

**Support network
educational program on
breast cancer knowledge**

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Support network educational program on breast cancer knowledge

Programa educativo de red de apoyo sobre el conocimiento de cáncer de mama

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Support network educational program on breast cancer knowledge

The Book will offer selected contributions from researchers who contribute to the scientific dissemination activity of the Spanish Hospital of Veracruz for its research area in the role of the University to the challenges of the Knowledge Society. In addition to having a total evaluation, in the hands of the directors of the Spanish Hospital of Veracruz, collaborating with quality and timeliness in its chapters, each individual contribution was refereed to international standards (RESEARCH GATE, MENDELEY, GOOGLE SCHOLAR and REDIB), the Book thus proposes to the academic community, recent reports on new developments in the most interesting and promising areas of research in the role of the University to the challenges of the Knowledge Society.

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Abstract

Breast cancer is a health problem worldwide due to its high incidence and devastating effects on women's health. Education allows the development of capabilities and facilitates knowledge; this makes it part of the fundamental strategies that help strengthen health promotion processes that contribute to the formation of self-care habits. Objective: Promote a support network educational program on breast cancer knowledge in women between 18 and 65 years old. Methods: This program was applied to 17 women between 18 and 65 years of age, who were direct caregivers of patients hospitalized in the oncology area in a private hospital in Veracruz, during the period January 2023-March 2023. To obtain from the results, surveys were applied, which were summarized in terms of frequency and percentage; The SPSS statistical test, VERSION 21, was used. Results: At the time of the first application, it was observed that the topic of breast cancer, mammography and self-examination was unknown, knowledge that increased considerably in the subsequent application. compared to the second one that was applied after the intervention in the form of informative talks on risk perception for breast cancer. The safety of having a mammogram increased for the second application. Conclusions: the support network program was an important instrument to achieve a significant increase in the level of knowledge of the caregivers; prevention and improvement of their quality of life were achieved.

Breast cancer, Support network, Educational intervention

1. Introduction

Cancer is a major public health problem in many countries or regions of the world. The incidence, mortality and prevalence of cancer make it possible to quantify the magnitude of this pathology and guide the first level of care in relation to prevention and health services. The high economic and social cost of caring for these patients means that the prevalence, evolution and prognosis differ from one country to another. In Peru, cancer is the leading cause of death. In 2018, according to Globocan, more than 66,000 new cases were diagnosed and more than 33,000 deaths from cancer were recorded. The three most frequent pathologies in women were breast cancer (19%), cervical cancer (11%) and stomach cancer (7%) (Vallejos-Sologuren, 2020).

Over time, this in situ (stage 0) cancer can progress to invade the surrounding breast tissue (invasive breast cancer), and then spread to nearby lymph nodes (regional metastasis) or to other organs in the body (distant metastasis). When a woman dies of breast cancer, it is as a result of widespread metastasis (WHO, 2023).

Breast cancer is a malignant lesion of the mammary epithelium, of as yet unknown aetiology, considered the most common cancer in the United States and Western Europe. It is the most common cancer in women and there is an upward trend in its incidence worldwide. It affects 1000 women each year worldwide and 30 of them will die from it. The incidence has doubled in the last 20 years and continues to increase by 3% per year.

Breast cancer originates in the cells of the lining (epithelium) of the ducts (85%) or lobules (15%) of the glandular tissue of the breast. Initially, the cancerous tumour is confined to the duct or lobule (in situ), where it usually causes no symptoms and has minimal potential for spread (metastasis), (WHO, 2023).

One study reported the importance of educational programmes to increase breast cancer awareness; an educational intervention was conducted to teach participants about breast self-examination to increase breast cancer screening. The programme included topics of interest such as breast anatomy and physiology; signs, symptoms and risk factors; and screening and self-examination. The results after 12 months of intervention show an increase in knowledge about signs and symptoms, breast self-examination and breast cancer screening; therefore the authors conclude that health promotion educational interventions are important to increase awareness of the disease (Akhtari, Juni, Said, Ismail, Latiff & Ataollahi Eshkooor, 2016).

Despite being a detectable disease in the early stage, few women internalise the importance of screening. The discovery of the nodule, the embarrassment of being touched by her husband or herself, becomes the main factor for non-prevention. In any case, disseminating health actions for women and their families, and increasing the population's access to primary health care institutions, represents an important strategy to reverse this reality, considering that more than 80% of breast tumours are diagnosed by the women themselves.

Morbidity and mortality from breast cancer can be reduced if women and their families have the knowledge, motivation and skills necessary to apply early detection measures (Schencke, Espinoza, Muñoz, Messing, 1993; cited in Murillo, 2020). In order to prevent breast cancer, it is essential to have a good knowledge of the factors and conditions of its emergence.

Based precisely on the existence of these determinants of the state of health and the changes they undergo due to constant social and scientific-technical development, the following objective is proposed: to create knowledge in women between 18 and 65 years of age about the correct technique of breast self-examination, as well as the risk factors that lead to the timely detection of breast cancer.

Treatment of localised or metastatic breast cancer is more expensive and less successful the more advanced the disease is. Early diagnosis, especially in the early stages, has a better prognosis, avoids hospital stays, medical treatment and surgery, which, from an economic point of view, require a high monetary cost, often not very effective and highly mutilating, both physically and psychologically for the woman and not only for them as a family, but also for society, as these diseases often appear at an age when the woman is in optimal working conditions.

This book consists of IV chapters Chapter I. Presentation of the problem, in this section from its three different approaches, theoretical, empirical and experiential. The clinical question, as well as the hypothesis. Subsequently, we deal with Chapter II. Design of the intervention, where each element is described, from the type of intervention, people, goals, dosage, sessions, strategies and resources.

We move on to chapter III. Implementation of the intervention in this section we describe step by step the process of implementing the programme, finally, we have chapter IV. Evaluation of the programme, where the results, analysis and interpretation, conclusions and recommendations are presented.

Chapter I. Presentation of the problem

1.1. Approaches or theoretical approach

Some of the most developed countries in the world are also those with the highest cancer prevalence rates, according to currently available data. However, this trend may change in the short term, according to a recent study by the American Cancer Society, which concludes that the disease is falling in rich countries and rising in poor countries. The reason is that developing countries are adopting Western lifestyles and lifestyle patterns, which increases the risk of contracting the disease, experts say.

Detection of cancer at an advanced stage and lack of diagnosis and treatment are common problems. In 2017, only 26% of low-income countries reported that public healthcare had pathology services to serve the general population. More than 90% of high-income countries provide treatment for cancer patients, while in low-income countries this percentage is less than 30% (WHO, 2018).

In North America, the incidence of breast cancer in women was 29.6%, followed by lung cancer (13.2%). With regard to mortality on that side of the continent, lung cancer and breast cancer ranked first and second with 26% and 14.9% respectively. According to data from the Pan American Health Organization, by 2030, it is estimated that there will be more than 596 000 new cases and more than 142 100 deaths in the region, mainly in Latin America and the Caribbean (PAHO, 2014a; PAHO, 2014b).

In Mexico during 2019, 15,286 new cases of breast cancer were registered in the population aged 20 years and over. Of these, 167 correspond to men and 15,119 to women. The incidence rate of malignant breast tumour in the country is 18.55 new cases per 100,000 inhabitants aged 20 and over. This condition is also observed in men. In 2019, 0.42 new cases of breast cancer were detected per 100,000 men aged 20 years and over. On the other hand, 35.24 new cases are registered per 100,000 women of the same age range, which is the highest incidence among women for the period 2010 to 2019 (INEGI, 2021).

Among women, it is observed that, as their age increases, there is a greater presence of malignant breast tumours. In 2019, the incidence rate rises from 1.86 among women aged 20 to 24 years to 104.5 new cases in women aged 60 to 64 years per 100,000 women in the same age range.

The distribution of new cases of malignant breast tumour among women aged 20 and over by state for 2019 shows that Morelos has the highest incidence (151.94 new cases per 100,000 women aged 20 and over), followed by Colima (139.62) and Aguascalientes (66.64); on the other hand, Guerrero has the lowest incidence with 7.69 new cases per 100,000 women aged 20 and over (INEGI, 2021).

During 2021, 90 525 people died from malignant tumours in Mexico (8.1% of all deaths). Of this figure, there were 7 973 deaths from breast cancer, of which 99.4% were women and 0.6% were men. For women aged 20 years and over, the national breast cancer mortality rate is 18 deaths per 100,000 women in this age group.

The highest rate of breast cancer deaths was recorded in women aged 60 years and over, with 48.24 deaths per 100,000 women aged 20 years and over. On the occasion of the commemoration of International Breast Cancer Day, the National Institute of Statistics and Geography (INEGI) presents data on the deaths of people aged 20 and over from this disease. This is based on preliminary figures from the Statistics of Deaths Registered in 2021.

In Mexico, 1 117 167 deaths were registered in 2021. Of those who died, 644 058 were men (58 %) and 472 375 (42 %) were women. A total of 90 525 people (8.1 %) died of malignant tumours; of these, 7 973 died of breast cancer. Of the above figure, 7 925 (99.4 %) were women and 48 (0.6 %) were men. Of the deaths in women due to malignant tumours, 17% were due to breast cancer.

The national breast cancer mortality rate was 18 deaths per 100,000 women aged 20 years and over. The states with the highest rates were: Colima (26.94), Tamaulipas (24.49), Sonora (23.59), Chihuahua (23.07) and Mexico City (22.73). Tlaxcala (10.36), Chiapas (11.65), Guerrero (11.69), Quintana Roo (12.19) and Oaxaca (12.66) reported the lowest rates.

The highest rate of deaths was registered in the group of women aged 60 years and over (48.24). The lowest was in the 20-29 age group (0.74). Of the women aged 20 years and over who died from breast cancer, 42 % were married, 23 % were single and 18 % were widowed. In terms of place of death, most deaths occurred in the home (63%), followed by public health institutions (24%). Those occurring in private health institutions and other places had percentages of 5 and 6 %, respectively. The cause of breast cancer is multifactorial, meaning that there are many factors that can come together and interact to stimulate the disease. In many cases, family history, genetics, environmental factors and lifestyle work together to create the necessary conditions for the development of cancer (INEGI, 2022).

1.1.1. Breast cancer

Breast cancer is defined as "the abnormal and disordered growth of cells of the epithelium of the breast ducts or lobules and has the capacity to spread" (Barragan, Becerra et al., 2009; IMSS, 2010; cited in Santos-Cruz, 2014).

According to WHO (2018), cancer is a broad term used to refer to a set of diseases that can originate in almost any organ or tissue of the body when abnormal cells grow uncontrollably, exceed their usual limits and invade adjacent parts of the body and/or spread to other organs. The latter process is called metastasis, and is a major cause of death from cancer. Other common terms for cancer are neoplasm and malignant tumour. Cancers are identified according to the part of the body in which they first appear, the most common being breast, cervical, colon and rectal, lung, etc. (OMS, s. f.).

Support network

The study of social networks arises from the interest in understanding social interactions and their influence on people's health and well-being, constituting a novel tool for psychosocial intervention. Several research studies have demonstrated the importance of the support provided by social networks, both in everyday life and in crisis situations, due to their potential to help find solutions, open up new possibilities and reduce the vulnerability of the individual to physical and emotional problems (Fonte-Cedeño, 2012). We are all part of a community and need the support of others in different situations throughout life. Reciprocal support strengthens individuals, families, communities and society as a whole.

Social support networks are: "the set of relationships that integrate a person with their social environment, or with people with whom they establish solidarity and communication links to solve specific needs...".

The people we rely on and support make up our social support networks. These networks occur in everyday life, i.e. family, work, school, community, and are permanent ties, and networks can grow or weaken as the people in them change their relationships over time.

Social support networks are: "the set of relationships that integrate a person with their social environment, or with people with whom they establish solidarity and communication links to solve specific needs. Networks can be reduced or extended proportionally to the material, physical or emotional well-being of their members, and to their involvement and participation in the strengthening of societies. They are in constant movement and are made up of people (any number from two upwards) who share interests, citizenship principles and who assume principles of reciprocity, non-violence and voluntary action".

1.1.2. Empirical approach

In a meta-analysis of over 40 reports and 41,477 incident cases of breast cancer, non-drinking women were compared with those who consumed a drink with 12 g of alcohol content. An increased risk of breast cancer was found in 10% of the sample [95% CI = 6% -14%]; this study found an association between breast cancer and the role of adiposity, physical activity and diet on breast cancer risk in Mexican women. According to Colombian statistics, the average age of onset of alcohol and tobacco consumption in our population is around 13 years old. The increase in BMI and the percentage consumption of saturated fats are data that reflect the reality of these risk factors in our population (Castañeda and Hoyos, 2017).

Another study conducted on knowledge and behaviours regarding breast cancer risk factors in a group of women in 2011 found that the knowledge they possess is deficient, which is consistent with other research reports that have evaluated various aspects of breast cancer, finding that most women have insufficient knowledge, and that there is inconsistency between what they say they know and the correct practice of breast self-examination (Pérez, López, Bénéitez, and Sandoval, 2011).

In research carried out in the southern area of the municipality of Guantánamo, it was found that the correct frequency of breast self-examination was used by only 4 (20 %) of those who practised it and 65 % never did it. After the promotional intervention, 100 % of the women said that they performed monthly self-examination.⁸ She also noted that only 10 % of the women she studied used a correct method of inspection and palpation of the breast before the intervention. After implementing the educational programme she was able to get 100 % of the women to examine their breasts correctly (Pulsán et al., 2008).

Saldívar-Garduño and Correa-Romero, conducted a study in women aged 18 to 65 years, where the aim was to examine the relationship between self-regulation behaviour, risk perception and self-examination as a way of finding out the factors that determine self-care behaviours. The results showed that women perceived a medium level of probability of developing breast cancer with a mean of 5.4 (SD =2.6). Using the Student's t-test, it was found that self-regulation oriented to tumour detection, planning and breast health care behaviours were higher in the group with a high risk perception ($p < .05$), i.e. the higher the risk perception, the more self-regulated behaviours there were.

As risk factors for breast cancer, the following factors were listed (Marzo-Castillejo et al., 2018):

- Carriers of the hereditary breast/ovarian hereditary (BRCA) syndrome mutation
- Previous radiotherapy of the breast
- Obesity
- Sedentary lifestyle
- Alcoholism
- First pregnancy > 30 years, nulliparity, not breastfeeding
- HRT > 5 years
- Female sex
- Age > 50 years

1.1.2.1. Mexican Official Standard NOM-008-SSA3-2010, For the comprehensive treatment of overweight and obesity

Overweight and obesity are characterised by the abnormal and excessive accumulation of body fat. Both are accompanied by metabolic alterations that increase the risk of developing comorbidities such as arterial hypertension, type 2 diabetes mellitus, cardiovascular and cerebrovascular diseases, as well as some breast, endometrial, colon and prostate neoplasms, among others.

Currently, obesity is considered a public health problem in Mexico, due to its magnitude and importance; for this reason, the criteria for its management should be oriented towards early detection, prevention, comprehensive treatment and control of the growing number of patients with this disease.

Recent studies show that the incidence and prevalence of overweight and obesity have increased progressively over the last six decades and alarmingly over the last 20 years, reaching figures of 10-20% in childhood, 30-40% in adolescence and 60-70% in adults (ENSANUT, 2016).

Table 1 BMI classification according to WHO

BMI	Category
Underweight	< 18,5
Normal weight	18,5-24,9
Overweight	25,0-29,9
Obesity grade I	30,0-34,9
Obesity grade II	35,0-39,9
Obesity grade III	>40,0

1.1.3. Experiential approach

WHO promotes breast cancer control within comprehensive national cancer control programmes that are integrated with non-communicable diseases and other related problems. Comprehensive cancer control encompasses prevention, early detection, diagnosis and treatment, rehabilitation and palliative care.

Raising public awareness of the problem of breast cancer and control mechanisms, as well as promoting appropriate policies and programmes, are key strategies for population-based breast cancer control. Many low- and middle-income countries currently face a double burden of breast cancer and cervical cancer, which are the leading causes of cancer deaths among women over 30 years of age. These countries need to implement combined strategies that effectively and efficiently address these two public health problems (Cedeño-Castro, 2012).

