Mexico 2001–2011: Analysis of a population-based database. *Cancer Epidemiol*, 2016. 41: 24–33. DOI: <http://dx.doi.org/10.1016/j.canep.2016.01.007>
- [3] Ministry of Health. Statistical information. Statistics on Breast Cancer and Uterine Cervical Cancer [internet]. Available from: <http://www.gob.mx/salud/acciones-y-programas/informacion-estadistica>
- [4] Caplan L. Delay in breast cancer: Implications for stage at diagnosis and survival. *Front PublicHealth*, 2014. 2: 87.
- [5] National Institute of Statistics and Geography (INEGI). Statistics on the international day against breast cancer, 2013. Available from: [http://www.inegi.org.mx/saladeprensa/aproposito/2016/mama2016\\_0.pdf](http://www.inegi.org.mx/saladeprensa/aproposito/2016/mama2016_0.pdf)
- [6] Cruz-Castillo AB, Hernández-Valero MA, Hovick S, Campuzano-González ME, Karam-Calderón MA, Bustamante-Monte P. A study on the knowledge, perception and use of breast cancer screening methods and quality of care among women from central Mexico. *J Cancer Educ*, 2015. 30(3): 453–459.
- [7] Lee CI, Bogart A, Germino J, et al. Availability of advanced breast imaging at screening facilities serving vulnerable populations. *J Med Screen*, 2016. 23: 24–30.
- [8] Chavarri-Guerra, Y, Villarreal-Garza C, Liedke P, et al. Breast cancer in Mexico: A growing challenge to health and the health system. *Lancet Oncol*, 2012. 13(8): 335–343.
- [9] Inger-Lise N, Alv AD, Løkkevik E, Mengshoel AM, fossá SD. Arm and shoulder morbidity in breast cancer patients after breast-conserving therapy versus mastectomy, *Acta Oncologica*, 2008. 47(5): 835–842. Available from: <http://dx.doi.org/10.1080/02841860801961257>



- [10] Campbell KL, Pusic KL, Zucker D, et al. A prospective model of care for breast cancer rehabilitation: Function. *Cancer*, 2012. 118: 2300–2311. Available from: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.27464/pdf>
- [11] Lee TS, Kilbreath S, Refshauge K, et al. Prognosis of the upper limb following surgery and radiation for breast cancer. *Breast Cancer Res Treat*, 2008. 110: 19–37.
- [12] Rietman JS, Dijkstra PU, Hoekstra HJ, et al. Late morbidity after treatment of breast cancer in relation to daily activities and quality of life: a systematic review. *Eur J Surg Oncol*, 2003. 29(3): 229–238.
- [13] Ewertz M, & Jensen AB. Late effects of breast cancer treatment and potentials for rehabilitation. *Acta Oncol*, 2011. 50(2): 187–193.
- [14] Kurita GP, & Sjogren P. Pain management in cancer survivorship. *Acta Oncol*, 2015. 54(5): 629–634.
- [15] Van Dijck S, Nelissen P, Verbelen H. et al. The effects of physical self-management on quality of life in breast cancer patients: A systematic review. *The Breast*, 2016. 28: 20–28.
- [16] Binkley JM, Harris SR, Levangie P, et al. Patient perspectives on breast cancer treatment side effects and the prospective surveillance model for physical rehabilitation for women with breast cancer. *Cancer*, 2012. 118(Suppl 8): 2207–2216. Available from: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.27469/pdf>
- [17] Ganz PA, Yip Ch, Gralow J, et al. Supportive care after curative treatment for breast cancer (survivorship care): Resource allocations in low- and middle-income countries. A Breast Health Global Initiative 2013 consensus statement. *The Breast*, 2013. 22: 606–615.
- [18] Tejada-Tayabas, L.M., Amell, L., Monárrez-Espino, J. Medical therapeutic itineraries of women with breast cancer diagnosis affiliated to the people's health insurance in San Luis Potosí, central Mexico. *Cad Saúde Pública*, 2015. 31(1): 60–70. Available from: <http://www.scielo.br/pdf/csp/v31n1/0102-311X-csp-31-01-00060.pdf>
- [19] Borman P, Yaman A, Yasrebi S, et al. The importance of awareness and education in patients with breast cancer-related lymphedem. *J Canc Educ*, 2016. Apr 6 [Epub ahead of print]. Available from: <http://link.springer.com/article/10.1007/s13187-016-1026-1/fulltext.html>
- [20] Pauwels, EE. Charlier C, De Bourdeaudhuij I, Lechner L, Van Hoof E. Care needs after primary breast cancer treatment. Survivors' associated sociodemographic and medical characteristics. *Psychooncology*, 2013, 22(1): 125–132.
- [21] Gómez-Dantes, O., Sesma, S., Becerril, V.M., Knaul, F.M., Arreola, H., Frenk, J. Sistema de salud de México. *Salud Publica Mex*, 2011. 53(Suppl 2): 220–232. Available from: <http://www.scielosp.org/pdf/spm/v53s2/17.pdf>
- [22] Ministry of Health. Specific Action Program for the Prevention and Control of Breast Cancer 2013–2018. 1<sup>st</sup> ed. 2014. Mexico City. National Health System. Available from:

