



## Article

# In the Shadows of Cancer. Leisure and Subjective Wellbeing of Breast and Ovarian Cancer Patients in Honduras, Nicaragua and Portugal

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**Abstract:** In contemporary societies, a significant proportion of women will be affected by breast or ovarian cancer over the course of their lives. Dealing with illness is known to impact profoundly on the general quality of life of women, but this assessment is usually made in clinical terms, and less attention is given to the social determinants of quality of life for cancer patients, and to the implications of cancer for their subjective wellbeing. In this article, we specifically discuss the impact of being engaged in a leisure activity for the subjective wellbeing of women experiencing breast or ovarian cancer. Based on an exploratory comparative study among Honduras, Nicaragua and Portugal, we analyze the influence of leisure engagement, country of residence, treatment and social support for the subjective wellbeing of women dealing with cancer, proposing a discussion on the intersections of wellbeing, leisure and illness. The research was supported by a survey applied to 128 women diagnosed with breast and ovarian cancer. Significant relationships were found amongst subjective wellbeing, leisure engagement, country and support from patients' associations. Results highlight the need to consider the effects of leisure among cancer patients, and the importance of institutionalized support to improve their quality of life.

**Keywords:** subjective wellbeing; health; cancer; leisure; Honduras; Nicaragua; Portugal



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## 1. Introduction

From diagnosis to treatment, and from treatment to recovery, cancer patients pass through a variety of physical and emotional stages with impact on their general quality of life and subjective wellbeing (hereafter, SWB). Emotional turmoil, low self-esteem, changes in relationships with others, anxiety, rage, depression, loss of subjective control, inactivity or loss of energy are some of the psychosocial implications pointed out by the literature as affecting women when dealing with cancer [1–4].

Other than bringing emotional burden, when cancer strikes, the body undergoes physical transformations related to the effects of medicine, surgery and other types of interventions. Physical obstacles add up to the already existing challenges faced by women living with cancer, bringing diverse consequences in their lives. Some women have to undergo mastectomy or breast reconstruction, often understood as organ mutilation, requiring a recovery period and adaptation to changes in the body image [5,6]. Cancer-related lymphedema, which is the swelling of the arm after surgery, also affects the quality of life of these women [7,8]. Lymphedema causes chronic pain, limited arm mobility, decrease in social functioning, challenges their body image and causes emotional distress, given that the shape of the arm may suffer significant changes [7,9]. All these alterations lead to a change in daily routines, often implying being away from work and from their normal activities, including the ones associated with leisure.

Even though significant medical advances have been observed in the past years regarding detection, diagnosis and treatment [10], there is still room for improvement regarding the SWB of individuals living and suffering with this disease.

SWB is commonly defined as “people’s emotional and cognitive evaluations of their lives” [11], and some research has shown that there is a link between being involved in leisure activities and the general levels of SWB [12–14]. Some oncological studies have explored this research line [2,10]. But more evidence is needed concerning the particular effects of leisure during cancer treatment and recovery, and possible institutional and contextual variations.

In this article, we explore the interconnections of wellbeing, leisure and illness, by discussing the results of an exploratory comparative research on the impact of leisure activities for the SWB of breast and ovarian cancer patients in Honduras, Nicaragua and Portugal. The study was developed in two phases: an exploratory quantitative analysis supported by a survey questionnaire, and a social intervention case study based in the implementation of a productive leisure activity amongst women during cancer treatment. In this article, we discuss the results of the first phase of the research.

We start by briefly exposing the state-of-the-science and discussing the conceptualization of leisure and SWB, the specific challenges of cancer, the impact of leisure, and by presenting the three country cases under analysis. The following sections present the main findings and discussion. We then present the methods and data used and finalize with conclusions and routes for future research.

### 1.1. Wellbeing, Leisure and Illness

#### 1.1.1. Conceptualizing Leisure and SWB

Following the multiple approaches and research disciplines involved in contributing to the study of SWB [15], research been able to pinpoint several life domains that can exert a causal influence on it. One of these domains, of specific interest to this paper, is leisure. According to the literature, leisure is defined as anything and everything people voluntarily do in their spare time, which is perceived as joyful or pleasurable by the person who is performing the activity [13]. Concretely, people occupy their free time in activities that endorse them satisfaction. These activities can be group-based or carried out at an individual level. They can also be highly organized or occur spontaneously. Some examples include music, creative arts, sports, reading, writing, dancing and other innumerable types of recreation. In spite of leisure being a universal phenomenon present in every culture around the world, a clear and universal definition has resulted problematic because this word does not exist in all languages [16]. Most of the scientific research conducted in the field of leisure focuses on western populations and for this reason developing an operational concept has resulted in a challenging endeavor [16]. The understanding and practice of this phenomenon is common among lay people. Individuals can relate to having free time and doing activities to fill up their spare time. However, the lack of a shared definition is indeed a challenge to the research community when it comes to comparing countries or societies [16], or simply conducting research in the light of cultural diversities.