The Mexican Official Standard NOM-041-SSA2-2011 for the Prevention, Diagnosis, Treatment, Control and Epidemiological Surveillance of Breast Cancer indicates breast cancer screening activities, including three types of specific interventions that target the female population according to their age group and vulnerability and include: 1) Self-examination, 2) Clinical examination and 3) Mastography. NOM-041-SSA2-2011 states that self-examination should be recommended monthly from the age of 20; its objective is to raise women's awareness of breast cancer, increase their knowledge of their own bodies and identify abnormal changes in order to seek appropriate medical attention. Clinical breast examination should be performed by a trained physician or nurse on an annual basis, starting at age 25.

A mastography should be performed every two years in women aged 40 to 69 years, and in women aged 70 years and older as part of a medical follow-up or medical indication. In people with a hereditary history of breast cancer, annual imaging studies (mastography, ultrasound or magnetic resonance imaging) should be carried out according to age and availability of resources, starting between five and ten years before the earliest diagnosis of breast cancer in the family, but not below the age of 25.

1.1.3.1. Cancer awareness

The following section presents information on cancer awareness, as the main focus of the intervention is on adaptation through awareness.

For Graziano and Webb (2015), there are two ways of assessing awareness: the objective way that allows discriminating a stimulus according to shape, sizes, colours, space, among others (without taking into account beliefs) and the subjective way where the "I believe" is allowed and the stimulus may or may not be present; it is important to differentiate both aspects since they are taken into account together or separately for their measurement; for example, a person with neurological damage may show objective but not subjective awareness.

A study was conducted to assess the level of breast cancer awareness in Saudi women; the researcher used an instrument to measure breast cancer awareness based on knowledge of breast cancer, warning signs, risk factors, knowledge of screening programmes and self-screening (Radi, 2020). Along the same lines, in the UK, an instrument was developed and validated to measure awareness and beliefs about cancer via telephone, using items on knowledge of signs, symptoms and risk factors; intention to seek help, barriers and age at which the disease is most likely to develop, among others (Forbes, Simon et al. 2013).

Similarly, in the UK, a study was conducted to assess differences between ethnic groups in awareness of signs and symptoms of cancer and barriers to seeking medical help. Cancer awareness was measured with an instrument validated in that population, questions were also added to which a value was assigned (yes and no); the analysis was performed to observe the relationship between both variables and then divided by ethnic groups; the results show significant differences, especially in the delay in seeking medical help, so researchers suggest conducting studies where race is taken into account as a variable and thus formulate campaigns aimed at the needs of each individual (Niksic, Rachet, et al., 2020).

One study reported the importance of educational programmes to increase breast cancer awareness; an educational intervention was conducted to teach participants about breast self-examination and increase breast cancer screening. The programme included topics of interest such as breast anatomy and physiology; signs, symptoms and risk factors; and screening and self-examination. The results after 12 months of intervention show an increase in knowledge about signs and symptoms, breast self-examination and breast cancer screening; therefore the authors conclude that health promotion educational type interventions are important to increase awareness about the disease (Akhtari, Juni, Said, Ismail, Latiff & Ataollahi Eshkoo, 2016).

1.2. Clinical question

Will a support network programme reinforce knowledge about breast cancer prevalence risks?

Primary prevention acts by changing or modifying risk factors and unhealthy lifestyles in women and secondary prevention enables a favourable prognosis in the treatment of this disease.

1.3. Hypotheses

- Hypothesis h: An educational intervention through the support network increases knowledge about breast cancer prevalence risks.
- Null hypothesis: An educational intervention through the support network decreases risk knowledge of breast cancer prevalence.
- Alternate hypothesis: Women who have contact with patients who have cancer have more knowledge about breast cancer prevalence.

Chapter II. Intervention Design

2.1. Type of intervention

This intervention will be an educational intervention implemented in women aged 18 to 65 years, who may or may not be at risk of breast cancer, but at the same time create an awareness of learning, after educating about the knowledge they should know about the risks of breast cancer. It is a cross-sectional and longitudinal study.

The lines of action in the academic project are training, promotion, prevention, information, education and communication, and within these the main activities are: awareness-raising meetings, planning meetings which will result in the plan of activities and training schedule as appropriate, the implementation of training workshops according to the schedule and monitoring and evaluation meetings aimed at the municipal authorities.

The independent variable was taken as the support network intervention; while the dependent variables are the outcome of the intervention: analysis of breast cancer risk factors; knowledge about breast cancer (risk, signs, symptoms and prevention); risk perception and awareness of the disease. This design was appropriate as the experimental group was given a 4-week intervention (two face-to-face sessions).

2.1.1. Callista Roy's coping theory

Callista Roy's model of adaptation represents the theory derived from the concepts of health and human adaptation to the environment and to illness. These concepts allow nursing care to focus on the reduction of ineffective responses, for which the causes of these responses must be identified in order to achieve the expected results.

Reviewing and analysing the aforementioned concepts allows us to understand the interrelationship between the person, the environment and nursing, these being involved in the stimuli that lead to adaptation. For the aforementioned reasons, the nursing professional must act to promote situations of well-being that achieve the adaptation of individuals in the face of the adaptive responses to the different stimuli that are presented to them.

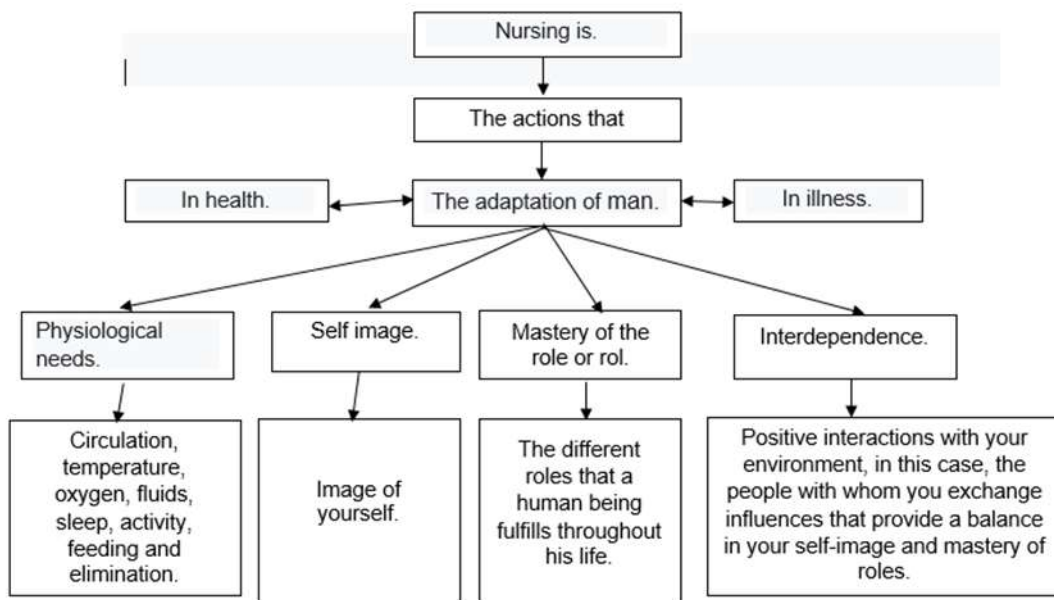
It is important to mention that family members of people diagnosed with breast cancer need to adapt to a different way of life that decreases the risk of developing the disease, including the environmental risk factors already mentioned. Adaptation to the new lifestyle is transformed into behaviours that are influenced and determined by biological, cognitive and emotional processes, an approach proposed by Roy in his Adaptation Model (Roy, 2008), which is why it has been selected to frame the present research.

In this social context, the purpose of this research is to promote adaptive behaviour, mainly represented by the development of awareness of the risk of illness in people who have direct family members who have or have had breast cancer, using nursing guidance.

Description of the Callista Roy Model and the educational intervention strategy on risk perception and knowledge of breast cancer

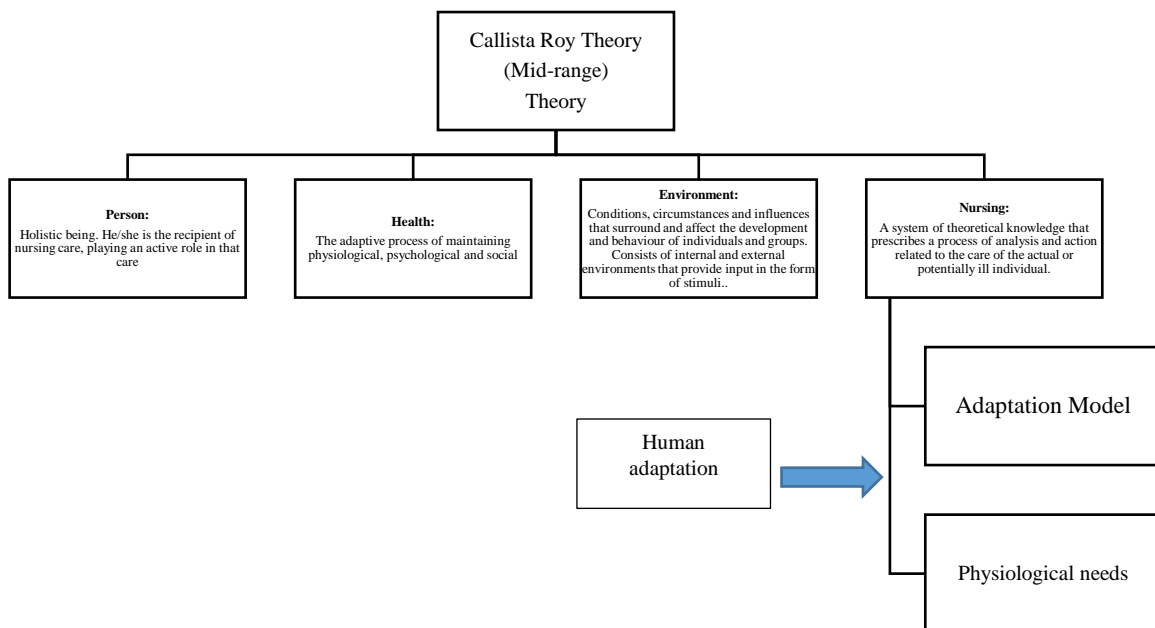
In Callista Roy's model of adaptation, the theory derived from the concepts of health and adaptation of man in the environment and in turn with the disease is represented. These concepts allow nursing care to focus on the reduction of ineffective responses, for which the causes of these must be identified in order to achieve the expected results.

Figure 1 Callista Roy's Model of Adaptation



Reviewing and analysing the aforementioned concepts allows us to understand the interrelationship between the person, the environment and nursing, these being involved in the stimuli and leading to adaptation. Therefore, the nursing professional must act to promote situations of well-being that achieve the adaptation of individuals in the face of the adaptive responses to the different stimuli presented.

Figure 2 Conceptual map



Source: Own Elaboration

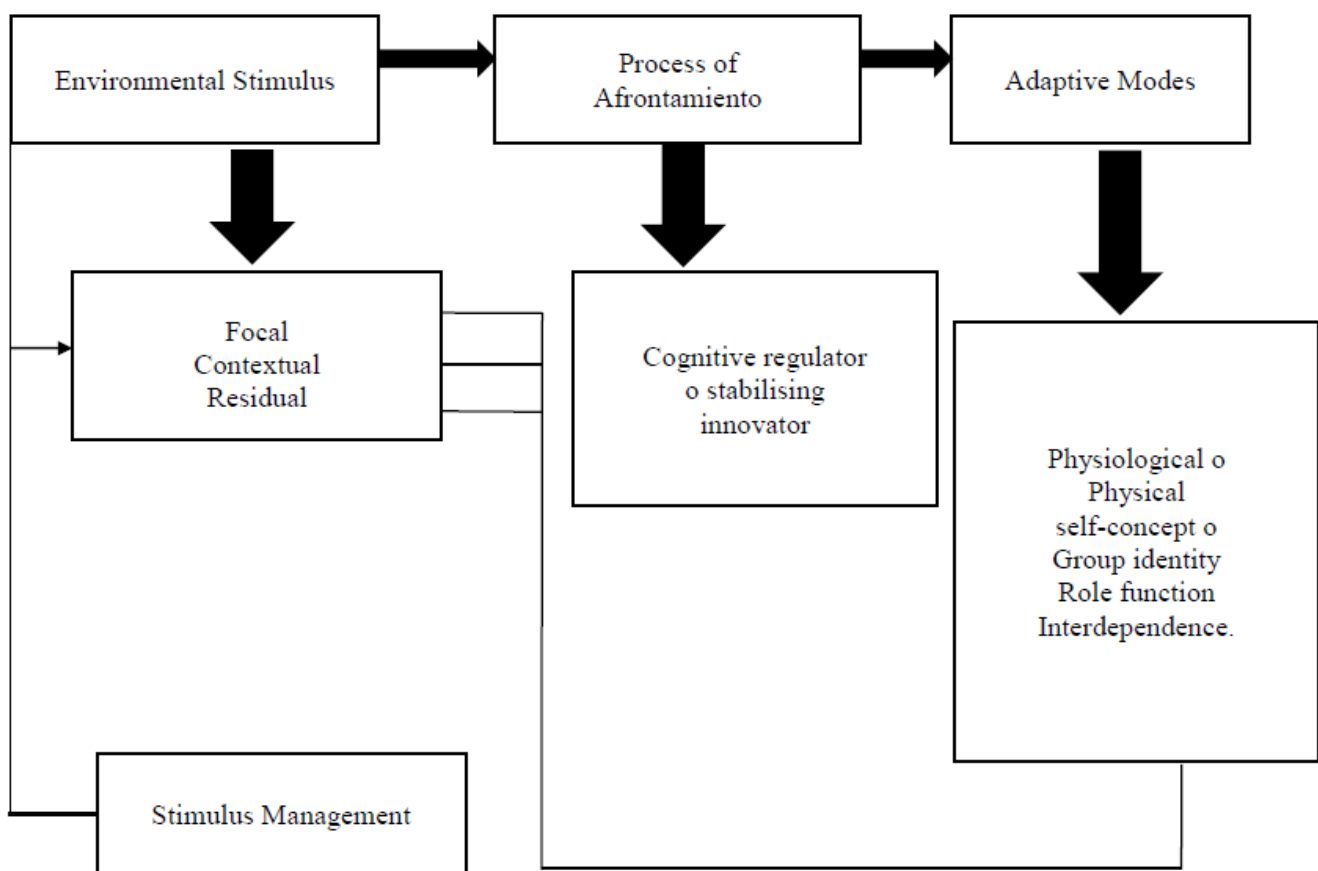
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In this social context, the purpose of this research is to promote adaptive behaviour, mainly represented by the development of awareness of the risk of illness in people who have direct family members who have or have had breast cancer, using nursing guidance.

The following concepts were used for this programme:

- a. Focal stimulus: which gives the opening for the intervention of nursing guidance to women at risk of breast cancer.
- b. Contextual stimuli: such as the risk of breast cancer in women, including hereditary risk, alcohol consumption, smoking, poor eating habits (overweight-obesity), lack of physical activity, lack of adequate and early self-examination, together with older age at first pregnancy, fewer births and shortened lactation.
- c. Cognitive coping process represented by knowledge about breast cancer.
- d. Physiological adaptive mode defined by overweight and obesity, and the self-concept adaptive mode: by the perceived risk of developing breast cancer.
- e. Adaptive response integrated by awareness of breast cancer risk.

Figure 3 Stimulus



Source: Own Elaboration

The following table shows the points that were taken from Callista Roy's theory in order to adopt some variables of use for this theory.

Table 2

Callista roy adaptation model	Educational intervention strategy on risk perception and knowledge of breast cancer.
The characteristics of internal and external Internal and external stimuli influence the appropriateness of cognitive and emotional processes.	Due to the effects of diet (overweight/obesity), combined with older age at first pregnancy, fewer births and shortened lactation, smoking, alcoholism, lack of physical activity, combined with older age at first pregnancy, fewer births and shortened lactation.
The appropriateness of the cognator process has	Knowledge of the disease and its risks helps us to raise awareness.
influence on adaptive responses	It is intended to understand that when a woman is at risk of breast cancer, it raises awareness of the disease.

