

## Crisis, Functionality and Family Typology in Patients with Breast Cancer

### *Crisis, funcionalidad y tipología familiar en pacientes con cáncer de mama*

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#### Summary

**Objective:** to describe the crisis, functionality and family typology in patients with breast cancer.

**Methods:** Analytical cross-sectional study, conducted between August and December 2021. The sample consisted of 250 patients with breast cancer who met the selection criteria. The presence of family crises was determined with the Holmes-Rahe test. Family functionality was assessed with the Adaptability and Family Cohesion Evaluation Scale III. The family typology was determined based on its conformation. We perform descriptive and inferential statistics. Odds ratio, Pearson's  $\chi^2$  and Mann-Whitney U with 95% confidence intervals ( $p < 0.05$ ) were used for bivariate analysis.

**Results:** the crisis frequency in patients with breast cancer was 89% (personal illness, changes in sleeping habits, diet and family conditions), dysfunctional families were present in 58% and the most frequent family typology was nuclear (63%). **Conclusion:** a high percentage of patients with breast cancer have family crises, which were generated during the disease process.

**Keywords:** Breast Cancer; Family; Crisis; Family Conflict

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## Resumen

**Objetivo:** describir la crisis, funcionalidad y tipología familiar en pacientes con cáncer de mama. **Métodos:** estudio transversal analítico, se realizó entre agosto y diciembre de 2021. La muestra fue de 250 pacientes con cáncer de mama que cumplieron los criterios de selección. La presencia de crisis familiares se determinó con el test de Holmes-Rahe. La funcionalidad familiar se valoró con la Escala de Evaluación de Adaptabilidad y Cohesión Familiar III. La tipología familiar se determinó con base en su conformación. Realizamos estadística descriptiva e inferencial. Para el análisis bivariado se utilizó razón de momios,  $\chi^2$  de Pearson y U de Mann-Whitney con intervalos de confianza de 95% ( $p < 0.05$ ). **Resultados:** la frecuencia de crisis en pacientes con cáncer de mama fue de 89% (enfermedad personal, cambios en los hábitos de sueño, alimentación y condiciones familiares), las familias disfuncionales se presentaron en 58% y la tipología familiar más frecuente fue nuclear (63%). **Conclusión:** un alto porcentaje de pacientes con cáncer de mama tienen crisis familiares, las cuales se generaron durante el proceso de la enfermedad.

**Palabras clave:** cáncer de mama, familia, crisis, conflicto familiar

## Introduction

The confrontation of cancer in family life causes repetitive episodes of pain, frustration, adjustment and readjustment. This situation generates uncertainties in the family nucleus and the need to develop skills to solve them. In addition, the family is vulnerable to crisis processes, loss of control and unexpected changes.<sup>1</sup> The disease can even lead to the risk of

a family disintegration in which the processes of recovery, growth and adaptation of each of the members will be involved. Throughout the process there are not only functional changes, but also structural ones that can have profound effects on the life of the family.<sup>2</sup>

The family facing a cancer diagnosis exhibits fear behaviors associated with the prognosis of the disease, which is sometimes fatal. Thus, family members, in most cases, present ineffective reactions that affect family balance and dynamics.<sup>3</sup> Suffering from breast cancer (BC) involves a series of changes and stressful situations in different areas of a person's life, due to the necessary adaptations of the individual and family lifestyle, mainly influenced by the fear of death and the medical treatments.<sup>4</sup>

Family crises in patients with BC develop in three phases: the first is disorganization, due to the impact produced by the diagnosis and prognosis of the disease. The second is recovery-adaptation, the family begins its adaptation in specific aspects and becomes a broader element of support. The third is reorganization, in which the new balance is initiated based on the disease situation and its consequences. This reorganization will be more complex in the case of end-stage diseases. The balance will be found in respecting the needs of the patient and of each member of the family.<sup>5</sup>

Not only the affected person perceives the impact, but also the couple and the children who are exposed to a substantial change and experience heterogeneous emotions.<sup>6</sup> During the course of the disease, the family will need to use tools that it acquired during its life cycle or must develop them. In this way, the stage of the life cycle, the family structure and functionality play a determining role

in preserving the family in situations of stress and crisis.<sup>7</sup>

Faced with a disease such as cancer, associated with suffering and death, the patient finds herself in a situation of maximum vulnerability, in which the support of her family constitutes a source of strength for adaptation to her new health situation.<sup>8</sup> The family is the main source of social support,<sup>9</sup> for this reason, the evaluation and strengthening within the family nucleus allows to deal more effectively with their illness.<sup>7</sup> The main objective of our research was to describe the crises, functionality and family typology in patients with breast cancer.