Engaging in leisure activities has an impact in the emotional and cognitive appraisals individuals make of their own lives [11]. These emotional and cognitive judgements is what researchers have consented to refer to as SWB [17], even though a standard definition is still debated due to the various factors that should be considered to have a grasp of what the concept truly represents. Similar to the concept of leisure, the ongoing discussion of conceptualizing SWB stems, in part, from cultural diversity. Happiness is experienced differently around the world, and it is shaped by personal perceptions that are affected by factors like culture and context [18]. As so, values, norms, customs and any other type of cultural practices must be acknowledged as influential means in the individual experience and perception of happiness.

The main components of SWB are measures of life satisfaction, positive affect and negative affect, expressed through moods or emotions [17,19]. In this line of thought, as a

counterproposal to a tendency of pathology of personality, SWB is considered the presence of happiness, peace, fulfilment and achievement of life satisfaction [11] through multiple factors. The cognitive reflections that people make of their own lives are classified in various domains that have an impact in SWB, such as home, social relationships, work, family, health or leisure [20]. As something that can be enhanced and attained through the development of different life domains, for the purpose of this paper, we adopted the bottom-up approaches of SWB, which states that high levels of SWB are achieved through pleasant inputs and by the collection of positive life experiences [17]. SWB will be explored considering leisure activity engagement, and the potential this has to positively influence the overall wellbeing of individuals.

Referring to the subjective approach of leisure, the wide range of experiences that can be carried out during people's spare time are chosen freely and they are motivated intrinsically by the interests of each person [12]. In this view, they are to be considered subjective since they are determined by individual preferences. What for someone is seen as a hobby and joyful activity, for another person can represent work and therefore not an option for recreational matters. Leisure activities are universal. Humans participate in diverse activities during their spare time. Nevertheless, it is the individual who characterizes them in a unique way and gives them meaning [13]. For instance, even though music is universal, the type of music listened to or created by people around the globe is different. Dancing is also a common activity, but the way people dance and the music they dance to diverges. Similarly with the sports played in different societies and the level of interest one can have in any other kind of hobby. What is clear and relevant for this research is the fact that human beings dedicate part of their leisure time to voluntarily involve themselves in activities that until now have proven to be beneficial to their SWB.

#### 1.1.2. The Undeniable Challenges of Cancer

Since the initial stages of cancer such as diagnosis and further steps of treatment, patients face multiple difficulties. No one lives a life planning to receive an illness diagnosis. This usually comes unexpectedly and therefore no one is ever prepared for such an event. It is evident that women touched by breast and ovarian cancer experience grief in terms of cognitive and emotional load [3]), as well as challenges to their physical integrity. During this process, all the losses women go through go beyond the side effects of treatment or interventions. In the psychological sphere of their lives, women suffering from cancer frequently experience commotion. It is not uncommon for them to have self-esteem problems, alterations in their relationships with others [1]), or the feeling of living an empty present due to the adjustments they have to do in their daily lives. Some women are not able to carry out their regular routines [3], and this may defy their roles in society. In the shadow of cancer, uncertainty becomes a characteristic of the expectations about the future. When one confronts a reality that threatens everything that was once taken-for-granted, self-identity is put at stake [2,3]). Individuals with cancer must adjust to a life with illness-related limitations. Recovery times can be extensive, treatment can also be long-lasting and even when finally, being cancer-free no one can assure this enduring sickness will not be recurrent. For this and many other reasons, women describe their illness as a deep loss of subjective control over their lives [3].

Part of the emotional burden that follows cancer diagnosis and treatment ranges from anxiety and rage, to chronic and more serious affections, such as developing depression symptoms [2] or other psychiatric disorders. When a woman is facing the battle of cancer, even the ability to cope with daily stressors can become a difficult task. Day to day activities that these women carried out before living with cancer can be threatened and even abandoned. Some reasons why women with cancer withdraw from these daily routine activities are lack of energy, loss of confidence or because they still have not found a way to cope with the changes their life requires for addressing illness [2].

When cancer is diagnosed, the body is challenged by medicines, surgery and other types of interventions. Physical challenges add to the already existing emotional burden

faced by women affected by cancer. As an example, the body image that they have can be distorted due to organ mutilating interventions such as undergoing a mastectomy [6] or lymphedema, and its consequences, like chronic pain, heaviness, numbness or reduced arm mobility that decreases the regular social functioning of women with cancer [7,9]. All these negative effects mentioned affect the quality of life of individuals that endure the consequences of cancer treatment [8].

### 1.1.3. SWB of Women in Light of Illness and the Benefits of Leisure Activities

The relationships between SWB and health have been widely studied and debated. There is a consistent body of literature pointing out the positive links between SWB and good health. Kushlev et al. [21], in a controlled trial of non-clinical adults, found that improvements in SWB are positively associated with self-reported good physical health. In a review of 150 studies, Howell, Kern and Lyubomirsky [22] gave evidence of the positive effects of SWB in short and long-term health outcomes, as well as disease and symptom control, underlining the impact of SWB for immune system response and pain tolerance. In a similar study, Chida and Steptoe [23] reviewed 70 studies on the relationship between well-being and mortality, and concluded that positive psychological well-being has a favorable effect on survival in both healthy and ill populations. Lamers et al. [24] came to similar conclusions, showing, through a meta-analysis of 17 studies, that SWB is associated with better recovery and survival in physical ill patients.