Source: Own Elaboration

2.1.2. Methodology

This chapter describes the design of the study, the population, sampling and sample, followed by the inclusion and exclusion criteria, in addition to the recruitment and selection of participants and generalities of the treatment, describes the instruments and ends with the ethical considerations that guided the study and the data analysis.

The research will have a quantitative approach, because a descriptive analysis will be carried out with frequency distribution in the qualitative variables; and in the quantitative variables, confidence intervals will be summarised and calculated. The objective of this project was to strengthen the level of self-care knowledge about breast screening as a means of preventing breast cancer in a support network. The aim was to provide them with tools that would enable them to identify situations that could affect or compromise their health. The problem of this study was approached from different approaches that achieve a full identification of the problem and contribute to the design of the intervention, implementation and evaluation of the same, always with the guideline of improving the care provided by professionals in the discipline during their daily practice (Sidani & Braden, 2011).

It is a quasi-experimental design study, carried out on 17 women over 18 years of age, caregivers of cancer patients, with non-probabilistic sample selection, as it is a research with manipulation of variables, whose selection criteria were framed in the informed consent to participate in the study.

The study was organised in 3 phases: 1) assessment of previous knowledge about breast cancer prevention and control, 2) application of an educational intervention and 3) reassessment of the knowledge acquired. Phases 1 and 3 were developed through the use of a survey-type instrument, designed and validated by Santos and Mata, which contains 9 groups of questions, of which only 8 were used, related to: knowledge about breast cancer (6 questions), signs and symptoms about breast cancer (6 questions), situations that increase the risk of cancer (7), knowledge about breast cancer detection techniques (8 questions), knowledge about breast self-examination (8 questions), who should perform breast self-examination (8 questions), when it should be performed (10 questions), and reasons and benefits of performing breast self-examination (4 questions).

The second phase of the implementation of the support network programme was based on a pre-established educational programme, which aimed to strengthen the participants' prior knowledge and included the following topics: general concepts, signs and symptoms, associated risk factors, screening techniques, benefits and precautions of breast self-examination. The teaching techniques used were educational talks, didactic discussions and demonstration of the breast self-examination technique.

2.2. People

The intervention was carried out with women over the age of 18 and under the age of 65, who had a direct family member with cancer, and were direct or indirect caregivers of patients hospitalised in a private hospital in the city of Veracruz, especially in the oncology area.

2.2.1. Population

This intervention was carried out with 17 women between 18 and 65 years of age, who were direct caregivers of hospitalised patients in the oncology area of a private hospital in Veracruz, during the period January 2023 - March 2023.

2.2.2. Sample

The sample consisted of 17 women between 18 and 65 years of age, who were direct caregivers in the oncology area, in beds 1 to 60, during the period January 2023-March 2023 and who agreed to participate in the study, with prior informed consent.

2.2.3. Inclusion, exclusion and elimination criteria

Inclusion: Women between the ages of 18 years and 65 years, who signed a prior consent form, and who were caregivers in the oncology area, from bed 01 to bed 60 of a hospital in Veracruz, were included.

Exclusion: Women with a previous diagnosis of breast cancer.

Elimination: Participants who did not answer more than 85% of the questionnaire were eliminated from the study, in this case all of them answered the entire questionnaire.

2.2.4. Recruitment and selection of participants

For the recruitment and selection of participants, authorisation was requested from the authorities of a public health institution in the city of Veracruz, which specialises in oncology; Once the authorisation was obtained, we proceeded with the collection of information to compile the database of patients with a diagnosis of cancer, and these patients themselves attended their chemotherapy session and were previously with a caregiver, and it was in the same sessions where the direct caregivers were invited to participate in this intervention, if they accepted, the informed consent was signed and we proceeded with the measurements of weight and height, and then the filling out of the questionnaire.

2.3. Immediate goals

2.3.1. General

To raise the level of knowledge of the target groups about early detection of breast cancer through an educational intervention to motivate behavioural change in the female population.

2.3.2. Specific

To design by means of the evaluation of a questionnaire the knowledge that one has about the risks of presenting breast cancer, in order to then implement intervention by a support group, and guidance.

2.4. Dosage

Session 1. "Breaking the ice"

Objective:

To expose participants to the educational programme: Implementation of support network on breast cancer knowledge, as well as to assess their perceived knowledge through the initial instrument of risk perception and knowledge of breast cancer.

Content:

Participants were received in the waiting room and welcomed to the session, which began with a dynamic of introduction and ice-breaking, so that patients could get to know each other and the group coordinator, followed by the introduction of all the participants.

During this first session, the group members' expectations were detected by asking the participants to respond individually to the following questions: what is your name, do you know the current condition that will be discussed, yes or no, what is it, do you have experience of cancer support with your direct caregiver, do you think it is important to have understandable information about breast cancer, why, do you consider yourself a caregiver prepared with the right tools to bring this knowledge to others in your community, what do you expect from the programme, and what do you expect from the programme?

At the end of this space for questions, the objectives of the intervention are presented; likewise, the rules that the group must comply with during each session are explained, which include: punctuality, attendance, discretion and respect for the comments and opinions of others, respect for the time of participation during the sessions, and they are made aware that if they cannot attend all the group sessions, the session will be given to them individually, on the day they are available.

Afterwards, they will be given the stipulated time to fill in the instrument.

Session 2. "Understanding my current situation"

Objective:

- For caregiver participants to understand their current situation and the resources available to optimise their overall health.
- For participants to identify what prevention, diagnosis and treatment measures are available for current breast cancer care and prevention.

Content:

Participants will be greeted in the waiting room, given a welcome to the session, and a video broadcast, finally a round table brainstorming session.

Actions:

Educate to prevent; prevent so as not to cure; cure so as not to die; Prevention is possible. - Allow participants to express themselves freely on the subject, with a maximum of 2 minutes per concern: maximum 2 concerns at the end of the session (non-cumulative time limit of half an hour). - To teach the implications that breast cancer has on the lives of breast cancer carriers.

Session 3: Learning to relax

Objective:

For each participant to learn to relax as part of the nursing care plan to accelerate confidence and self-care.

Actions:

Through exposure to relaxation techniques, relaxation technique workshop, through presentation with participants. Create a suitable environment for the activity, organising the work team ahead of time. Orient each of the collaborators, and that the objectives and goals to be achieved are understood Keep the participants in a comfortable place, with music, relaxation, and preferably already be notified to wear comfortable clothes.

Session 4. End of the application of the instrument, part 2

Carry out the application of the instrument on the participants and end with the closing of the programme, through the measurement instrument, then a round table, brainstorming, and presentation with the participants to continue with the strategy of this support network to more people who are in their communities.

2.5. Sessions

First intervention session: "Breaking the Ice "			
Time	Activities	Participants	Resources
15 min	Information was provided to potential participants about the implementation of the intervention, and only those who agreed to carry out the intervention signed the questionnaire.	Women between 18 and 65 years of age, who are direct or indirect caregivers of hospitalised patients in the oncology area of a private hospital in Veracruz.	Informed consent forms in Word.
20 min.	Application of the questionnaire.	Women between 18 and 65 years old, who are direct or indirect caregivers of patients in the oncology area of a private hospital in Veracruz..	Blue pencils.
30 min	Anthropometric measurements.	Women between 18 and 65 years of age, who are direct or indirect caregivers of patients in the oncology area of bed 01-60 of a private hospital in Veracruz. We began by measuring height, followed by weight according to international recommendations (WHO, 2015); people were asked to wear light clothing and as few accessories as possible, and shoes had to be removed. Height was measured with a stadiometer; head, shoulders and buttocks at the level of the instrument; upright posture, hair pressed, heels together and toes slightly apart (Appendix B); body weight was measured using an electronic scale accurate to 100 grams (Appendix C).	Questionnaire sheets. pencils

Second session of the intervention "understanding my current situation"			
Time	Activities	Participants	Resources
50 min	Participants will be greeted in the waiting room, welcomed to the session, and a video broadcast, followed by a round table brainstorming session.	Women between 18 and 65 years of age, who are direct or indirect caregivers of children in the paediatric oncology area of bed 01-60 of the Veracruz children's hospital.	Presentation of the topic in a video, round table.

Third session of the learning to relax intervention			
Time	Activities	Participants	Resources
30 MIN	Through the presentation of relaxation techniques, relaxation technique workshop, by means of a presentation with the participants. Create a suitable environment for the activity, organising the work team ahead of time. Orient each of the collaborators, and that the objectives and goals to be achieved are understood Keep the participants in a comfortable place, with music, relaxation, and preferably already be notified to wear comfortable clothes.	Women between 18 and 65 years of age, who are direct or indirect caregivers of children in the oncology area of bed 01-60 of the private hospital in Veracruz	Horn Mats Aromatherapy

Fourth session of the intervention, implementation part 2			
Time	Activities	Participants	Resources
30 min	Carry out the application of the instrument on the participants and end with the closure of the programme, through the measurement instrument, followed by a round table, brainstorming, and presentation with the participants to continue with the strategy of this support network to more people in their communities.	Women between 18 and 65 years of age, who are direct or indirect caregivers of patients in the oncology area of bed 01-60 of the private hospital in Veracruz.	Instrument Pencils

Mapping

Context (description of what i know)	Problem (identify)	What would be the approach to nursing intervention or education?
<ul style="list-style-type: none"> - There is a risk of developing breast cancer, and it is more observable in direct relatives who have had breast cancer. - The direct relatives of patients with breast cancer do not have an educational orientation on the risks involved in breast cancer. - There are more and more cases of breast cancer, even though there is health promotion to address this condition. - It is undeniable the responsibility of the university institution that educates of nursing professionals to transform the culture and care of people's - Health care, which must begin with the women who participate in the daily dynamics of the institution, whether they are students or workers. - Institutional dynamics whether they are students or workers, promoting - Knowledge of breast health, identification and modification of behaviours related to the disease. 	<ul style="list-style-type: none"> - Despite the existence of techniques such as breast self-examination (DOC), there are more and more cases of breast cancer in the population, even though they are supposed to perform self-examination. - Women at risk of breast cancer are not educated and knowledgeable about self-examination techniques. - Women at risk of breast cancer do not know that they are at risk of breast cancer, which is why through education-based questionnaires they can change their knowledge. 	<ul style="list-style-type: none"> - Nursing interventions for the improvement of quality of life in the knowledge of having breast cancer. - Its purpose is to promote adaptive behaviour, mainly represented by the development of awareness of the risk of illness in people who have direct family members who have or have had breast cancer, using nursing guidance.

2.6. Strategies, techniques and/or methods

Approval was obtained from the Research Committee and the Research Ethics Committee of the public hospital in the city of Veracruz. The nursing authorities of the hospital were first contacted to request written authorisation to use information from their patients. Databases within the institutions were reviewed and the total population of patients undergoing cancer treatment was pooled. Permission was obtained and hospital visits were planned to approach only female caregivers.

Personal information such as telephone and address of caregivers was documented and handled by the principal investigator only in accordance with ethical and legal requirements. People were contacted through a visit to their area as a caregiver, in order to establish empathy and have a better response to participation; the development of the study was briefly explained and the information of those who agreed to participate was documented. Then a new appointment was made when the complete list of participants was available in the group to find out when they would return to the hospital, or if they would stay more days as a caregiver.

A first intervention was carried out with the group that was in the hospital; the family caregivers chose a date and time to attend the measurements and educational session. Upon arrival at the caregiver's bed, the dynamics of the session were introduced and informed, a manual was given to the participant, so that he/she would know the procedure to follow for the intervention, anthropometric measurements were taken, and these were written down; at the end, the application of instruments with pencil and paper was started. After the measurements, the educational session began. In some cases, the intervention had to be scheduled if the caregiver was busy, or if an event occurred that made it impossible for her to pay attention.

2.7. Resources: human, physical, etc.

Human: 1 interventionist, 17 women participants.

Physical: Veracruz Private Hospital, adult oncology area.

Equipment/Furniture	Quantity	Investment
Computer	1	o
Cannon (rented)	1	\$1000
Box of gloves	1	\$100
Antibacterial gel	2	\$150
Stadiometer	1	\$200
Scale	1	\$450
Box of pens	50 pzas	\$150
Box of 100 pcs of masks	1	\$50
Participant manual	17	\$340
Bottles of water	40 pzas	\$200
Fruit cocktail in a glass	40 pzas	\$150
Total		\$2790.00

Chapter III. Implementation of the intervention

3.1. Describing the process of the intervention

In order to be able to carry out this educational intervention, we first had the acceptance of the Hospital's research committee, which took about 2 months to agree to carry out the intervention.

Subsequently, all the didactic and audiovisual material was prepared, and tools were purchased to help us implement the instruments, manuals, anthropometric measurements, as well as support and external material.

When we had the list of patients who were hospitalised, during the month of March, we took on the task of personally going bed by bed from 01 to 60, to investigate and go in search of female caregivers, who knew about the intervention and decided to participate, so that they could sign the informed consent form and plan the first session, we asked them for their telephone number, so that we could be in direct contact, and in turn be able to share videos and information related to our intervention.

The first session was given to 7 women, then this same session was given to a group of 2, 1, 1,1, 1,1, and 5, this was given during week 1 of March 2023. We continued with the second session during week 2 of March 2023, which was given to a group of 10 women in person, and 7 women participated virtually. In our week 4, we managed to bring together two face-to-face groups on different days of the week, which were divided into 3 women and 14 women.

And finally, our last session of the intervention was given to all 17 women participants, to create a support network, and to link all the doubts, learning and application of our final instrument.

The last session was attended by a representative of the hospital's management, who thanked us for our support and urged the participants to continue united with this support network for the fight against breast cancer prevention, and concluded with a general get-together.

Finally, we worked on the collection of results to produce a report of the results, which were presented in a statistical summary, and by means of a presentation to the hospital that provided the support to carry out the intervention.

Chapter IV. Evaluation of the intervention

4.1. Results: qualitative and quantitative

This chapter presents the results of the intervention; it begins with frequencies and descriptive statistics for the socio-demographic data, as well as descriptive statistics and the normality test for each of the study variables. Later, the results of the analysis carried out to assess the internal consistency of the instruments used are shown. It ends with the results of the inferential statistics carried out for each of the objectives.

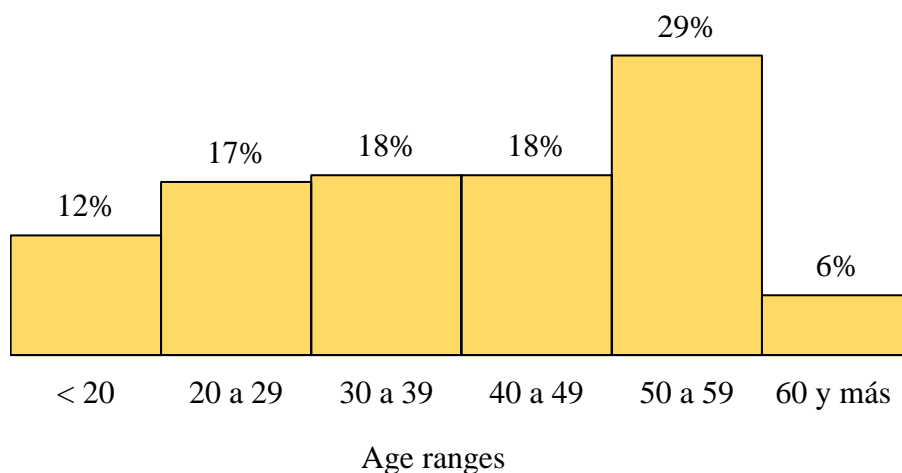
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The study group consisted of 17 caregivers of cancer patients in the oncology area of a public hospital in Veracruz.

The average age was 41 ± 15.5 years, with a minimum age of 18 and a maximum of 65 years. The most frequent age range was 50 to 59 years.