[http://cnegsr.salud.gob.mx/contenidos/descargas/cama/PrevencionyControldelCancerdelaMujer\\_2013\\_2018.pdf](http://cnegsr.salud.gob.mx/contenidos/descargas/cama/PrevencionyControldelCancerdelaMujer_2013_2018.pdf)

- [23] Anaya-Ruiz M, Vallejo-Ruiz V, Flores-Mendoza L, Perez-Santos M. Female breast cancer incidence and mortality in Mexico, 2000–2010. *Asian Pac J Cancer Prev*, 2014. 15(3): 1477–1479. Available from: [http://ocean.kisti.re.kr/downfile/volume/apocp/POCPA9/2014/v15n3/POCPA9\\_2014\\_v15n3\\_1477.pdf](http://ocean.kisti.re.kr/downfile/volume/apocp/POCPA9/2014/v15n3/POCPA9_2014_v15n3_1477.pdf)
- [24] Schmitz KH, Stout NL, PT andrews A, et al. Prospective evaluation of physical rehabilitation needs in breast cancer survivors. *Cancer*, 2012. 118(Suppl 58): 2187–2190. Available from: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.27471/pdf>
- [25] Systematization of the Navigation's Experience (support) of Breast Cancer Patients. 2012, Heredia, National University of Costa Rica. Available from: <http://www.kerwa.ucr.ac.cr/handle/10669/1408>
- [26] Tejada-Tayabas LM, Castillo T, Monarrez-Espino J. Qualitative evaluation, a interpretive and critical approach to improving programs and health services. *Int J Qualitative Stud Health Well-Being*, 2014, 9: 24417. <http://dx.doi.org/10.3402/qhw.v9.24417>
- [27] Cook KE. Using critical ethnography to explore issues in health promotion. *Qual Health Res*, 2005. 15: 129–138.
- [28] Suri H. Purposeful sampling in qualitative research synthesis. *Qual Res J*, 2011. 11(2): 63–75. Available from: <http://www.emeraldinsight.com/doi/pdfplus/10.3316/QRJ1102063>
- [29] Morgan DL, Krueger RA. Planning focus groups. Focus group Kit 2. United States of America: SAGE publications India Pvt. Ltd, 1998.
- [30] Guest G, Bunce A, & Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field methods*, 2006. 18: 59–82.
- [31] Kerr C, Nixon A, & Wild D. Assessing and demonstrating data saturation in qualitative inquiry supporting patient-reported outcomes research. *Expert Rev Pharmacoecon Outcomes Res*, 2010. 10(3): 269–281.
- [32] Gummesson C, Ward MM, Atroshi I. The shortened disabilities of the arm, shoulder and hand questionnaire (QuickDASH): validity and reliability based on responses within the full-length DASH. *BMC Musculoskelet Disord*, 2006. 7: 44. Available from: <http://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/1471-2474-7-44>
- [33] Muir SW, Corea CL, Beaupre L. Evaluating change in clinical status: Reliability and measures of agreement for the assessment of glenohumeral range of motion. *N Am J Sports Phys Ther*, 2010. 5(3): 98–110.
- [34] Brorson H, & Hoijer P. Standardised measurements used to order compression garments can be used to calculate arm volumes to evaluate lymphoedema treatment. *J Plast Surg Hand Surg*, 2012. 46(6): 410–415.