Leisure engagement is one possible way of boosting the overall wellbeing of individuals, and some studies have highlighted this relationship [12,13]. Yet, there is still a lack of academic literature when it comes to relating the benefits of leisure involvement and the SWB of cancer patients, and specifically of breast and ovarian cancer populations.

Technological and medical advances are in a state-of-the-science as far as detection, diagnosis and treatment is concerned [10]. Although these advances have indeed been a boon in understanding the illness itself and finding a cure, efforts to manage the overall wellbeing of individuals living and suffering with this disease have not kept pace. Nevertheless, evidence shows that leisure engagement can serve as an alternative strategy to promote the SWB of cancer patients. Art therapy, for instance, has proven to be helpful in the reduction of negative effects of cancer such as pain, insomnia, loss of social roles, activity restriction and altered social relationships [25–29]. Women that are involved in visual art therapy refer that this activity gives them the possibility to express their feelings in a symbolical way, increase their self-worth, define themselves beyond the role of being a cancer victim and regain the feelings of achievement and capacity [3]. Textile art is another type of leisure activity that has demonstrated to be a resource for illness transformation [2,13,30]. Overall, leisure involvement can bring innumerable benefits to women affected by cancer. These benefits can range from finding a meaning in life, coping with illness, emotional expression, achieving social support [2,3], to the fulfilment of basic psychological needs such as increasing autonomy, developing competence and encouraging the capacity to relate to other women with similar challenges [31]. Additionally, studies also indicate positive results in raising the quality of life by improving health through leisure engagement [20]. Considering that breast cancer is one of the most common causes of death worldwide [32], alternative interventions designed to promote women's SWB through leisure engagement are called for.

As stated previously, leisure activities play a crucial role in the SWB of women struggling from breast and ovarian cancer. However, special attention should be given to these types of activities carried out in a group-based setting since studies put forward its multiple advantages for oncological patients [33]. It is demonstrated that women that perceive having a solid social support network, which could be achieved through leisure engagement, show higher levels of purpose in life and this predicts an increase in the levels of SWB [34]. Belonging to a group whose members have lived similar illness-related challenges can offer the opportunity of a safe space to express freely and foster feelings of relatedness, empathy and courage. According to Reynolds and Prior [14], through leisure involvement

cancer patients can express the grief that stems from their illness anguish, and this also provides a chance to distract themselves from intrusive thoughts. As social beings, humans need to meet their sense of belonging and know they can have the power to transcend their experience and benefit others. It is therefore essential for individuals to meet their psychosocial needs of peer-to-peer relationships, feelings of worthiness and capacity of influencing the lives of others in a positive way. Following similar goals and engaging in collective leisure activities as an occupation can give this sense of belonging to a safe and supportive environment and promote the psychosocial needs mentioned above.

Most studies addressing the relationships between leisure and well-being tend to focus on its positive effects, nevertheless, some research, notable on sports and stress release, has increasingly pointing out possible negative impacts of leisure, such as anxiety, tension or constraint [35]. In the specific case of women with breast and ovarian cancer, considering the effects that some cancer treatments have on the general well-being of patients [8], one can hypothesize that depending on the nature of the activities, leisure can put forward some states, feelings and experiences, such as energy loss, tension, stress or frustration.

### *1.2. The Institutional Context of Illness: The Cases of Honduras, Nicaragua and Portugal*

In 2015, Diener and Tay's [36] analysis gave Honduras, Nicaragua and Portugal approximate scores regarding SWB (scores 71.4, 72.9, 67.7, respectively). However, these countries diverged significantly regarding the material dimension of the index (scores 43.3, 47, 74.4, respectively), as well as the healthy environment dimension (scores 66.7, 72.1 and 75.7, respectively). Important developments regarding the objective and subjective situations of these countries have occurred since this study. Honduras has seen the aggravation of the socioeconomic situation after the political instability of 2017. Nicaragua is presently facing one of the most serious socio-political crises in its history. Portugal, on the other hand, has seen some social and economic release after years of financial adjustments due to the world crisis. In addition, the worldwide pandemic caused by COVID-19 affected the three countries, although few is known, so far, on country variations regarding its effects. New inputs are therefore permanently necessary to move knowledge further.

Several contributions have been made to the discussion of the relationship between national contexts and SWB. Diener, Oishi and Lucas [37] have notably underlined the characteristics of the societies high in SWB, stressing the relevance of economic development, rule of law, lower corruption, effective governments, taxation, social policy, political freedoms, employment, environment and health. Healthier societies are found to be happier and show higher levels of life satisfaction, but this relationship is highly dependent on the type, scope and extent of healthcare coverage. Countries with more generous and universal health care tend to report higher levels of SWB [38], and this surely has implications for the SWB of individuals dealing with illness.