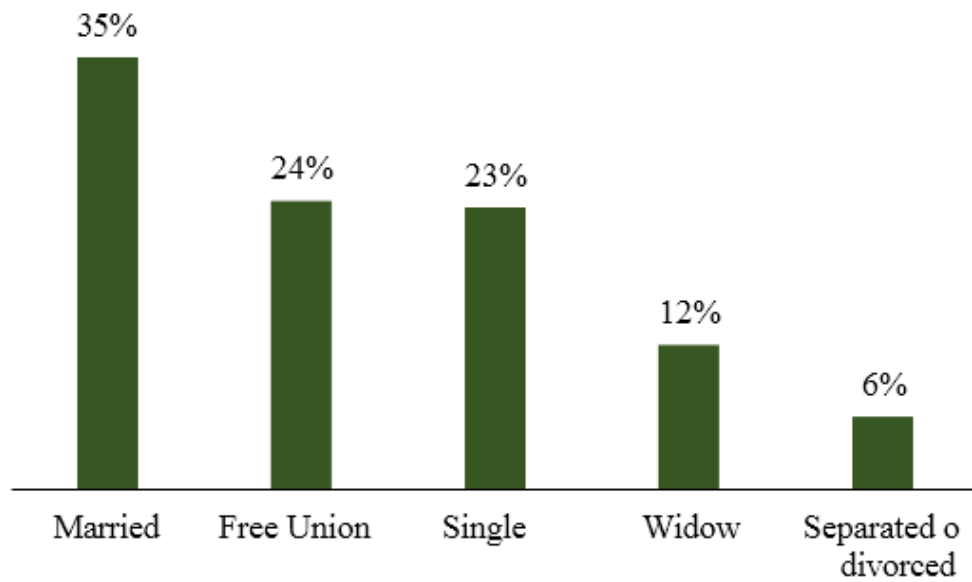
Graph 1

Age distribution



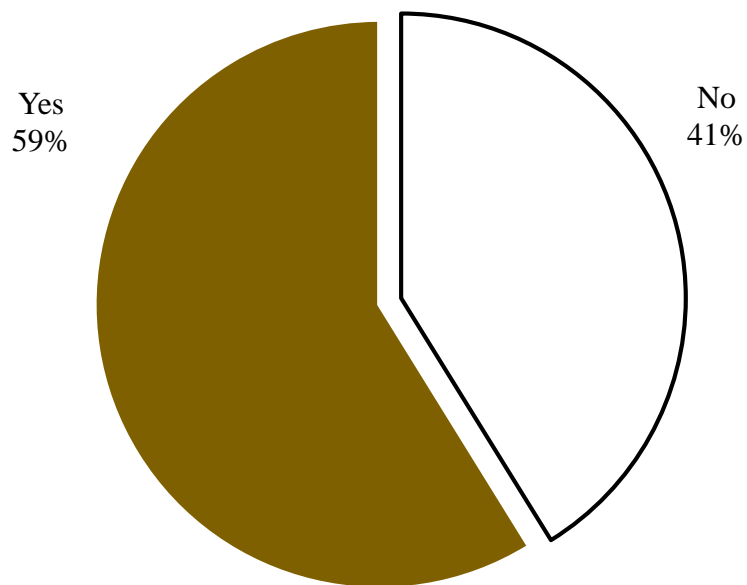
Source: Own Elaboration

Women were found to be married or in a civil union, some were single, separated or widowed.

Graph 2 Marital status

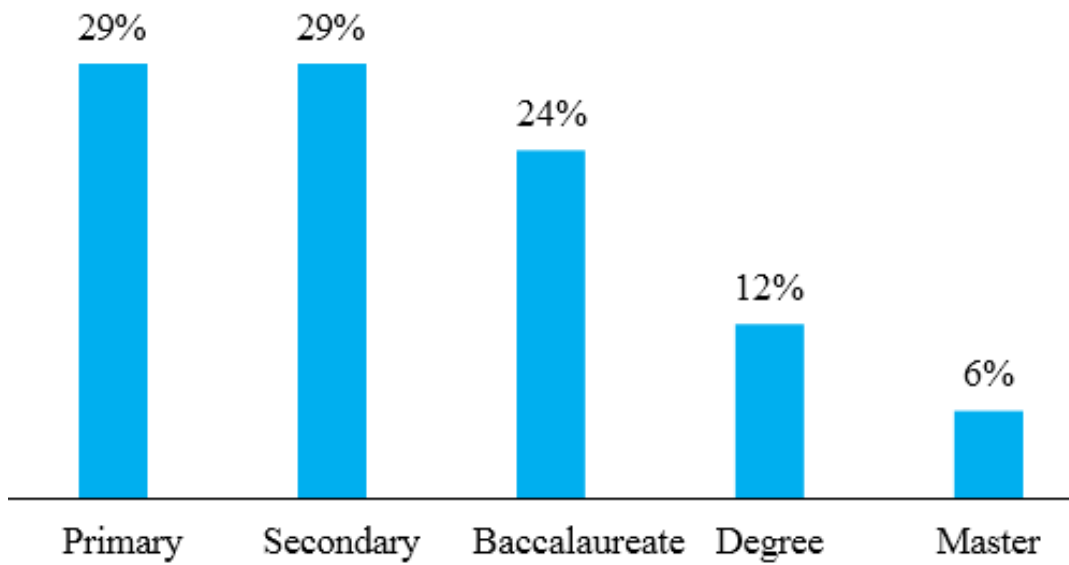
Source: Own Elaboration

More than half had children at the time of the study

Graph 3 Has children

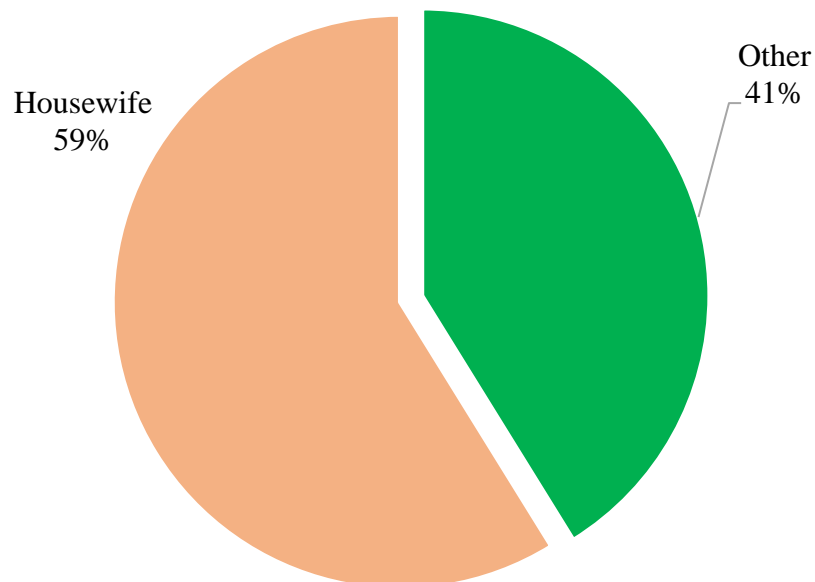
Source: Own Elaboration

Two categories of schooling with higher percentages were found, which were primary and secondary (bimodal), 24% also had a bachelor's degree, some had a bachelor's degree and one woman had a master's degree.

Graph 4 Schooling

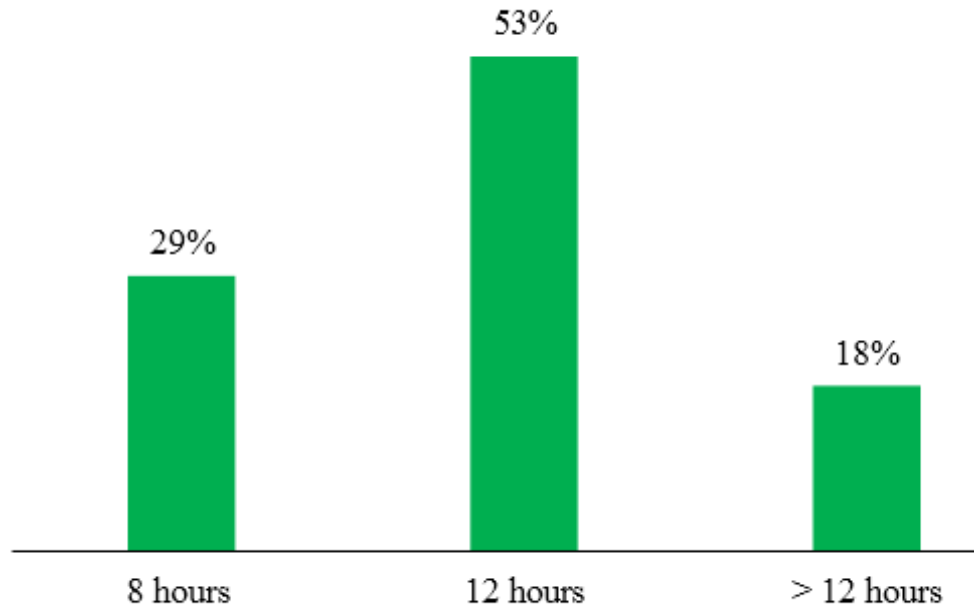
Source: Own Elaboration

Most were housewives, others were engaged in commerce, domestic workers, an accountant and a taxi driver.

Graph 5 Occupation

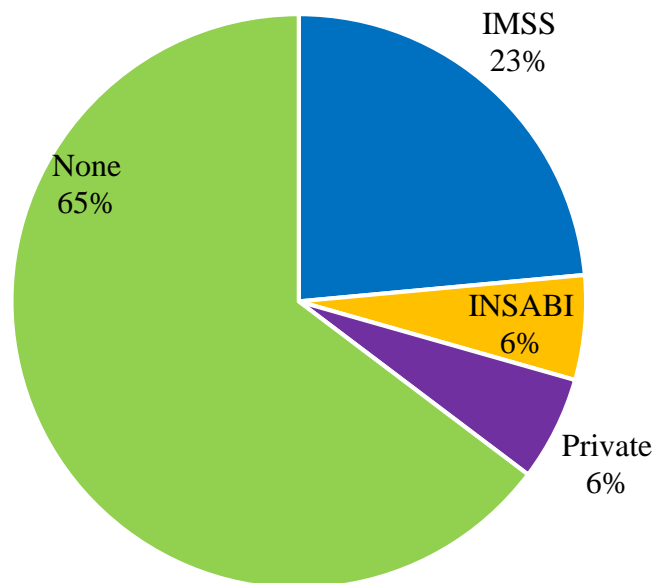
Source: Own Elaboration

The daily working hours were 53% 12 hours, 29% mentioned working 8 hours and 18% mentioned working more than 12 hours.

Graph 6 Daily working hours

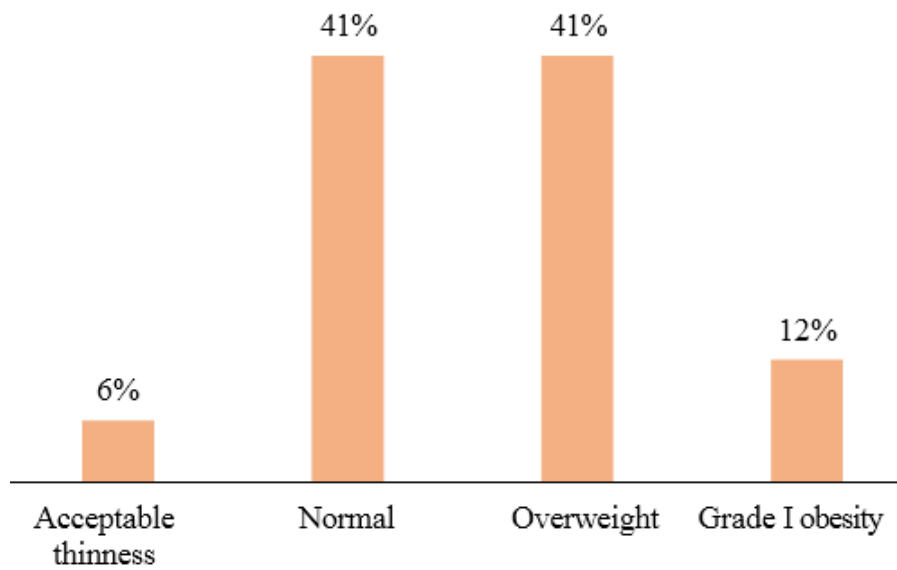
Source: Own Elaboration

At the time of the survey 65% had no health insurance, 23% were affiliated to Social Security, 6% to INSABI and 6% had private insurance.

Graph 7 Health insurance

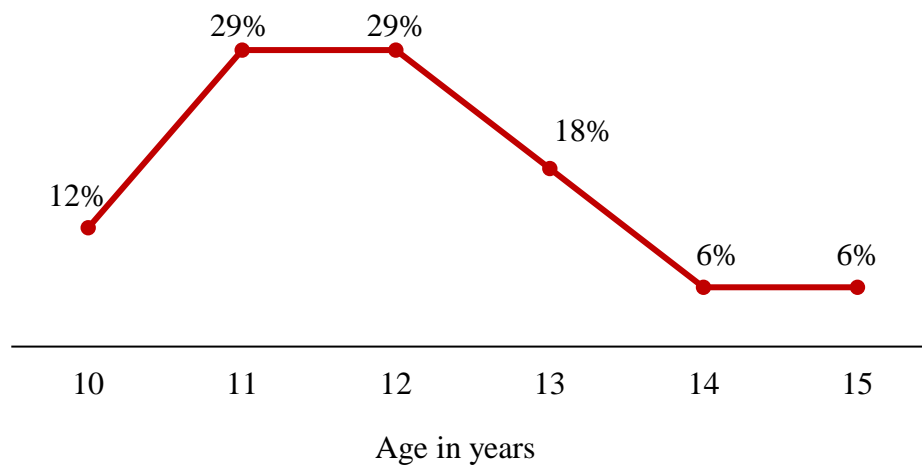
Source: Own Elaboration

The participants were measured for height and body weight in order to calculate their body mass index, identifying 6% with thinness, 41% with normal weight, 41% with overweight and 12% with grade I obesity.

Graph 8 BMI classification

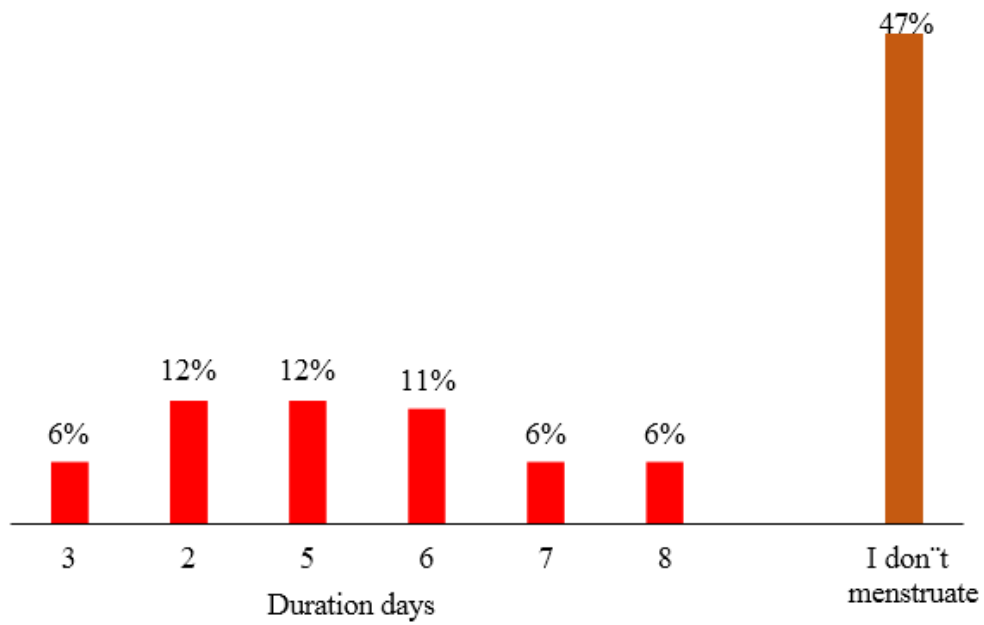
Source: Own Elaboration

Among the health antecedents identified was the age of her first menstruation, with a mean of 12 ± 1.3 years, with a range of 10 to 15 years.

