

A comparison of quality of life and resilience in menopausal women with and without a history of gynaecological cancer

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ABSTRACT

Background and objectives: Resilience is a dynamic process that implies positive adaptation to adversity, and it is tested in stressful situations. In this study we compared resilience and menopause-related quality of life in women with and without a history of gynaecological cancer.

Methods: A cross-sectional study was conducted with a total of 293 participants, all of them menopausal women: 80 cancer survivors and 213 without a history of cancer. Participants completed the 14-item Wagnild and Young Resilience Scale (WYRS-14) and the 16-item short form Cervantes (Cervantes-SF-16) questionnaire (on which a lower score indicates a higher menopause-related quality of life), and sociodemographic data were collected.

Results: Resilience was significantly higher in the cancer survivors than in the menopausal women without a history of cancer: their total WYRS-14 scores were 86 points [72.25–90.00] and 80 points [69.80–88], respectively. Quality of life for cancer survivors was significantly worse than for women without a history of cancer: their total Cervantes-SF-16 scores were 45.01 [27.19–58.34] and 32.37 [20.00–44.80], respectively. Among the cancer survivors, women with a high resilience score had a better quality of life than those with a low resilience score: the groups' respective scores on the Cervantes-SF-16 total score were 35.98 [25.84–53.00] and 64.59 [51.81–76.68].

Conclusions: A history of cancer significantly affected women's menopause-related quality of life. Cancer had an impact on resilience. Highly resilient menopausal women with a history of gynaecological cancer had a better menopause-related quality of life than less resilient women with a history of gynaecological cancer.

1. Introduction

Resilience can be defined as the capacity of an individual, or group of individuals, to overcome adversity [1]. Multiple organizations have highlighted its usefulness in the improvement of health and quality of life, especially in vulnerable groups. Identification of its predictive factors, personal and environmental, would be beneficial for any health system [2,3].

Menopause has a social, emotional and physical negative influence on the life of millions of women around the world and it has an impact on work ability [4]. Recent investigations have shown there is an association between resilience and menopause, with some authors indicating that high resilience reduces the impact of climacteric symptoms [5–7].

Cancer is the second most common cause of mortality in the world, responsible for 8.8 million deaths in the year 2015. Around 14.1 million new cases were diagnosed in 2012, which is the last year with official data from WHO's GLOBOCAN project [8]. By the year 2035 there are expected to be 24 million new cases worldwide. In Spain there were 215,535 new cases in 2012 and an estimated 228,482 new cases in 2017, and there are expected to be 315,413 in 2035 [9]. Among Spanish women, the most frequently diagnosed cancers were breast, colon, uterus, lung, ovary, stomach, non-Hodgkin lymphoma, melanoma and cervix. According to the Spanish Statistics National Institute, there were 8912 deaths caused by gynaecological cancer, including breast cancer [10].

Some authors have pointed out that resilience is an important issue for adult cancer care [11], as it can help patients to deal with the

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adversity posed by diagnosis, treatment, symptoms and cancer-related stress. A few studies have suggested that menopausal symptoms in cancer survivors are worse than in non-cancer patients [12]. Nevertheless, there are no investigations of resilience, menopause and cancer combined.

The aims of the present investigation are to analyse the impact of cancer on the resilience of menopausal women and its effect on quality of life. We also aim to investigate whether the severity of menopausal symptoms changes according to resilience scores in cancer survivors. All women completed the Wagnild and Young 14 item Resilience Scale (WYRS-14), the Cervantes 16-item short form (Cervantes-SF-16), which assesses quality of life during menopause, and a sociodemographic form.

2. Materials and methods

2.1. Study design and participants

A cross-sectional study was carried out from November 2016 to May 2018, with 293 menopausal women aged between 40 and 65, of whom 80 had a history of gynaecological cancer and 213 had no history of cancer. The cancer survivors were all in complete remission and had finished treatment between 3 months and 10 years prior to this study. The objectives of the investigation were explained and an informed consent form was signed. This investigation has been approved by the ethical committee of the Hospital Clínico San Carlos and has followed the Helsinki declaration. Quality of reporting was assessed using the ‘Strengthening the Reporting of Observational studies in Epidemiology’ (STROBE) checklist.

2.2. The 14-item Wagnild and Young resilience scale

The Spanish version of the WYRS-14 was used to assess resilience [13]. This scale has been used in previous investigations of resilience and related factors. Each item is scored between 1 and 7, giving a total score between 14 and 98, with higher scores indicating greater resilience [14]. Based on a study by Coronado et al. of peri- and post-menopausal women [15], a cut-off score was set at the 25th percentile (71 points) to distinguish low and high resilience.