Public healthcare systems differ around the world. Latin American countries, for instance, have been facing a variety of challenges over the last decades regarding funding, coverage and quality of assistance. Considering the dimensions of welfare systems in industrialized regions such as Europe or North America, some authors have claimed that Latin American has not yet achieved a truly welfare system [39]. Since the 1980s, government expenditures have been reduced, public goods privatized and the States ceased to finance social security [40]. Thus, social expenditures in Latin-America are low and access to basic medical needs is restricted. A large portion of the population in Latin-America has access to poor quality healthcare rather than to a dignifying one [40].

In the specific cases of Honduras and Nicaragua, recent socioeconomic developments and political instability have aggravated the functioning of already fragile healthcare systems. According to the international ranking of the World Health Organization [41], who ranked 191 countries, Honduras and Nicaragua appeared as poor performers in positions 131 and 71, respectively. Rankings from other institutions, such as the Legatum Prosperity Index [42], put Nicaragua in the 78th position, and Honduras in the 90th position of the health pillar, in a total of 167 countries.

The European reality is fairly different, with generally higher levels of public expenditure and investment in healthcare. However, within Europe, the relative situation of countries diverges in terms of type of coverage, extent and performance [43] Portugal represents one of the few countries considered to have a truly public healthcare system in Europe, where the State is the main actor in all its dimensions (regulation, financing and service provision), hospitals are owned by the State and physicians are salaried primarily in public facilities. The country figures as a national health service under Böhm et al. [43] categorization, and it ranked 12th in the WHO analysis of performance, above countries like Denmark, Sweden or the United Kingdom, and 29th in the health pillar of the prosperity index [42]. As for cancer treatment, although incidence tends to follow global trends, the quality of care in Portugal is generally high and mortality rates, namely regarding breast cancer, have been decreasing overtime [32].

The comparison of Latin America and Europe, and more precisely of Honduras and Nicaragua, and Portugal is thus an opportunity to develop knowledge further in terms of the experiences of women living with cancer, but also to potentially discuss policy and community developments and inform social policy in the future.

Less information is available on the patterns of leisure distribution in Latin-America, and more precisely on its comparison to Europe. The general strains over the welfare systems in Honduras and Nicaragua, together with the present socio-political situation, leads us to hypothesize, however, that having the time and means to undertake a recreational activity is more difficult for the inhabitants of these countries, than it would be in a European country like Portugal, claimed to be in a period of potential socioeconomic recovery.

The questions addressed in the previous section suggest some hypotheses that may be tested to inform the discussion we aim to promote in this article:

**Hypothesis 1 (H1).** *Being engaged in a leisure activity has a positive implication in the SWB of women dealing with cancer.*

**Hypothesis 2 (H2).** *The general levels of SWB vary according to the country of residence/treatment of women living with cancer.*

**Hypothesis 3 (H3).** *The combined effect of being engaged in a leisure activity and country of residence/treatment influence the level of SWB.*

**Hypothesis 4 (H4).** *Social support has a positive implication in the SWB of women living with cancer.*

**Hypothesis 5 (H5).** *The combined effect of leisure and social support impact the level of SWB.*

## 2. Results

### 2.1. Leisure Engagement during Cancer Treatment

Being engaged in a leisure activity was part of the daily life of most of the respondents in the sample. In total, 65.9% of respondents declared to be involved in a leisure activity at the time of the survey, with Portuguese women presenting the higher percentage of leisure engagement (78.8%), followed by Honduras and Nicaragua, with similar proportions (56% and 55.3% respectively). Reading and writing were the most common leisure activities in all three countries. The second most common activity was textile arts in Portugal, and sports in Nicaragua. In Honduras, textile arts and sports showed the same share of engagement.

Most respondents (86.8%) considered positive being engaged in leisure activities during cancer treatment and recovery, and small variations were found between countries. Developing new talents, making new friends, increasing self-esteem and avoiding overthinking about illness were the most common benefits mentioned (Figure 1).