Graph 9 Age at first menstruation

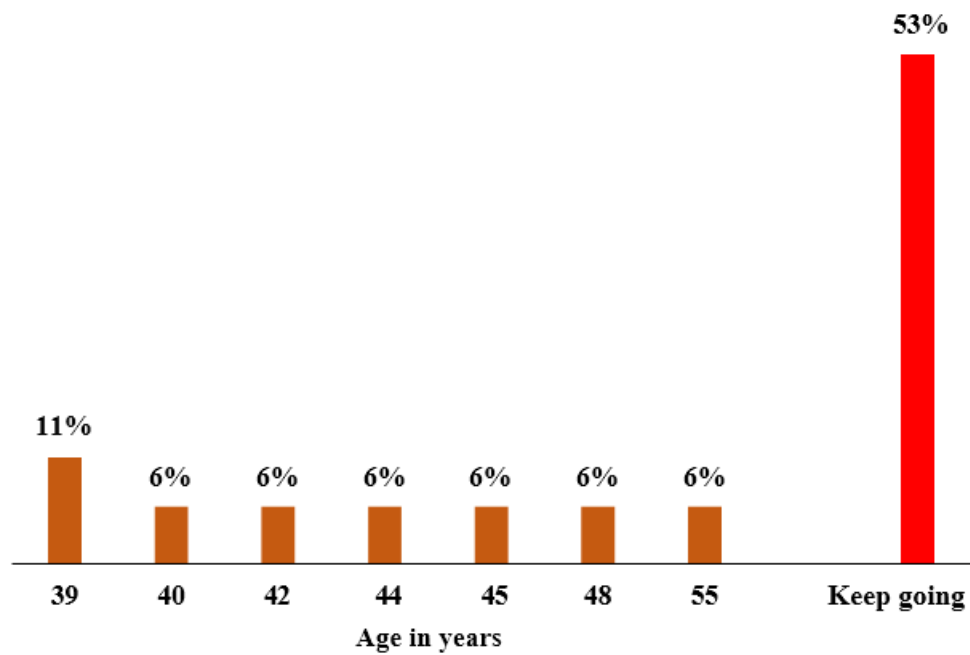
Source: Own Elaboration

Women who were still menstruating mentioned a minimum period of 3 days and a maximum of 8 days, the mean was 5.3 ± 1.58 days.

Graph 10 Length of menstrual period

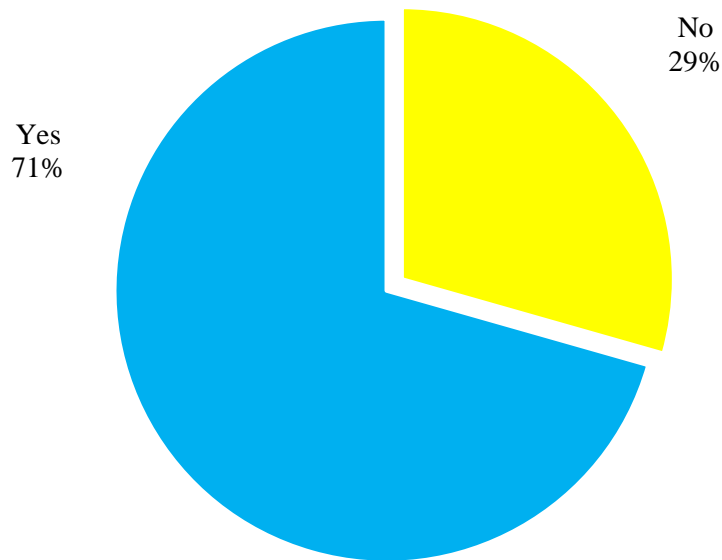
Source: Own Elaboration

Of the menopausal group, the average age at the end of menstruation was 39 to 55 years, with an average of 44 ± 5.45 years.

Graph 11 Age at the end of the menstrual period

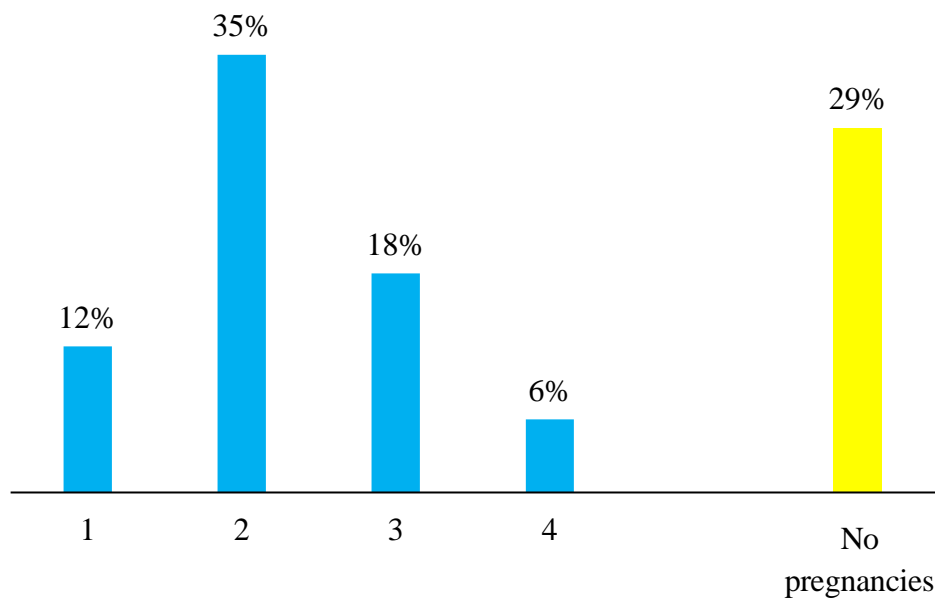
Source: Own Elaboration

71% of the participants had been pregnant at some point in their lives.

Graph 12 She has been pregnant

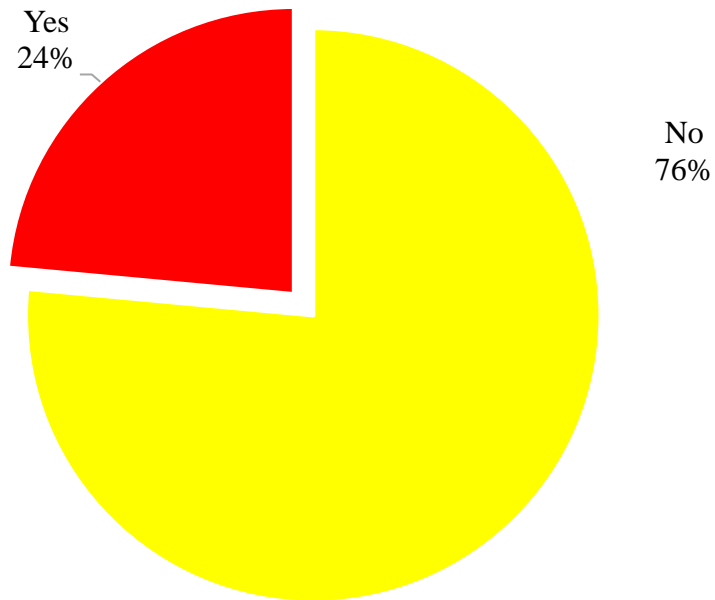
Source: Own Elaboration

The most frequent number of pregnancies was 2 and one caregiver had 4 pregnancies, 29% mentioned that they had not become pregnant.

Graph 13 Number of pregnancies

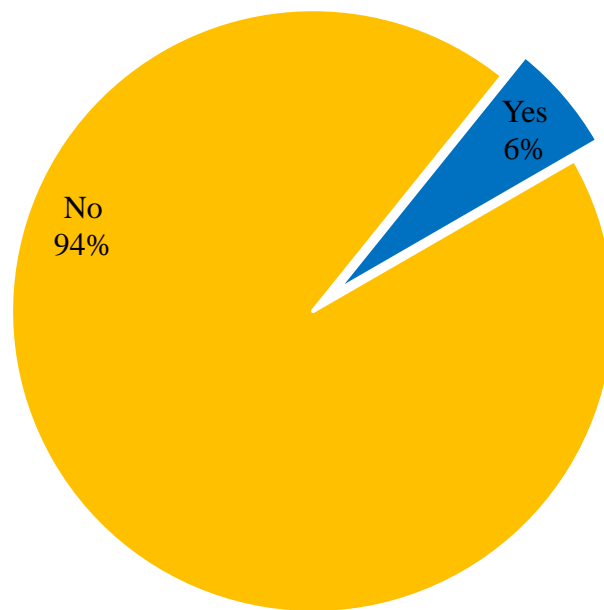
Source: Own Elaboration

Within the questions on health related to breast cancer, the caregivers mentioned that 24% of them had experienced some health problem.

Graph 14 Has had breast problems

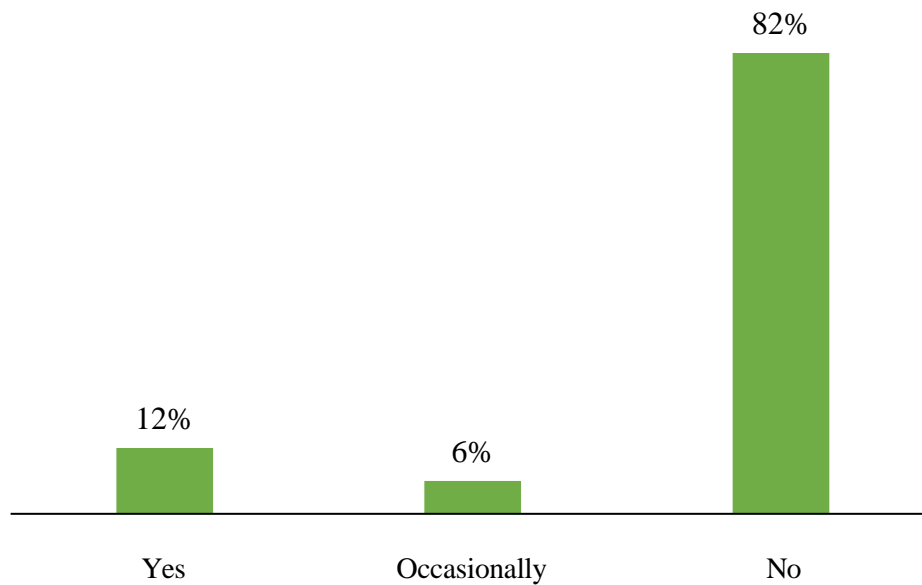
Source: Own Elaboration

Only one caregiver had ever had a breast ultrasound.

Graph 15 Breast ultrasound has been performed

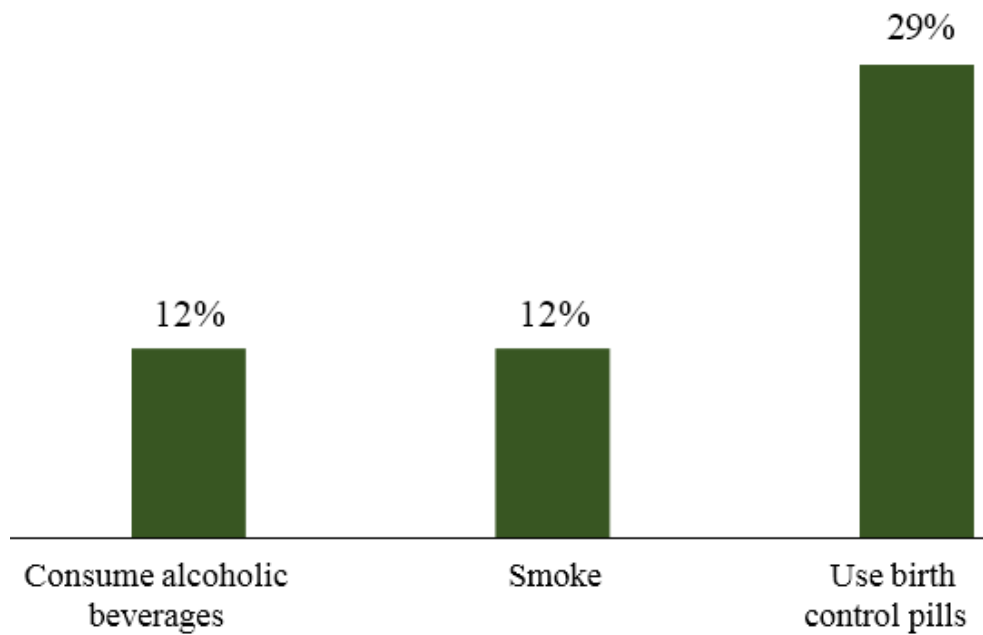
Source: Own Elaboration

Only two caregivers had a routine breast examination, one caregiver mentioned doing it occasionally and 82% acknowledged that they were not in the habit of doing it.

Graph 16 Breasts are scanned

Source: Own Elaboration

Some risk factors included in the study were the consumption of alcoholic beverages, smoking and the use of contraceptive pills.

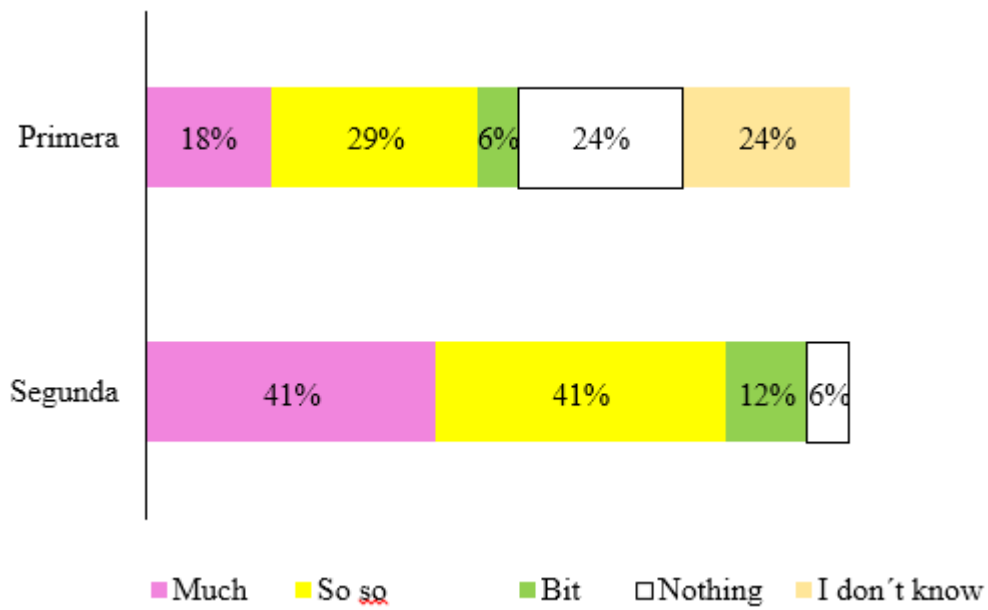
Graph 17 Risk factors

Source: Own Elaboration

The results of the first application are presented below, compared with the second, which was applied after the intervention in the form of informative talks on the perception of risk for breast cancer.

Confidence in having a mammogram increased for the second application.