2.3. Cervantes-SF-16 questionnaire

The Cervantes-SF-16 is specifically for menopausal Spanish women aged between 45 and 64 years that assesses the impact of menopausal symptoms on health-related quality of life. The original form, consisting of 31 items, was reduced to a 16-item short form. This self-administered questionnaire has 16 items in various domains (vasomotor symptoms, health and aging, psychological issues, sexuality, partner relations), scored on a Likert scale ranging from 0 to 5. For negative questions, 0 indicates the best scenario and 5 the worst. For positive questions, 0 means the worst state and 5 the best. Along with the shortening of the 31-item version, a rescaling method was established to convert the original scores into scores on a 0–100 scale [16,17], on which 0 indicates the best possible menopause-related quality of life and 100 the worst [18].

2.4. General sociodemographic questionnaire

A sociodemographic questionnaire was also completed by participants. Variables included age (in years), parity, education level (low, middle and high), marital status (single, divorced or widowed), employment status (working, unemployed, housewife or unable to work), type of cancer, last menstrual period, depressed mood, diagnosis of osteoporosis, tobacco and alcohol intake, presence of climacteric symptoms and their treatment (soya isoflavones, cimicifuga racemosa, purified pollen extract or hormone replacement therapy). One unit of

Table 1

Sample characteristics according to the history of cancer. Data are given as frequencies (%) or medians [interquartile range; p25–p75].

	Cancer survivors (n = 80)	Non cancer participants (n = 213)	
Age (years)	58.52 [51.58–66.29]	57.15 [53.09–61.32]	P = 0.291
BMI (n = 271)	25.20 [23.21–28.20]	25.00 [22.87–27.39]	p = 0.143
Parity (n = 251)	2 [1–2]	2 [1–2]	P = 0.348
Marital status (n = 284)			P < 0.001
Single	18 (24.32)	20 (9.52)	*
Married	35 (47.30)	160 (76.19)	P < 0.001
Widow	13 (17.57)	14 (6.67)	P = 0.951
Divorced	8 (10.81)	16 (7.62)	P = 0.275
Employment status (n = 281)			P = 0.084
Working	32 (43.84)	117 (56.25)	
Unemployed	7 (9.59)	29 (13.94)	
Housewife	32 (43.84)	58 (27.88)	
Inability	2 (2.74)	4 (1.92)	
Educational level (n = 287)			P = 0.017
Basic	33 (42.31)	66 (31.58)	*
High school	33 (42.31)	76 (36.36)	P = 0.636
University	12 (15.38)	67 (32.06)	P = 0.006
Current smoker (n = 291)			P = 0.457
Yes	18 (22.78)	40 (18.87)	
No	61 (77.22)	172 (81.13)	
Cigarettes/week	10 [5–15]	10 [6–20]	P = 0.527
Alcohol consumer (n = 291)			P = 0.909
Yes	21 (26.25)	54 (25.59)	
No	59 (73.75)	157 (74.41)	
Units of alcohol/week	2 [1–4]	2 [1.25–5]	P = 0.637
Type of cancer			
Breast	49 (61.25)		
Ovary	5 (6.25)		
Endometrium	19 (23.75)		
Cervix	4 (5.00)		
Vulva	3 (3.75)		
Depressed mood (n = 280)			P = 0.198
Yes	24 (31.17)	48 (23.65)	
No	53 (68.83)	155 (76.35)	
Months since menopause onset	72 [24–132]	75 [36–120]	P = 0.858
Climacteric symptoms (n = 289)			P < 0.001
Yes	46 (21.50)	168 (79.62)	
No	32 (41.03)	43 (20.38)	
In treatment	5 (10.90)	41 (24.40)	P = 0.480
Osteoporosis (n = 287)			P = 0.870
Yes	12(15.19)	30 (14.42)	
No	67 (84.81)	178 (85.58)	
WYRS-14 total score (n = 285)	86 [75.25–93]	80 [69.50–88]	P < 0.001
Low resilience(< 71 points)	13 (16.30)	55 (26.80)	P = 0.06
High resilience (≥71 points)	67 (83.80)	150 (73.20)	
CERVANTES-SF-16 total score	45.01 [27.19–58.34]	32.37 [20.00–44.80]	P < 0.001

*Reference category.

BMI = body mass index.

alcohol was considered to be a standard glass of beer (285 ml), a single measure of spirit liquor (30 ml), a medium-sized glass of wine (120 ml), or one measure of an aperitif (60 ml) or equivalent. A cut-off of 3 units/day was considered to differentiate between heavy and moderate drinkers [19].