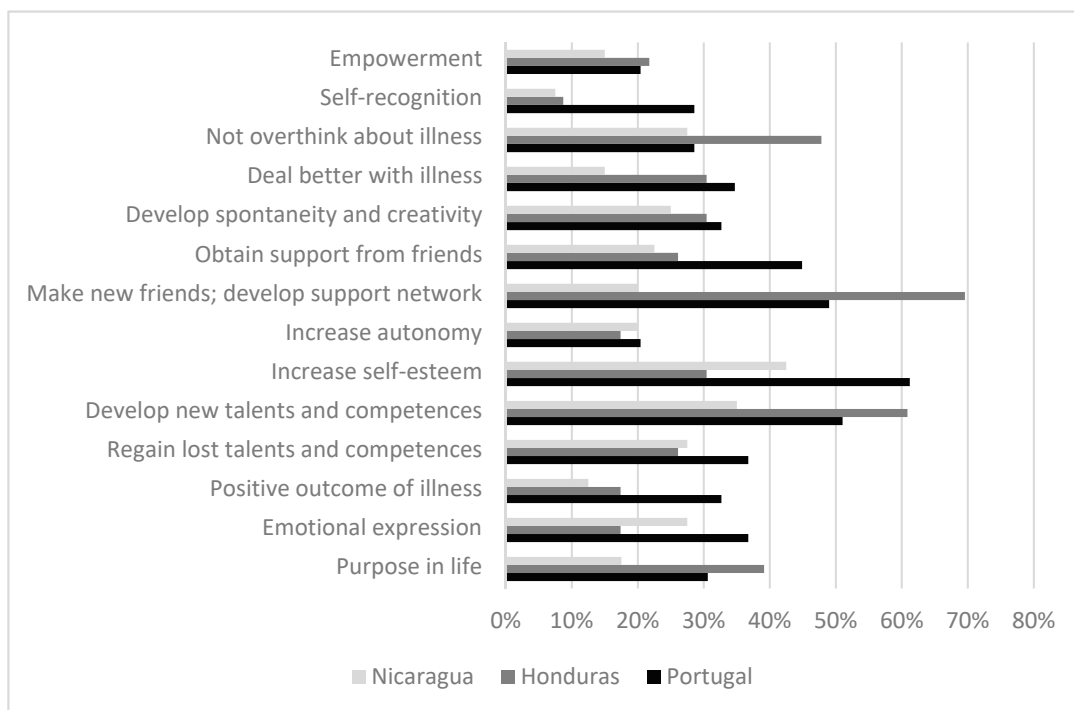


Figure 1. Positive outcomes of leisure activities, by country.

Negative outcomes of being engaged in leisure activity were also identified by 41.1% of the respondents. In the three countries, energy loss was the negative outcome more indicated, followed by tension and discomfort were the negative impacts more strongly identified, without relevant differences between countries (Figure 2).

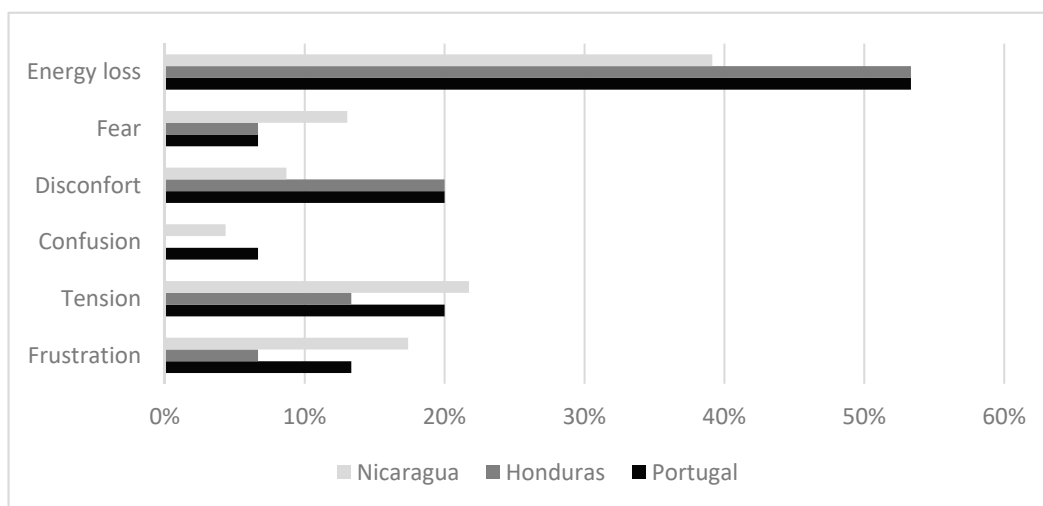
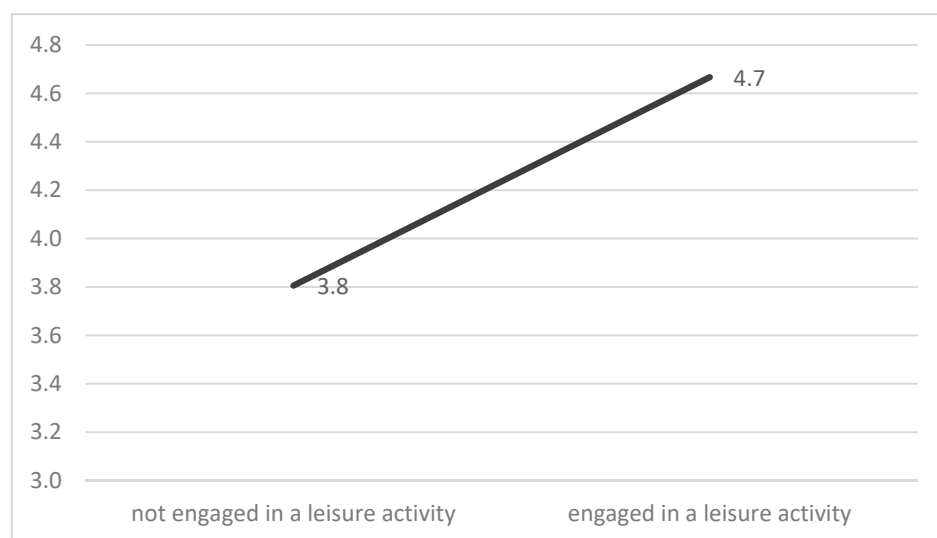


Figure 2. Negative outcomes of leisure activities, by country.