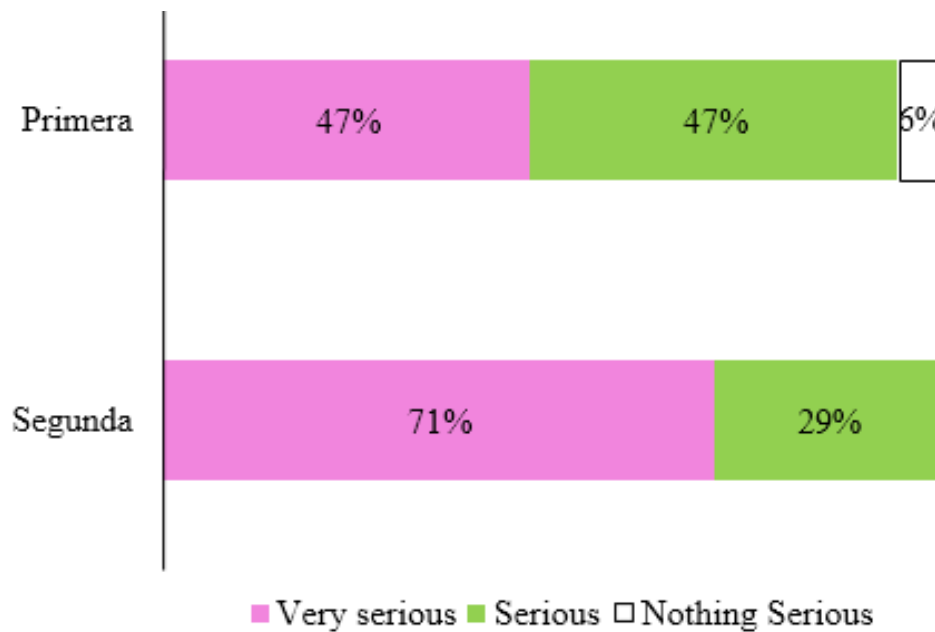
Graph 18 Confident about having a future mastography



Source: Own Elaboration

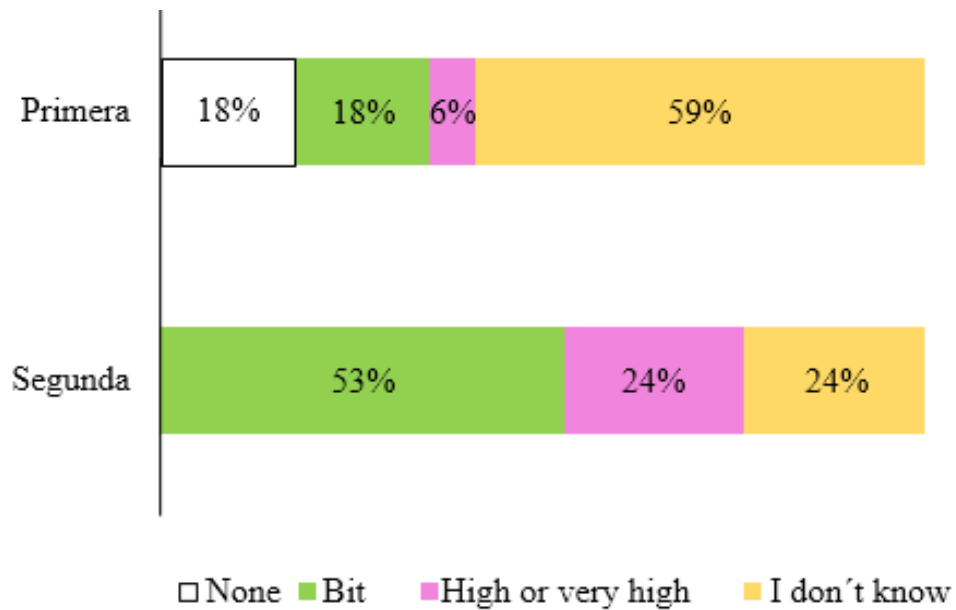
The perception of seriousness is noted to have increased following the provision of information.

Graph 19 Severity of breast cancer



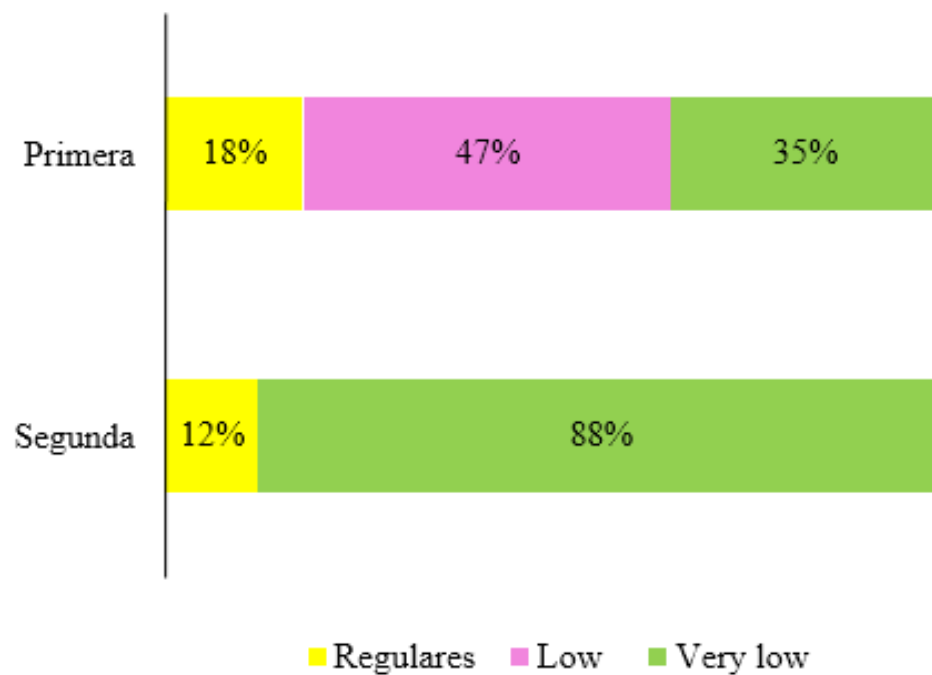
Source: Own Elaboration

It can be seen that the lack of knowledge about the risk has decreased, although some caregivers need to continue providing information so that they understand the seriousness of the risk in order to take preventive measures.

Graph 20 Risk of one day getting breast cancer

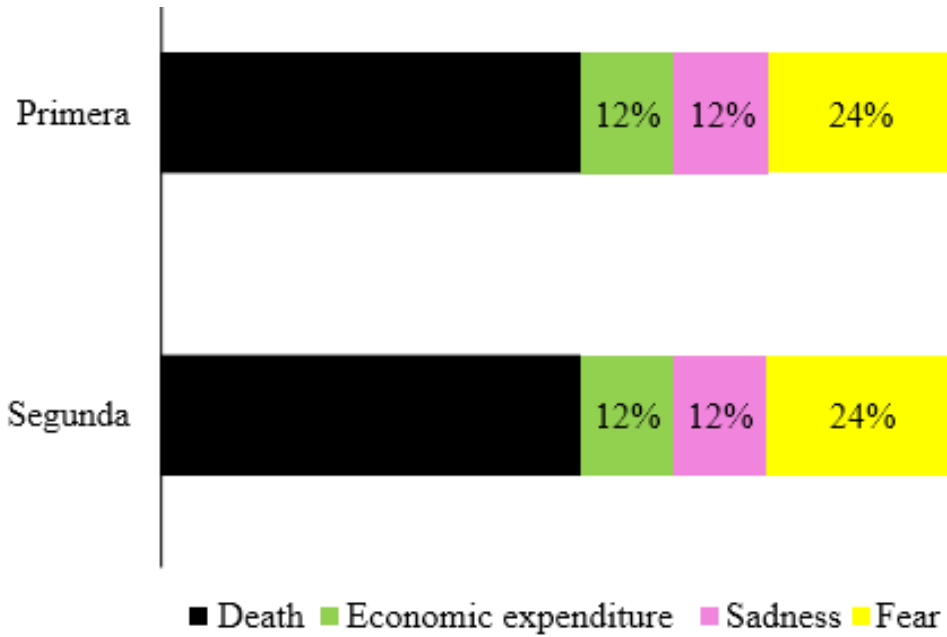
Source: Own Elaboration

Related to the above, the percentage of caregivers who came to understand the importance of preventive measures increased for the second application.

Graph 21 Chance of breast cancer if preventive measures are taken

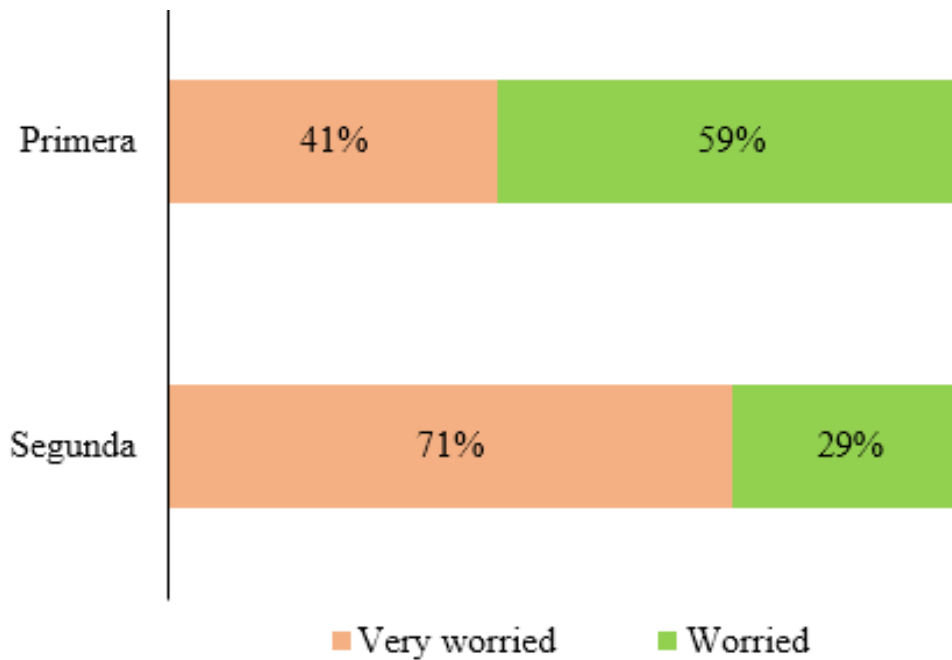
Source: Own Elaboration

Personal perception of breast cancer was observed to be unchanged across applications.

Graph 22 Personal significance of having breast cancer

Source: Own Elaboration

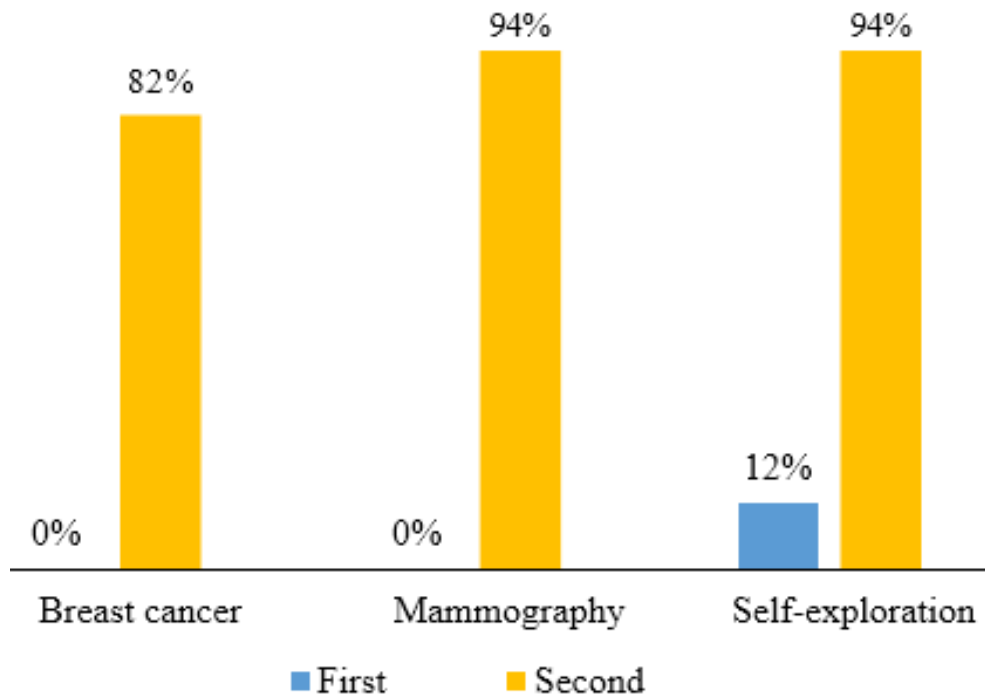
The feeling of concern increased for the second application as they were better informed.

Graph 23 Concerned about the likelihood of breast cancer in the future

Source: Own Elaboration

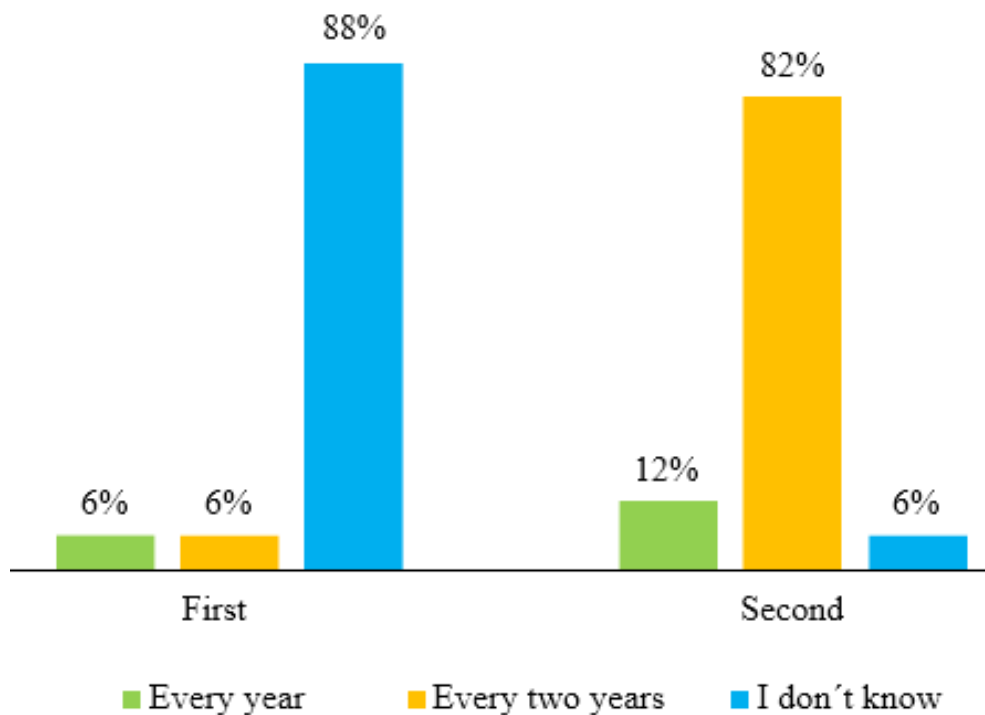
At the time of the first application, it was observed that there was a lack of knowledge about breast cancer, mastography and self-examination, knowledge that increased considerably in the subsequent application.

Confidence in having a mammogram increased in the second application.

Graph 24 Considers that it has knowledge of

Source: Own Elaboration

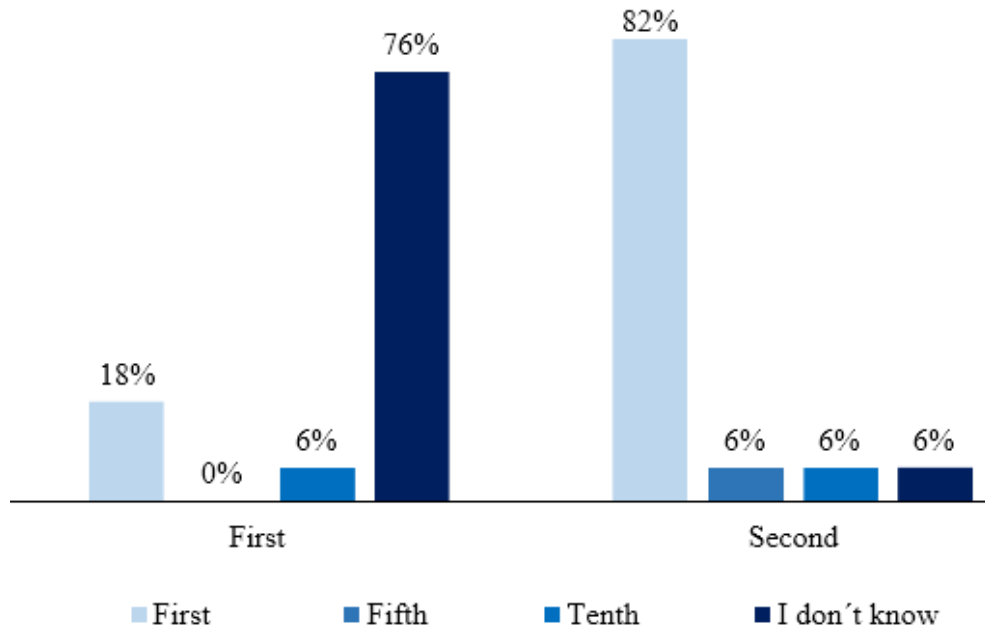
Specifically on the frequency of having a mastography examination, it is observed that knowledge increases after the informative talks.