Table 2
Menopause-related quality of life among resilience subgroups in menopausal cancer survivors.

n = 80	LOW RESILIENCE (WYRS-14 < 71)	HIGH RESILIENCE (WYRS-14 ≥ 71)	
CERVANTES-SF-16 (Total score)	64.59 [51.81–76.68]	35.98 [25.84–53.75]	P = 0.001

Table 3
Correlation between WYRS-14 and Cervantes-SF-16 total scores among cancer survivors.

Spearman rho coefficient	WYRS-14 TOTAL SCORE	
CERVANTES-SF-16 TOTAL SCORE	−0.264	P = 0.018

Table 4
Correlation between WYRS-14 and Cervantes-SF-16 total scores among all participants.

Rho de Spearman	WYRS-14 TOTAL SCORE	
CERVANTES-SF-16 TOTAL SCORE	−0,243	P = 0,000

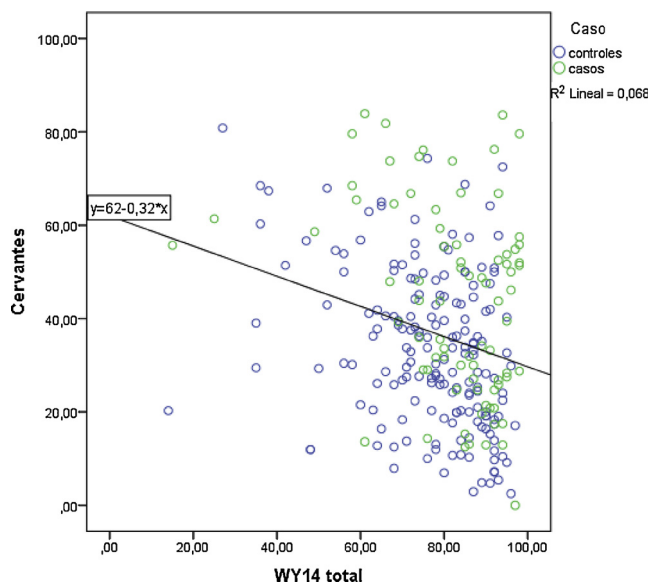


Fig. 2. Correlation between WYRS-14 and Cervantes-SF-16 total scores among all participants.

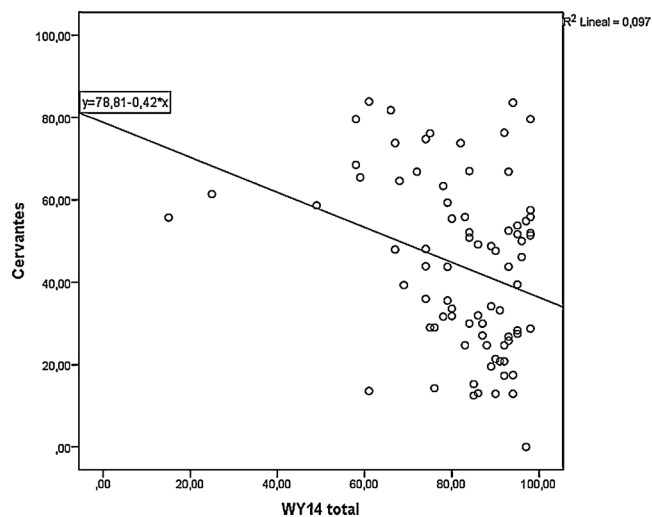


Fig. 1. Correlation between WYRS-14 and Cervantes-SF-16 total scores among cancer survivors.

2.5. Statistical methods

Qualitative variables were summarized by their frequency distribution and quantitative variables by their mean and standard deviation (± SD). Continuous non-normally distributed variables were summarized by the median and interquartile range. Cronbach’s alpha coefficient was used to measure internal consistency. The Student’s t-test or ANOVA was used to compare continuous variables. Non-parametric variables were compared using the Mann-Whitney test or Kruskal-Wallis test, while categorical variables were compared using the chi-squared test. Spearman’s rank correlation coefficient was calculated to determine the correlation between the scores on the WYRS-14 and the Cervantes-SF-16. For all tests, a significance value of 5% was used.

Sample size was set so as to achieve 80% power and a 5% alpha error.

The statistical analysis was performed using IBM SPSS Statistics 23 for Windows.