2.2. Leisure Engagement and SWB during Cancer Treatment

A significant relationship was found between being engaged in a leisure activity during cancer treatment and the general levels of SWB ( $t(97) = 2.051, p = 0.043, p < 0.05$ ), with women involved in a leisure activity showing higher levels of SWB (Figure 3). Hypothesis 1 is, therefore, confirmed.



**Figure 3.** SWB, by engagement in leisure activity.

A significant relationship was also found between the country and the level of SWB ( $F(2) = 8.419, p = 0.000, p < 0.001$ ), thus confirming hypothesis 2. Honduras presented the highest level of SWB (5 score), followed by Portugal (4.8 score) and Nicaragua (3.2 score). Post hoc tests show differences between Portugal and Nicaragua ( $p = 0.005, p < 0.05$ ), and Honduras and Nicaragua ( $p = 0.018, p < 0.05$ ), without significant differences between Portugal and Honduras.

However, the combined effect of country and being engaged in a leisure activity did not show to have a significant impact on SWB ( $F(2) = 65.603, p = 3.56$ ). Consequently, we did not find evidence to confirm hypothesis 3.

### 2.3. Leisure Engagement, Social Support and SWB during Cancer Treatment

Friends (68.9%), siblings (62.1%) and community (56%) were the most important sources of support for women living with cancer, but some variation was found between countries. In Portugal, main sources of support come from the community (79.5%), the associations for cancer patients (77.8%) and friends (74.4%). In Honduras, support comes mainly from siblings (78.9%), children (77.2%) and friends (64.7%). In Nicaragua, friends (65.3%), partner (62.5%) and children (56.8%) are the main sources of support.

No significant differences were found between general levels of social support and SWB ( $F(2) = 1.116, p = 0.332$ ). However, a significant relationship was found for the combined effect of leisure and support from associations for cancer patients ( $F(11) = 2.995, p = 0.025, p < 0.05$ ). Women engaged in leisure activities and receiving the support of associations for cancer patients show a higher score of SWB (5.02), than those who were not engaged in a leisure activity (3 score), and than those who were engaged in leisure, but did not receive support from an association (3.44 score). Hypotheses 4 and 5 are partially confirmed. For women living with cancer, the social support is significant only when coming from associations dealing with cancer patients.

### 2.4. SWB, Type of Cancer, Cancer Stage, Education and Occupation

No significant relationships were found between SWB and type of cancer ( $F(2) = 0.338, p = 7.14$ ), nor between SWB and cancer stage ( $F(2) = 1.943, p = 1.29$ ).

The educational level of the patients did not show any significant effect of the levels of SWB ( $F(6) = 0.906, p = 0.494$ ). The same holds true for occupation ( $F(6) = 4.836, p = 0.343$ ).

## 3. Discussion

In order to discuss the relationship between leisure, SWB and illness, we started our analysis by setting the patterns of leisure engagement among women with cancer in the



three countries under analysis. Although the majority of the respondents are involved in some type of leisure activity, in Portugal, the percentage of engagement is relatively higher, when compared to that of Honduras and Nicaragua, which show similar levels. This confirms our assumption that the socio-political and economic circumstances of these two countries is impacting the patterns of leisure engagement, but more research is needed on the concrete implications of these external factors on leisure practices.

Despite the different levels of engagement, the most common leisure activity was the same in all three countries. Reading and writing are not only “democratic” activities, as they are easily accessible to women undergoing cancer treatment or under recovery, involving low levels of energy use and low physical effort. They also work as ways of distracting and releasing the thoughts about illness (see, for instance Moyer [44], for different types of leisure reading outcomes).

No relevant differences were found between countries regarding the identification of positive and negative outcomes of being engaged in a leisure activity. Developing new talents, making new friends, increase self-esteem and avoiding thinking about illness were considered positive effects of leisure. If the first three aspects could have been identified by any person engaged in leisure, the last one is specific to women living with illness and, in that sense, configure a particular dimension of positive leisure impacts, which has been also found in previous studies [2,3]. The same holds true for the main negative outcome of leisure identified by our respondents: energy loss. Cancer treatment entails physical and emotional strains widely signaled in the literature. When considering the relationship between leisure and illness, more concretely cancer, it is thus necessary to contemplate the negative impact that some leisure activities can bring to the general wellbeing of patients. Following previous research, our study shows a significant relationship between being engaged in a leisure activity and the SWB of women with cancer. Those who have frequent leisure activities report higher levels of SWB than those who are not. However, moving beyond this evidence, it is important to acknowledge that, for individuals with illness, and specifically for women with cancer, the negative impacts of leisure reconfigure the nature and patterns of leisure distribution, helping to understand, for instance, the importance of low energy consuming activities, such as reading or writing.

We also found a significant relationship between the country of residence and treatment and the general levels of SWB of women living with cancer, with Nicaragua showing significant differences regarding Portugal and Honduras. Following Diener et al. [37] systematization of the characteristics of the societies high in SWB, namely regarding strength of rule of law and human rights [45], political freedoms, low levels of corruption, efficient and effective governments [46], and good health [38], we would expect to see Portugal distinguishing from Latin American countries, especially if we consider the current unstable social situation of these two countries. However, Honduran women in our study reported the highest levels of SWB, grouping with Portugal and differentiating from Nicaragua. Given the small size of the sample in Honduras, we are cautious with advancing possible explanations.