Graph 25 Frequency of mastography in over 40 years of age

Source: Own Elaboration

Knowledge about the mortality issue in our country has also increased.

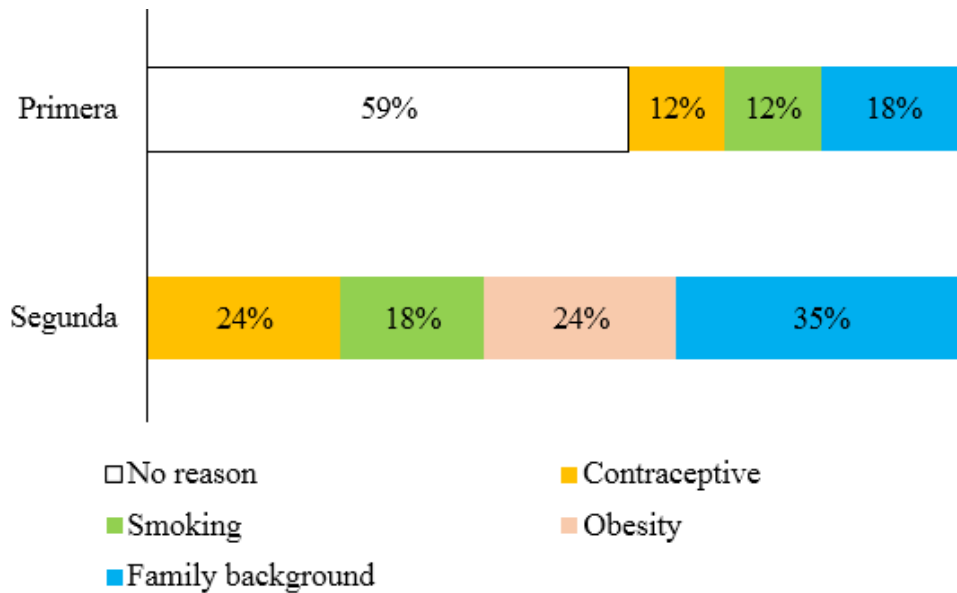
Graph 26 Breast cancer mortality in Mexico in women aged 15 to 54 years old



Source: Own Elaboration

There is a big change from the first to the second application.

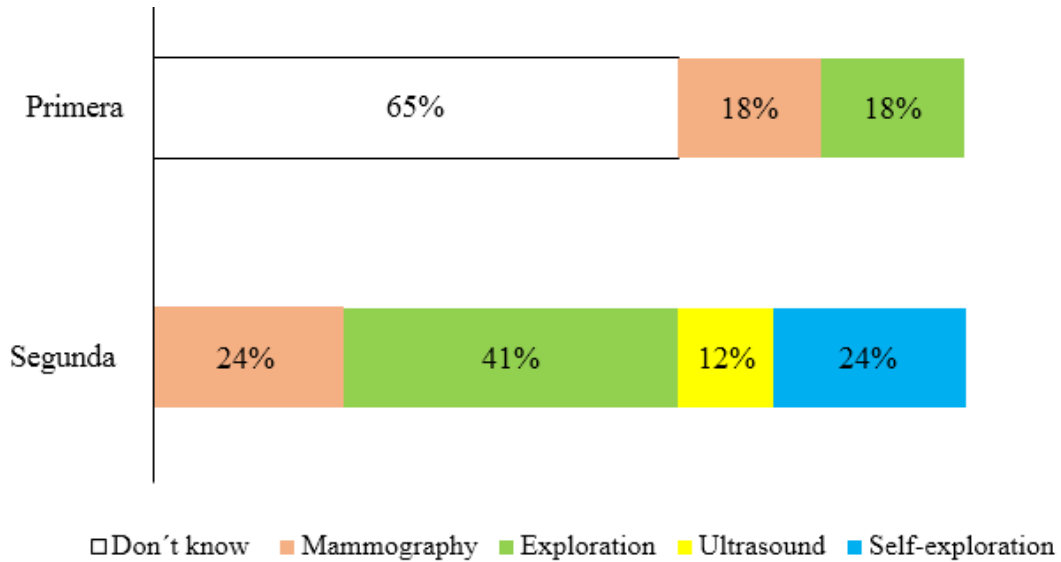
Graph 27 Main reason for having breast cancer



Source: Own Elaboration

The most frequently mentioned method was scanning, in contrast to the previous lack of knowledge.

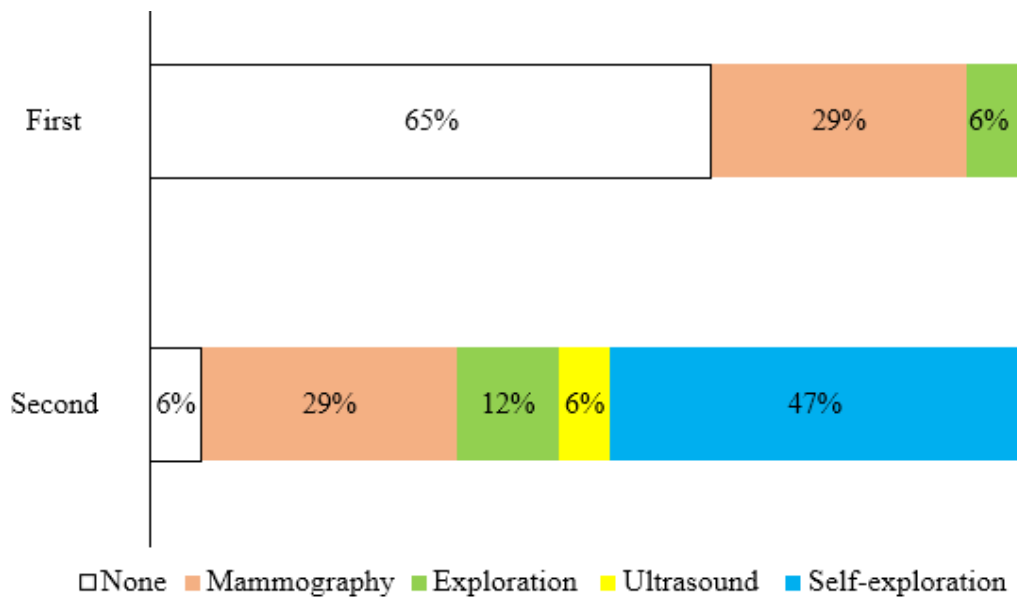
Graph 28 Believes it is the best method



Source: Own Elaboration

Of the methods that would be performed, the most frequent was self-examination, in contrast to the initial lack of knowledge.

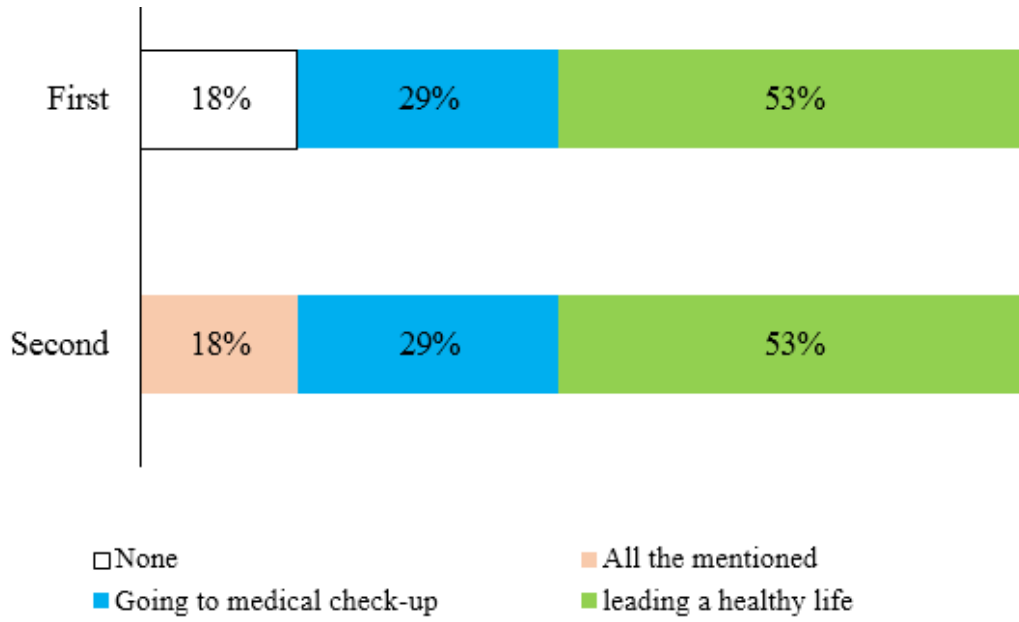
Graph 29 Method to be used



Source: Own Elaboration

Similar percentages were observed on prevention and that caregivers who were unaware of the issue were able to give an answer after receiving the information.

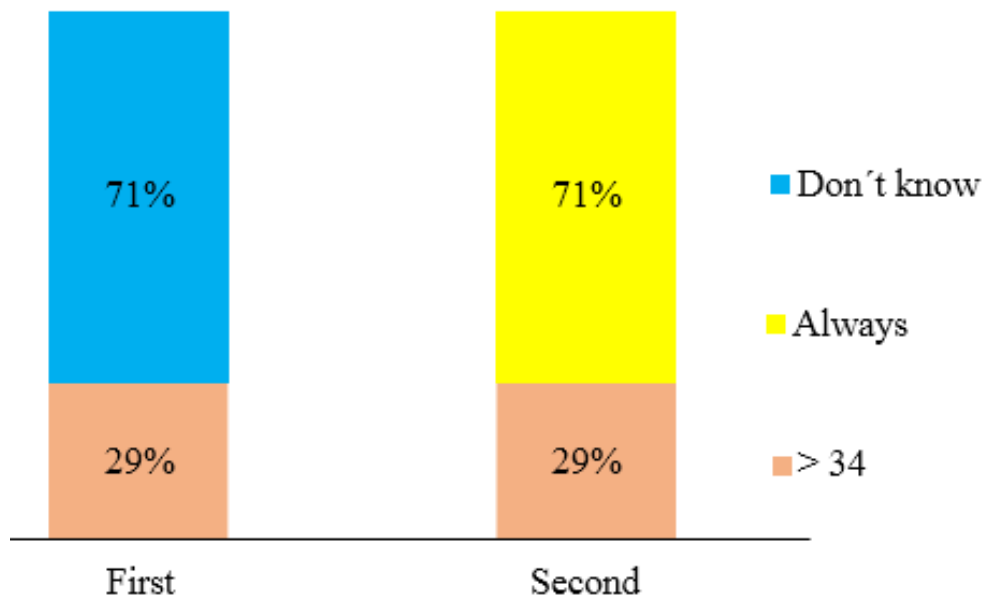
Graph 30 How breast cancer can be prevented



Source: Own Elaboration

Responses on age are observed.

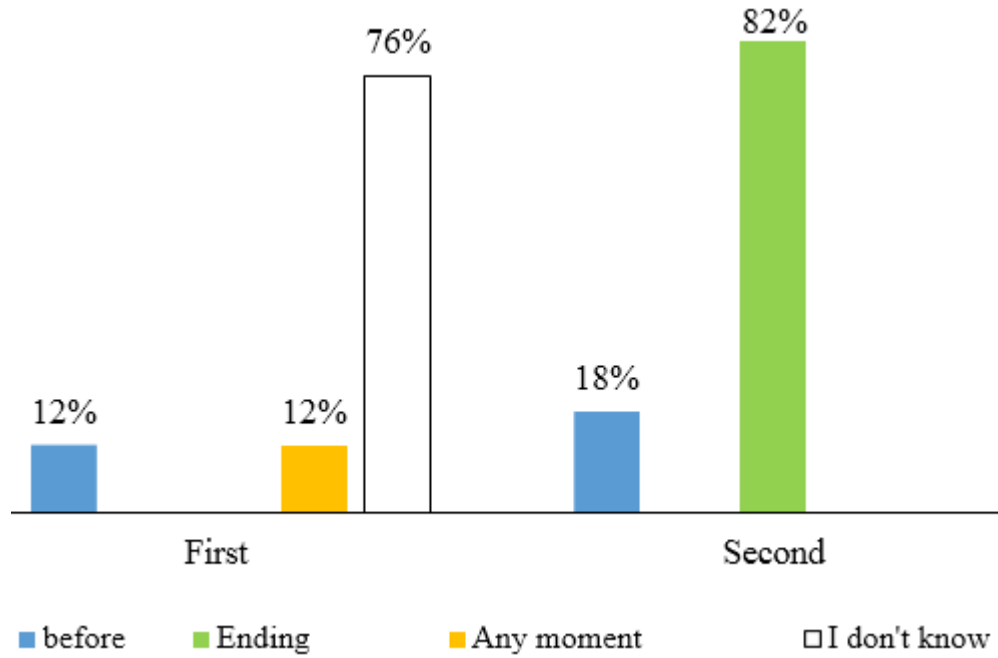
Graph 31 Age to start self-examination



Source: Own Elaboration

Similar to the previous ones, it is observed that the lack of knowledge is eliminated.

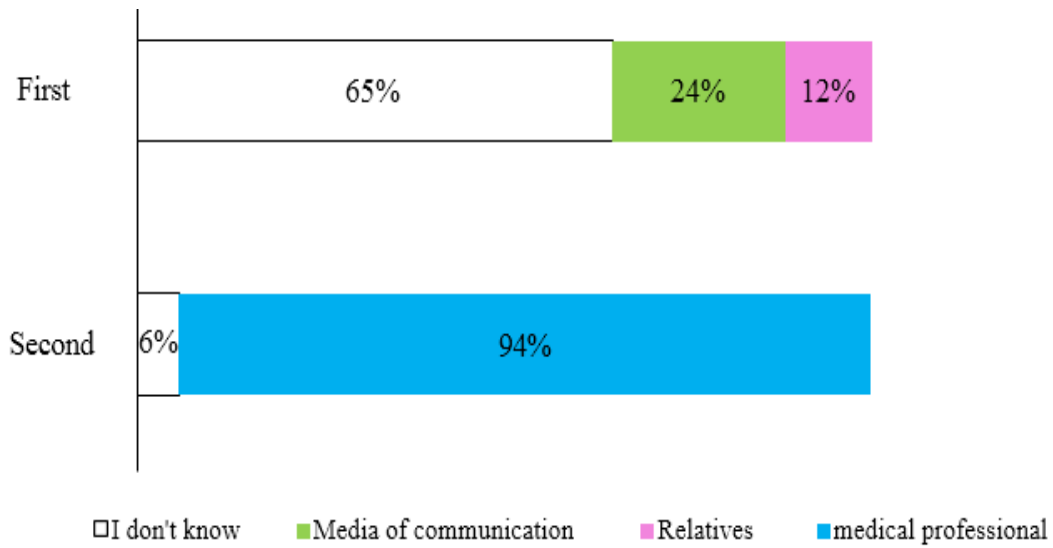
Graph 32 Timing of the menstrual cycle for self-examination



Source: Own Elaboration

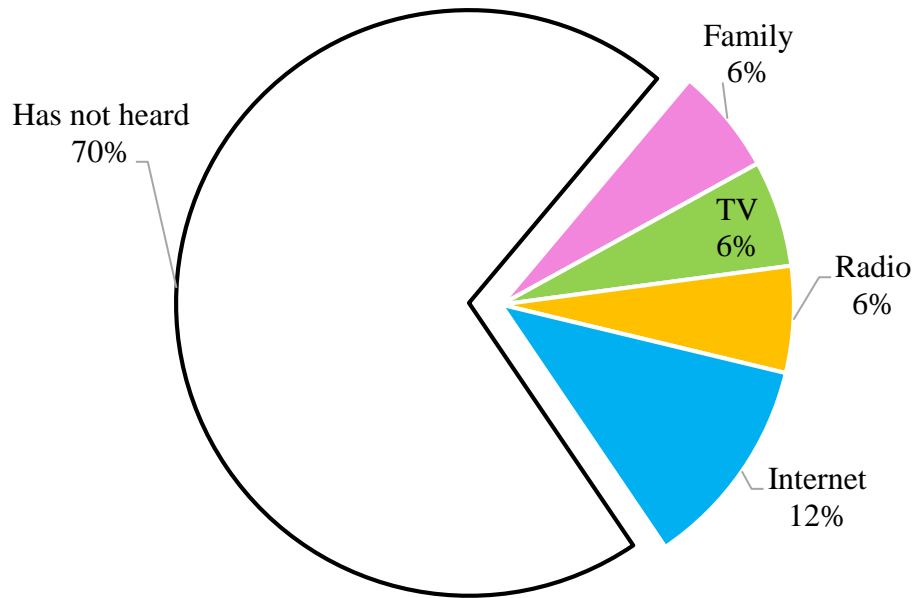
In the first application, caregivers did not mention health personnel as the figure who would provide them with this type of information.