## Methods

Cross-sectional analytical study carried out in the city of Los Mochis, Mexico, between August and December 2021. The research was carried out in the Family Medicine Unit number 37 of the Mexican Social Security Institute (IMSS); primary care unit and main health care center in northern Sinaloa. Patients between 20 and 60 years old, with a confirmed diagnosis of BC in the six months prior to the study and who agreed to participate through informed consent were included. The patients were recruited in the family medicine and gynecology-oncology department. The collection of variables was done with a standardized data form; the variables to be studied were the following: age, which was collected directly from the patients and their medical care card; occupation, which was classified as employee or housewife; marital status, grouped into patients with and without a partner; the family typology was classified according to its conformation according to the Mexican Council for Certification in Family Medicine.

To measure family crises, the Holmes-Rahe scale was used, which is made up of a list of 43 events called Vital Change Units (VCU), to which a different rating is assigned depending on the degree of stress. To answer this questionnaire, the subject selects those VCU that have occurred in the last six months, after answering the scale, a sum of the values is made. The results are interpreted as follows: 0 to 149, no major problems; 150 to 199, mild crisis; 200 to 299, moderate crisis; and 300 or more, severe crisis.<sup>10</sup>

Family functionality was assessed using the Adaptability and Family Cohesion Assessment Scale III (FACES III), this instrument evaluates the adaptability, cohesion and communication in each member of the family over ten years of age through a Likert-type questionnaire of 20 items that are rated from one to five; one means “never”, and five corresponds to “always”. Once the questionnaire is completed, the odd items are added to obtain the measurement of cohesion and the pairs, for adaptability. The result of this instrument classifies families into 16 types, which result from the interaction between adaptability and cohesion in a 4x4 table. The families located in the central region are considered functional, the rest of the positions are dysfunctional, with greater affectation in the extremes.<sup>11</sup>

For the statistical analysis, we used frequencies and percentages in the qualitative variables; for quantitative variables we use median and interquartile range (IQR). The population was grouped according to the presence of crises, therefore, we calculated the risk through the odds ratio and used Pearson’s  $\chi^2$  to determine the differences between the dichotomous variables associated with

the presence of family crises. For the same purpose, in the quantitative variables we use the Mann-Whitney U. The results were evaluated in a confidence interval of 95%, a  $p < 0.05$  was considered as significant. For data analysis, the program SPSS v. 25 was used. The study was approved by the Research Ethics Committee (25068) and by the Local Health Research Committee (2506); with registration number R-2021-2506-049. The research was carried out under bioethical principles, the General Health Law on Health Research and the Declaration of Helsinki. All participants signed the informed consent.

## Results

250 interviews were applied to patients with BC. The baseline characteristics of the population are specified in Table 1.

The participants were 48 years old (IQR 13) as median age. In family crises, we found that almost half of our population faced a moderate crisis (48%) and 28 patients did not suffer crises. According to the Holmes-Rahe scale, the most important critical events were personal illness, changes in sleeping habits, changes in eating habits, and changes in living conditions. Table 2 shows the ten most frequent critical events in our population.