Given the different patterns of leisure distribution in the three countries, with Portugal having higher levels of engagement than Honduras and Nicaragua, and the significant impact of the country, with Nicaragua having significant lower levels of SWB than Portugal and Honduras, we were hoping to find a significant combined effect of leisure and country for wellbeing. However, no significant relationships were found. This is an aspect that will be further explored in future research.

An important dimension of this study was the analysis of social support and its effects on wellbeing during cancer treatment and recovery. Contradicting previous evidence on the impact of social support for wellbeing during illness [34,47] we did not find a significant relationship between general levels of support and wellbeing. This may be related to questions of measurement and conceptualization of social support, notably discussed by Pahl [48]. Research has shown, for instance, that functional social support, measured with indicators as companionships or assistance, is more strongly associated

with well-being than quantitative indicators such as frequency of contacts [49]. In any case, a significant relationship was found for the combined effect of the specific support given from associations dealing with cancer patients and being engaged in a leisure activity. This finding allows us, primarily, to distinguish between institutionalized forms of support, such as the ones given by organizations who, by mission and experience, know how to address the specific needs of women living with cancer, and other forms of support, namely the one given by family, friends, or medical staff. Institutional forms of support prove to have real impact in general wellbeing. Secondly, this result highlights the combination of leisure and institutionalized support as an effective tool for increasing the SWB of women living with cancer. This encourages the development of intervention strategies, such as the provision of leisure activities, namely group activities, within the context of organizations dealing with cancer patients.

In this matter, it is important to denote a different pattern of social support between Latin America countries and Portugal. In Honduras and Nicaragua, main sources of support come from family members, while in Portugal these are found in the community, patient's associations and friends. Portuguese women are thus getting more support from the source that impacts significantly in general wellbeing levels. Other independent variables not considered in our study, namely religion, could add to this discussion. Analyzing possible country variations regarding religion practice and the impact of religion in society, could be useful for a comprehensive understanding of the well-being of cancer patients.

Education, occupation, type of cancer and cancer stage did not present significant effects on the general levels of SWB. This result will also be further explored in future research.

#### 4. Materials and Methods

In this research, we have applied an online questionnaire to women over 21 years of age, with a histological diagnosis of breast or ovarian cancer, residents and being treated in Honduras, Nicaragua and Portugal. The questionnaire was online from January to May 2018, through a public web link. Potential respondents were reached by chain-referring through associations and organizations supporting women with cancer, hospitals and health institutions. The questionnaire link was also made available in social media groups of breast and ovarian cancer patients. Participation was voluntary and without any type of remuneration or reward.

The objective of the questionnaire was to explore the relationships and interconnections between SWB, leisure engagement and cancer, and to inform the second phase of research, that would consist in a social intervention case study with women during cancer treatment. Questions were divided into seven categories supported by evidence-based literature: (1) socio-demographic characteristics; (2) work domain; (3) medical information; (4) medical supplies; (5) leisure domain; (6) social support; (7) SWB. These last three concepts were measured as shown in Table 1.

##### 4.1. Procedures

To test the hypothesis defined above, a set of statistical procedures were applied. After the descriptive analysis of the survey results, which included the analysis of frequencies and crosstabs, the adequate inferential analysis was run. To test the relationship between leisure engagement and SWB, a t-test was undertaken. One-way and two-way ANOVA were performed to test the relationship between SWB and country; SWB, leisure and country; SWB and social support; and SWB, leisure and social support. Other tests and statistical procedures without significant results were also performed. This includes testing for the effects of education, occupation, type of cancer and stage of cancer.

**Table 1.** Measurement of main variables.

Variable	Measurement/Question	Response Options
SWB	Diener's satisfaction with life scale: In most ways my life is close to my ideal. The conditions of my life are excellent. I am satisfied with my life. So far, I have gotten the important things I want in life. If I could live my life over, I would change almost nothing.	Likert scale: 1. Strongly disagree 7. Strongly agree
Leisure engagement	Do you have any hobbies? If yes, please indicate which.	(1) Sports (2) Arts and crafts (3) Painting/coloring/drawing (4) Textile arts (quilting, sewing, crocheting) (5) Dancing/singing/playing an instrument (6) Sculpting (7) Reading/writing (8) Photography (9) Other—which
Outcomes of leisure activities	What kind of effect do you think leisure activities can have on you?	(1) Negative (2) Positive (3) Both positive and negative (4) No effect
	Which benefits do you think you can get from participating in a leisure activity?	(1) Purpose in life (2) Emotional expression and relief (3) Finding a meaning to cancer illness/being able to get something positive out of it (4) Regaining talents and skills (5) Developing new talents and skills (6) Self-esteem (7) Autonomy (8) Make new friends/Social network (9) Social support (10) Develop spontaneity and creativity (11) Cope with illness (12) Help me let go of cancer-related thoughts (13) Self-exploration (14) Empowerment (15) None
	Which negative effects do you think you can get from participating in a leisure activity?	(1) Frustration (2) Tension and anxiety (3) Confusion (4) Discomfort (5) Sadness (6) Fear (7) Loss of energy.
Social support	Please rate from 1 to 7 each of the following categories in terms of being your source of support during your illness: (1) Partner (2) Children (3) Parents (4) Siblings (5) Friends (6) Medical staff (7) Community (8) Associations for cancer patients (9) Psychologist or therapist (10) Other—which.	Likert scale: 1. Least important source of support-7. Most important source of support.