Graph 33 Number of pregnancies



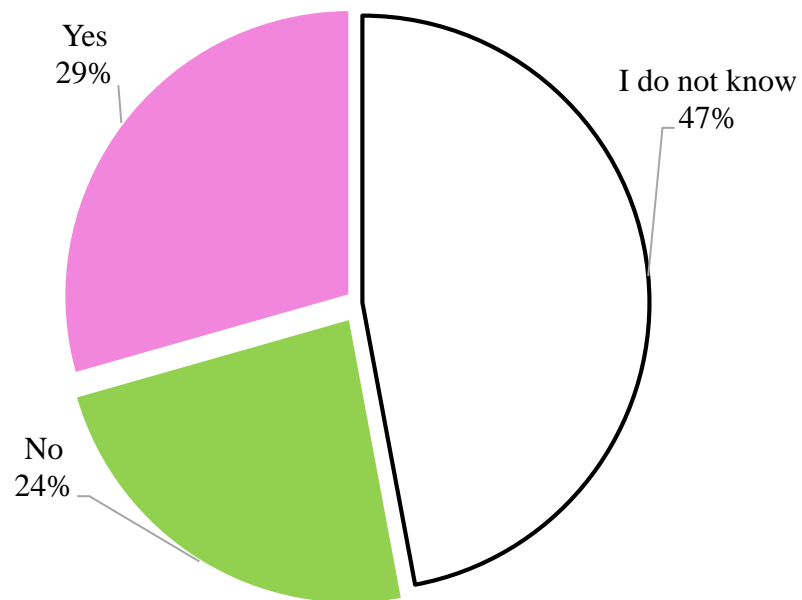
Source: Own Elaboration

On the subject of prevention, 70% said they had not heard of it.

Graph 34 Source of information on breast cancer prevention

Source: Own Elaboration

47% did not know if a family member had suffered from breast cancer, 29% said yes, of these 3 cases mentioned the mother and in one case the grandmother, one caregiver left this question unanswered.

Graph 35 Someone in your family has had breast cancer

Source: Own Elaboration

4.2. Analysis and interpretation

The Statistical Package for the Social Sciences SPSS® version 21.0 was used to process the data. To analyse objective 1, descriptive statistics were obtained, the information was entered directly into the programme and percentages and frequencies were obtained for categorical variables; for numerical variables, measures of central tendency were obtained.

4.3. Conclusions

We find ourselves in a time of increasing development and new cases of breast cancer, there is more and more morbidity and incidence and more women are losing the battle against this fight. This research aims to contribute to the population with new knowledge or re-educating and at the same time creating a positive conscience, at the moment of making them aware of the cases of the incidence of this illness, through the unhealthy lifestyles that constitute the main risk factor for presenting it.

It has been observed in daily practice, a number of new cases of women with late stages in the detection of breast cancer, despite the existence of health promotion; however there is a lack of strategies to ensure that change in the population, and that is why through this intervention is intended to serve as an accompaniment in the knowledge of risk factors and new techniques about breast self-examination, as it will also create impact on the time when the disease is diagnosed, and the future development of this.

The importance of this research lies in the fact that after measuring the knowledge of the patients, the results obtained will be used as a basis for the development of an educational intervention strategy in nursing praxis, addressing the best patients included in the sample and promoting them in the field of health, as promoter leaders, helping to increase knowledge and therefore diagnose the disease in time, by means of risk factors, signs and symptoms. In addition, this intervention will lead to timely therapeutic treatment, prolonged life expectancy, improved quality of life, and reduced costs and deaths in young women.

This study will implement an adoption of these risk factors in women to motivate them to change their lifestyle to a healthier one. The aim is to raise awareness in a positive way in order to empower their health and, above all, to prevent breast cancer.

This educational intervention will be based on breast self-examination and knowledge of risk factors for breast cancer in women between 18 and 65 years of age who attend hospitalisation with their children or relatives at the Veracruz Children's Hospital. The challenge is to provide education and training through a strategy that achieves early diagnosis.

4.4. Recommendations

The educational intervention applied in the present study increased the knowledge of the women participants about breast cancer and issues related to prevention and control of the disease. These results corroborate the need to develop the Pan American Health Organization's policies regarding information, education and counselling programmes to strengthen women's knowledge of risk factors and the signs and symptoms that require immediate health care.

The present research corroborates that one of the main ways to achieve changes in women's knowledge about the prevention and characteristics of breast cancer are educational interventions, which are often easy and inexpensive; this can have a positive impact on the early identification of the alteration. Given this life option, it is suggested to continue strengthening interventions that aim to increase knowledge about prevention and control of breast cancer, the importance of self-care and early identification of breast alterations, since topographic changes in the breasts is one of the possible ways to make them visible and thus resort to timely medical treatment. In addition to what has been proposed, community support networks can also be formed together with teachers and students of health sciences and public and private first level health care officials, so that through educational interventions and analysis of the application of breast self-examination in trained women, it is possible to work towards prevention and control.

In this way, this type of intervention is given the necessary power to be included, on a permanent basis, in the training programmes that guide the organisations responsible for providing health care and training human talent. Among these bodies, the institutions that provide health services and universities stand out.

In the same way, it is proposed to continue with research that identifies the health conditions of women and strengthens training for the prevention of disease by broadening the population base of beneficiaries, through the design of community outreach programmes, linked to the system of training practices for human resources in health. From the results obtained, it can be concluded that the educational intervention used in this study proved to have a positive impact, as it managed to increase knowledge about breast cancer prevention and control in the participating women.

Acknowledgements

The participants, caregivers and the hospital are thanked for their permission to participate in the project.

Annexes

Instrument

Questionnaire of risk perception and knowledge of breast cancer.

This questionnaire is part of the research project entitled Intervención educativa en orientación en orientación en riesgo de presentar cáncer de mama en mujeres, for which we request your participation by answering the questions that will be asked below.

The information obtained is confidential and private, in accordance with the provisions of the general health law on research, as the results obtained will be used only for research purposes. It is not necessary to write your name.

Read each question and answer what is asked. For multiple choice questions, please select ONE ANSWER only.

I. Personal data

1.-Age: _____ years

2.- Weight _____

3.- Size _____

4.-Imc _____

5- BMI classification.

1. Acceptably thin.
2. Normal.
3. Overweight.
4. Obese grade I.
5. Obese grade II

6.- Place of origin _____

7.- Which member of your family do you care for in this hospital? _____

8. Marital status

1. Married
2. Unmarried
- 3- Single
4. Widowed
- 5- Separated or divorced.

9.- Up to what grade of school did you study?

1. Primary school.
2. Secondary school.
3. Baccalaureate.
4. Bachelor's degree.
5. Master's degree.
6. Doctorate.
7. No studies.

10- Has children 1. Yes _____ 2. No _____

11.- Are you currently working? 1. Si _____ 2. No _____

12- What does he do?_____

13. How many hours do you work during the day?

1. 8 hrs.

2. 12 hrs.

3. Más de 12 hrs.

14.- What health insurance do you have?

1. IMSS

2. ISSSTE

3. INSABI.

4. SEMAR.

5. PRIVADO _____

II. General background

15.- How do you consider your current state of health?

1. Excellent
2. Good
3. Fair
4. Bad
5. Very bad.

16.- Edad de la primera menstruación _____

17- Number of days your menstrual period lasts _____

18- Age when menstruation ended _____

19.- Have you ever been pregnant? If yes, answer question 20, if no skip to question.

1. Yes
2. No

20.- Number of pregnancies. _____

21.- Have you had any breast problems?

1. Yes
2. No

22.- Have you had a breast ultrasound?

1. Yes
2. No

23.- Breasts are explored

1. Yes
2. Occasionally
3. No

24.- How often is breast screening done? _____

25.- At what time during the menstrual period is a breast examination performed?

1. Before
2. During
3. After 3.
4. I have never had it done

26.- Do you go for breast examination by a gynaecologist or health personnel?

1. By a gynaecologist.
2. By health personnel.
3. By both.
4. By neither.

27.- How often do you go for a breast examination?

1. Once a month
2. Every six months
3. Once a year
4. Never

III. Risk factors

28.- Do you consume alcoholic beverages?

1. Yes
2. No

29.- Do you smoke

1. Yes
2. No

30.- Do you currently use contraceptive pills?

1. Yes
2. No

IV. Perception of risk and awareness of the disease.

31- How confident do you feel that you will be able to have a mastography in the future?

1. A lot
2. Somewhat
3. A little
4. Nothing
5. I don't know.

32- How serious would it be for you to suffer from breast cancer?

1. Very serious
2. Serious
3. More or less serious
4. Not very serious
5. Not serious at all

33.- How risky do you think it would be to get breast cancer someday?

1. None
2. Little
3. Medium (more or less)
4. High or very high
5. I don't know.

34.- Do you think that, if you adopt preventive and caring behaviours, your chances of suffering from breast cancer at some point in your life are:

1. Very high
2. High
3. Regular
4. Low
5. Very low

35.- For me, having breast cancer would mean (choose the main one)

1. Death
2. Pain
3. Economic expense
4. Worry
5. Depression
6. Sadness
7. Fear
8. Other _____

36.- How worried do you feel about the likelihood of getting breast cancer in the future?

1. Very worried
2. Worried
3. Not worried at all

III. Knowledge about breast cancer

37.- Do you consider that you are aware of breast cancer?

1. Yes
2. No

38. Do you consider that you know about mastography?

1. Yes
2. No

39- Do you consider that you are aware of self-examination?

1. Yes
2. No

40.- The frequency with which mastography should be performed in women over 40 years of age should be. 1:

1. Every year
2. Every two years
3. Occasionally
4. None
5. Don't know

41.- Do you know what place does breast cancer occupy as a reason for death from cancer in women aged 15-54 in Mexico?

1. First
2. Fifth
3. Tenth
4. Don't know

42.- Which is the main reason for you to think about the possibility of having breast cancer? (choose only one)

1. Family history
2. Obesity
3. Smoking
4. Use of contraceptives 5
5. Age
6. I have no reason

43.- Of the following screening methods, which do you think is the best method?

1. Self-exploration
2. Ultrasound scan
3. Exploration by health personnel
4. Mastography
5. Don't know

44.- Of the following detection methods, which one would you do now?

1. Self-exploration
2. Ultrasound scan
3. Exploration by health personnel
4. Mastography
- 5.-None

45.- How can breast cancer be prevented?

1. By performing mastography and self-examination.
- 2.-Living a healthy life.
- 3.- Going for a medical check-up.
- 4.- Exercising
- 5.- All of the above
- 6.- None.

46.- At what age do you consider that you should begin the practice of self-examination?

1. 9 to 16 years old
2. 17 to 34 years old
3. From 34 years old onwards
4. Always
5. I don't know

47.- At what time of the menstrual cycle do you think self-examination should be carried out?

1. Before the menstrual period.
2. In the middle of the menstrual cycle
3. At the end of the menstrual period
4. Any time during the menstrual cycle
5. I don't know.

48.- From where did you acquire information about breast self-examination?

1. Medical professional
2. Family members
3. Friends
4. Media
5. Don't know

49.-Mention if you have heard information during the last year about prevention. Of breast cancer, and in what media did you see or hear about it?_____

50.- Has anyone in your family had breast cancer? If your answer is yes, go to question 51, if no or don't know, you have finished your questionnaire.

1. Yes
2. No
3. Don't know.

51- How was or is your relative with cancer related to you?____

Thank you very much for your attention and for answering the questionnaire.

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Instructions for Scientific, Technological and Innovation Publication

Abstract (In English, 150-200 words)

Text written in Times New Roman No.12, single space

Keywords (In English)

Indicate 3 keywords in Times New Roman and Bold No. 12

1 Introduction

Text in Times New Roman No.12, single space.

General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

Explanation of sections Chapter.

Development of headings and subheadings of the chapter with subsequent numbers

[Title No.12 in Times New Roman, single spaced and bold]

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Including graphs, figures and tables-Editable

In the Chapter content any graphic, table and figure should be editable formats that can change size, type and number of letter, for the purposes of edition, these must be high quality, not pixelated and should be noticeable even reducing image scale.

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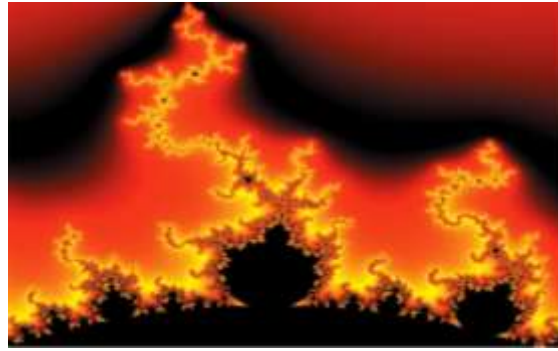
Table 1.1 Title

Variable	Descripción	Valor
V_V	Volumen de Venta	20000
P_V	Postura de venta	490.61
V_C	Volumen de Compra	20000
P_C	Postura de Compra	485.39
p^{Uh}	Precio último Hecho	491.61
V_o	Volumen Operado	1241979
P_u	Precio/Utilidad	0
p^{VL}	Precio/Valor Libro	0
U_a	Utilidad p/Acción	0
V^{La}	Valor Libro p/Acción	0

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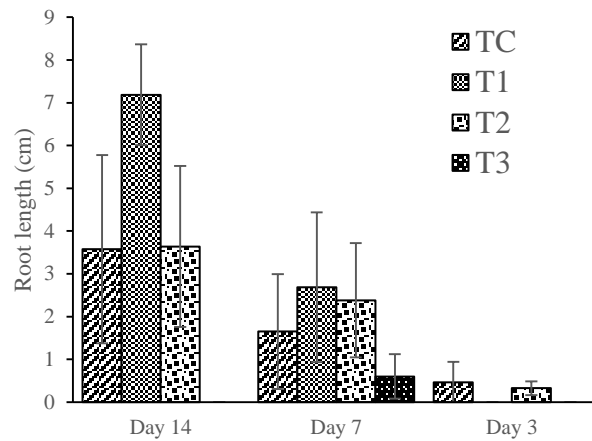
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Each chapter shall present separately in 3 folders: a) Figures, b) Charts and c) Tables in .JPG format, indicating the number and sequential Bold Title.

For the use of equations, noted as follows:

$$\int_{lim^{-1}}^{lim^1} = \int \frac{lim^1}{lim^{-1}} = \left[\frac{1(-1)}{lim} \right]^2 = \frac{(0)^2}{lim} = \sqrt{lim} = 0 = 0 \rightarrow \infty \quad (1)$$

Must be editable and number aligned on the right side.

Methodology

Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

Results

The results shall be by section of the Chapter.

Annexes

Tables and adequate sources

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Thanks

Indicate if they were financed by any institution, University or company.

Conclusions

Explain clearly the results and possibilities of improvement.

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Use APA system. Should not be numbered, nor with bullets, however if necessary numbering will be because reference or mention is made somewhere in the Chapter.

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