**Table 1. Baseline characteristics of the participants**

Characteristic (n=250)	n (%)	CI 95%
Age - years	48 (13) <sup>a</sup>	--
Occupation		
Employee	134 (54)	47-60
Housewife	116 (46)	39-52
Family Tipology <sup>b</sup>		
Nuclear	157 (63)	57-68
Seminuclear	92 (36)	30-41
Compound	1 (1)	-3
Family functionality <sup>c</sup>		
Functional	104 (42)	35-48
Dysfunctional	146 (58)	51-64
Family crises <sup>d</sup>		
No crises	28 (11)	jul-14
Mild crises	50 (20)	15-24
Moderate crises	120 (48)	41-54
Severe crises	52 (21)	15-26

a= median (interquartile range), b= tipology according conformation, c= FACES III, d= Holmes-Rahe test, n= frequency, %= percentage, CI 95%= confidence interval

**Table 2. Most frequent critical events**

Critical event (n=250)	n (%)	CI 95%
Personal injury or illness	250 (100)	---
Changes in sleeping habits	204 (81)	76-85
Changes in diet	129 (52)	45-58
Changes in living conditions	109 (44)	37-50
Bank credit	105 (42)	35-48
Changes in the health of a family member	100 (40)	33-46
Child who leaves home	87 (35)	29-40
Sexual problems	64 (26)	20-31
Changes in family gatherings	60 (24)	18-29
Increased problems with the couple	54 (22)	16-27

n= frequency, %= percentage, CI 95%= confidence interval

**Table 3. Interaction between adaptability and cohesion**

		Cohesion			
		Not related	Semi-related	Related	Agglutinated
Adaptability	Chaotic	17%	5%	1%	---
	Flexible	20%	25%	1%	---
	Structured	12%	15%	1%	---
	Rigid	1%	1%	1%	---

Green= balanced families (functional), yellow= middle families (moderate dysfunction), red= extreme families (dysfunction), %= percentage

**Table 4. Characteristics associated with family crises**

Family crises				
Characteristic	Yes (n=222)	No (n=28)	OR (CI 95%)	p
Age <sup>a</sup>	49 (11)	43 (11)	--	0.002 <sup>b</sup>
Occupation <sup>c</sup>				
Housewife	110 (49)	6 (21)	3.6 (1.4-9.2)	0.005 <sup>d</sup>
Employee	112 (51)	22 (79)		
Family functionality <sup>c</sup>				
Dysfunctional family	136 (61)	10 (36)	2.8 (1.2-6.4)	0.01 <sup>d</sup>
Functional family	86 (39)	18 (64)		
Family tipology <sup>c</sup>				
No nuclear	92 (42)	1 (3)	20.1 (2.6-151)	<0.001 <sup>d</sup>
Nuclear	130 (58)	27 (97)		

OR= odds ratio, a= median (interquartile range), b= Mann-Whitney U, c= frequency (percentage), d= Pearson  $\chi^2$ , CI 95%= confidence interval

In family functionality, the most frequent type of family was flexible-semirelated (25%). Balanced families represented 42% of the population. Table 3 shows the crossing of the components of the FACES III.

In the bivariate analysis we observed that occupation (housewife), family functionality (dysfunction), family typology (non-nuclear) and age are risk factors for developing family crises. The complete analysis of the variables is shown in Table 4.

### Discussion

Upon receiving the diagnosis of breast cancer, the patient and her environment are altered and adverse family consequences arise. In a meta-analysis of studies, it was found that the main alterations in these patients were: anxiety, alterations in body image, depression, fatigue and sexual dysfunction.<sup>12</sup> The most important finding of our research was the high frequency of family crises, especially those of a moderate degree (48%). Almost two thirds of patients had a nuclear family, which provides an adequate structure to face the health-disease process,<sup>13</sup> however, there was dysfunction in more than half of the families, which has a significant impact; the combination of these family factors and the disease itself could explain the high frequency of crises found in these patients (89%).

We evaluate the family crisis through the Holmes-Rahe Social Readjustment Scale,<sup>10</sup> finding a high percentage of crisis events (89%). There are few studies in which these elements have been prospectively evaluated in this population group; in a retrospective study, carried out in Finland, 87 patients with BC and controls matched by age, sex, language and number of children were evaluated,

significant differences were found, with higher scores in patients with BC compared to their controls and five times more risk of developing BC in those who presented important emotional losses.<sup>14</sup>

The highest prevalence of BC is above 40 years,<sup>15</sup> this result agrees with our study, in which the median age was 48 years. It is a young and economically active population, which crosses the barrier of the individual – family sphere and impacts in the society.<sup>7</sup> This last aspect could be observed in our population, since more than half were active workers, this data is relevant and we confirm that in this population there is a change in the development of the family, going from the traditional model (mother works) to modern (both parents work).