- [35] Thomas-Maclean RL, Thomas H, Winkle K, et al. Arm morbidity and disability after breast cancer: New directions for care. *Oncol Nurs Forum*, 2008. 35(1): 65–71.
- [36] Emerson, R.M., Fretz, R.I. & Shaw, L.L. Writing ethnographic fieldnotes. Chicago: University of Chicago Press, 1995.
- [37] Graneheim UH, & Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*, 2004. 24(2): 105–112.
- [38] Cheville AL, Beck LA, Petersen TL, Marks RS. The detection and treatment of cancer-related functional problems in an outpatient setting. *Support Care Cancer*, 2009. 17(1): 61–67.
- [39] Ridner S, Rhoten B, Radina E, et al. Breast cancer survivors' perspectives of critical lymphedema self-care support needs. *Supportive Care in Cancer*, 2016, 24(6): 2743–2750. Available from: <http://link.springer.com/article/10.1007/s00520-016-3089-2>
- [40] Keast DH, Despatis M, Allen JO, Brassard A. Chronic edema/lymphoedema: Under-recognised and under-treated. *Int Wound*, 2015. 12(3): 328–333.
- [41] Lee TS, Kilbreath S, Sullivan G. et al. Factors that affect intention to avoid strenuous arm activity after breast cancer surgery. *Oncology nursing forum*, 2009. 36(4): 2454–2462.
- [42] McNeely ML, Binkley M, Pusic AL, et al. A prospective model of care for breast cancer rehabilitation: Postoperative and postreconstructive issues. *Cancer*, 2012. 118: 2226–2236. Available from: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.27468/pdf>
- [43] Thomas–MacLean R, et al. “This is a kind of betrayal”: A qualitative study of disability after breast cancer. *Curr Oncol*, 2009. 16(3): 26–32.
- [44] Tiedtke, C. Dierckx B, Rijk A et al. Breast cancer treatment and work disability: Patient perspectives. *Breast*, 2011. 20(6): 534–538.
- [45] Khan F, Amatya B, Pallant JF, Rajapaksa I. Factors associated with long-term functional outcomes and psychological sequelae in women after breast cancer. *The Breast*, 2012. 21(3): 314–320.
- [46] Curtis R, Groarke A, McSharry J, Kerin M. Experience of breast cancer: burden, benefit, or both? *Cancer Nurs*, 2014. 37(3): E21–E30.
- [47] Nakatani Y, Iwamitsu Y, Kuranami M, Okazaki S, Yamamoto K, Watanabe M, Miyaoka H. Predictors of psychological distress in breast cancer patients after surgery. *Kitasato Med J*, 2013. 43: 49–58.
- [48] Scheffold K, Mehnert A, Muller V, Koch U, Harter M, Vehling S. Sources of meaning in cancer patients—influences on global meaning, anxiety and depression in a longitudinal study. *Eur J Cancer Care*, 2014. 23(4): 472–480.

- [49] Rotegard AK, Fagermoen MS, Ruland CM. Cancer patients' experiences of their personal strengths through illness and recovery. *Cancer Nurs*, 2012, 35(1): E8–E17.
- [50] Salander P, Lilliehorn S, Hamberg K, Kero A. The impact of breast cancer on living an everyday life 4.5-5 years post-diagnosis — A qualitative prospective study of 39 women. *Acta Oncol*, 2011. 50(3): 399–407.
- [51] Drageset S, Lindstrom TC, Giske T, Underlid K. "The support I need": Women's experiences of social support after having received breast Cancer diagnosis and awaiting surgery. *Cancer Nurs*, 2012. 35(6): E39–E47.
- [52] Jensen CG, Elsass P, Neustrup L, et al. What to listen for in the consultation. Breast cancer patients' own focus on talking about acceptance-based psychological coping predicts decreased psychological distress and depression. *Patient Educ Couns*, 2014. 97(2): 165–172.
- [53] Stanley S, Arriola KJ, Smith S, Hurlbert M, Ricci C, Escoffery C. Reducing barriers to breast cancer care through a patient navigation programs. *J Public Health Manag Pract*, 2013. 19(5): 461–467.
- [54] Marshall CA, Badger TA, Curran MA, Koerner SS, Larkey LK, Weihs KL, et al. Un abrazo para la familia: Providing low-income Hispanics with education and skills in coping with breast cancer and caregiving. *Psychooncology*, 2013. 22(2): 470–474.
- [55] Kaul FM. et al. The quest for universal health coverage: achieving social protection for all in Mexico. *The Lancet*, 2012. 380(9849): 1259–1279
- [56] Gonzalez-Robledo MC, Wong R, Arreola H, Knaul F. Costs of breast cancer care in Mexico: analysis of two insurance coverage scenarios. *Ecancermedicalscience*, 2015. 9: 587.
- [57] Yip CH, Cazap E, Anderson B, et al. Breast cancer management in middle-resource countries (MRCs): Consensus statement from the breast health global initiative. *The Breast*, 2011. 20(2): 12–19.
- [58] Chertorivski S. Planning cancer control — A Mexican perspective. *The lancet oncol*, 2013. 14(5): 386–387.