#### 4.2. Sample

The total number of participants in this study was 128. Out of this sample, 53 were residing and being treated in Portugal at the time of the survey, 25 in Honduras and 48 in Nicaragua. The strategies adopted to reach participants (i.e., the dissemination of the survey web link through associations, hospitals, health institutions and social media groups), without a fixed list of contacts, prevented the control of the exact number of women contacted to fill in the questionnaire, and therefore the calculation of a reliable response rate was not possible.

As shown in Table 2, and partially due to the online nature of the survey, which is known to restrict sampling to respondents with higher levels of education, the vast majority of women in the sample are highly educated. Most respondents in Honduras were housewives, contrasting with the low percentages of Portugal and Nicaragua. In these two countries, most of the participant's occupations fall into the "professional's" category of the International Standard Classification of Occupations [50]. Honduras, distinctively, shows that the majority of its participants belong to the "services and sales workers" group of this classification even though a 33% of the sample is professional. This study reached in majority the upper level of these three societies as 38% of the total sample was "professional", 24% belonged to "services and sales workers", 11% were under the "technicians and associates" group and less than 1% of the sample was grouped into "clerical support workers" and "plant and machine operators". Elementary occupations were not represented in our sample (Table 2).

Regarding family composition, the predominant type of domestic situation in Portugal and Honduras was being in a couple with children and in Nicaragua, being in an extended household with kinship.

**Table 2.** Characterization of the sample.

Themes	Categories	Portugal	Honduras	Nicaragua
		(%)		
Education	Basic	24.5	41.7	25
	Secondary	20.8	20.8	12.5
	Bachelor	35.8	37.5	39.6
	Master/doctoral	17	-	22.9
	Other	1.9	-	-
Occupation	Managers	0	-	-
	Professionals	38.3	33.3	56.8
	Technicians and associate professionals	14.9	16.7	6.8
	Clerical support workers	2.1	-	-
	Services and sales workers	17	38.9	36.4
	Craft and related trade workers	2.1	-	-
	Plant machine operators and assemblers	2.1	11.1	-
	Housewives	4	44	6
	Retired	14.9	-	-
	Unemployed	8.5	-	-

Table 2. Cont.

Themes	Categories	Portugal	Honduras	Nicaragua
		(% )		
Marital Status	Single	11.8	40	23.4
	Married/cohabitation	66.7	48	36.2
	Divorced/separated	9.8	4	25.5
	Widow	11.8	8	10.6
	Relationship with no cohabitation	-	-	4.3
Family Composition	One person household	13.2	8.0	10.6
	Couple with children	43.4	32	25.5
	Couple with no children	17	8%	4.3
	Adult with children	7.5	12	8.5
	Multi-generations	1.9	2	6
	Extended family with kinship	15.1	20	38.3
	Extended household no kinship	1.9	-	6.4

## 5. Conclusions

In this article, we were able to test a set of hypotheses regarding the relationships between leisure, SWB and illness, concretely, breast and ovarian cancer. Following our analysis, it is possible to argue that leisure activities might be a useful strategy to promote SWB. It is, however, important to point out that leisure activities might also imply negative effects for women living with cancer, especially those connected with self-energy consumption. This underlines the need to address the specific features of leisure when associated with illness and wellbeing. With parallel significance is the evidence showing that women find most support in peers, siblings, community, or friends. However, the significant effect of social support for SWB was found in the support given by associations dealing with cancer patients, in combination with the engagement in leisure activities. This gives emphasis to the importance of the combination of institutionalized forms of support and leisure.

In our study, we have explored other sources of explanation of SWB associated with leisure in women dealing with cancer. It was interesting to note that education, occupation, cancer stage or type of cancer did not show any significant effect over wellbeing in our sample. In addition, we found that, contradicting what happens in Honduras and Nicaragua, in Portugal family does not play a special role in supporting these women, at least in their own perspectives. These findings need further and future exploration to be fully understood.

Our sample shows some limitations in terms of size and representativeness. Although recognizing the difficulty of establishing a truly representative sample for women living with breast and ovarian cancer, while simultaneously obtaining an acceptable number of responses, this question should be considered for future research. In addition, as mentioned, including other independent variables, such as religion, would be essential for a deeper understanding of the well-being of breast and ovarian cancer patients.

Our results are part of broader research which includes a qualitative approach focused on the implementation of a social intervention case study with women in cancer treatment. Results of this qualitative dimension will be presented in detail in the next stage of research.

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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data is available on the request from the corresponding author. The data is not publicly available due to its usage in the ongoing study.

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