In the diagnosis of cancer, the family need to stay strong and offer emotional support, therefore they become an integral part of the treatment.<sup>16,17</sup> The couple has taken a leading role in cancer treatment, Wang et al.<sup>18</sup> conclude that marital status can influence the prognosis of people with cancer, increasing the probability of survival because patients with a partner have greater access to social and psychological support, reducing their anguish, anxiety and stress.

In our study, we observed the presence of a partner in almost two thirds of the population, which could translate into greater support and safety for the patient; the absence of a partner was the most important risk factor associated with crises, since a non-nuclear family, in the context of BC, has twenty times more risk of developing them. Couples experience alterations in the relationship when one of the members suffers from cancer. Sometimes facing that problem together can strengthen the relationship.<sup>19</sup> In most cases, the relationship

deteriorates and cause separation, affecting the overall structure and dynamics of the family.<sup>2</sup> Our results indicate that couple problems are already present from the early stages of the disease, especially sexual problems (26%), a decrease in family meetings (24%) and an increase in disagreements (22%). In this sense, also assessing the partner of our participants would have provided valuable information on the marital subsystem.

In family dysfunction, our results are different from those found by Acosta-Zapata et al.,<sup>7</sup> who report that only 13% of patients with BC had alterations in family functionality, a very low frequency compared to ours (58%). On the other hand, we found concordance in the occupation of the patients, since half of their population was a housewife, a frequency very close to our results (46%). The above results can be explained by the differences in the populations and in the different sample sizes.

Family functioning acts as a protective factor against any disease.<sup>20,21</sup> Flexibility, adaptation to change, cohesion and communication are associated with a better quality of life and better tools to overcome the crisis.<sup>9</sup> The above statements are consistent with the findings of our study, since family dysfunction (OR 2.8) and family typology (OR 20.1) were factors associated with the development of crises. There are critical events that affects the entire family structure and functioning, such as changes in living conditions (44%), bank credits (42%) and children who leave home (35%).

The role of women and their daily activities change profoundly after the diagnosis of cancer,<sup>22</sup> our results are consistent with these observations, the

role of the patients had to be modified, since more than half were active workers at the time of diagnosis, which required adjustments in their work activities for treatment, decreasing their economic income and work performance.

Being a housewife represented 3.6 times more probability of suffering from family crises. The possible explanation involves changes in the roles of the patients who are dedicated to the home, especially in those who are the main support of the family for their daily activities related to housework (cooking, washing, cleaning).

Another important finding of the research was the high frequency of family critical events. Our results agree with Pérez-Cárdenas et al.,<sup>23</sup> who report that the most frequent critical event in families of cancer patients was a serious recent illness, followed by economic problems, in addition, they refer that the most frequent family crises in cancer was mild-moderate, which also coincides with the high frequency of mild-moderate crises (68%) detected in this study.

Among the strengths of the study, this is the first study of its kind in Sinaloa and northwestern Mexico, which represents an important starting point in the care of BC, this allows us to assess this problem and promote a care protocol that includes referral to family medicine, social work and psychology, to offer support alternatives to affected families.

In the weaknesses we find the design of the study, being cross-sectional it is not possible to establish causal relationships between the variables. Exploring the effect of other variables (assessment of other family members, type of BC, type of treatment, socioeconomic level, and clinical variables) would have enriched the study. The objective of the study



was focused on a general vision of the family and the presence of crisis in this vulnerable population, which allows to have a baseline situation on the problem, to look for alternative solutions.

### Conclusion

The frequency of crises and family dysfunction in BC patient is high. Starting to detect these crises and establishing action protocols in response to them will have an impact on the development and outcome of the disease. BC is a pathology that influence at a physical, psychological, social and economic level, since it represents an event linked to the risk of a crisis that affects women, their family and social environment.

### Authors contribution

DHR-L, CV-I, PS-A: conceptualization, development and writing; PS-A, FS-O: survey application and data analysis; DHR-L, JMM-S, JF-L: conceptualization, analysis and discussion of results and writing. All authors approve the publication of this paper.

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### Conflicts of interest

The authors declare no conflicts of interest.

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