3. Results

A total of 300 patients were invited to participate in this investigation, 7 of whom provided incorrect or non-valid data (2.33%) and were excluded. Baseline characteristics of the remaining 293 women, 213 without a history of cancer and 80 cancer survivors, are shown in Table 1. Among the cancer survivors, 49 had breast cancer, 5 ovarian, 19 endometrial, 3 vulva and 4 cervical cancer. There were no statistically significant differences between cancer survivors and non-cancer participants in age, BMI, tobacco and alcohol intake, education level, employment status, time since last menstrual period, depressed mood or diagnosis of osteoporosis. Resilience level, measured by the WYRS-14, was significantly higher among cancer survivors (median total score 86.00 [75.25–93.00]) than in the non-cancer group (median total score 80 [69.50–88.00]) (p < 0.001).

Climacteric symptomatology occurred in a smaller proportion of women with a history of gynaecological cancer (58.97%) than in the non-cancer group (79.62%). However, quality of life, measured by the Cervantes-SF-16, was significantly worse among cancer survivors, with a median total score of 45.01 [27.19–58.34] versus 32.37 [20.00–44.80] in the non-cancer participants (p < 0.001).

We then stratified the cancer survivors according to their resilience scores, establishing two subgroups, low and high resilience. A total score of 71 points on the WYRS-14 was set as the cut-off point, which corresponds to the 25th percentile (Table 2). Menopause-related quality of life was significantly better among highly resilient women than among the less resilient women: the respective a Cervantes-SF total scores were 35.98 [25.84–53.75] and 64.59 [51.89–76.68] (p = 0.001).

When analysing the correlation between Cervantes-SF-16 total score and WYRS-14 total score in the whole sample, we found a significant Spearman correlation coefficient of −0.264 (p = 0.018); the correlation coefficient was −0.243 (p < 0.001) when analysing cancer survivors only. These findings indicate a moderate negative correlation (Tables 3 and 4) (Figs. 1 and 2).

To examine the secondary outcomes, we analysed the sample according to resilience status (low or high) and found that being a widow, a housewife and depressed mood were related to low resilience (Table 5).

Table 5
Sample characteristics according to resilience score. Data are given as frequencies (%) or medians [interquartile range; p25-p75].

	Descriptive Statistics	Correlation	WYRS-14 Total Score	Low resilient participants (n = 68)	High resilient participants (n = 217)	OR (95% CI)
Age (years)	57.70 [52.93–63.09]	0.017				
BMI (n = 271)	25.10 [23.05–27.68]	−0.013				
Parity (n = 251)	2 [1–2]	−0.017				
With children	207 (82.47)		82 [71–89.50]	49 (24.38)	152 (75.62)	0.81 (0.38–1.69)
Without children	44 (17.53)		81 [68–90.50]	12 (28.57)	30 (71.43)	1
Marital Status (n = 284)						
Single	38 (13.40)		85.00 [74.00–92.50]	6 (16.22)	31 (83.78)	1
Married	195 (68.70)		82 [71–89]	44 (23.16)	146 (76.84)	1.56 (0.61–3.98)
Widow	27 (9.51)		81 [49.5–96]	10 (40.00)	15 (60.00)	3.44 (1.05–11.27)*
Divorced	24 (8.45)		81.50 [66.75–90.25]	6 (25.00)	18 (75.00)	1.72 (0.48–6.14)
Employment Status (n = 281)						
Working	149 (53.02)		83 [75.50–89]	24 (16.55)	121 (83.45)	1
Unemployed	36 (12.81)		86 [63.75–92]	9 (26.47)	25 (73.53)	1.82 (0.75–4.37)
Housewife	90 (32.03)		77 [67.50–90]	32 (35.96)	57 (64.04)	2.83 (1.53–5.24)*
Inability	6 (2.14)		83 [72.50–93.25]	1 (16.67)	5 (83.33)	1.01 (0.11–9.02)
Educational level (n = 287)						
Basic	99 (34.49)		80 [68.75–91.00]	28 (29.79)	66 (70.21)	1
High school	109 (37.98)		82 [73–89]	21 (19.63)	86 (80.37)	0.58 (0.30–1.10)
University	79 (27.53)		82 [72–88.25]	17 (21.79)	61 (78.21)	0.66 (0.33–1.32)
Current smoker (n = 291)						
Yes	58 (19.93)		84.50 [72.75–92]	13 (24.41)	45 (77.59)	0.92 (0.46–1.82)
No	233 (80.07)		80 [71–89.50]	54 (24.00)	171 (76.00)	1
Alcohol consumer (n = 291)						
No	216 (74.23)		81.50 [70–90]	53 (25.48)	155 (74.52)	1
Yes > 3 units	32 (11.00)		80 [69–90.75]	8 (25.00)	24 (75.00)	0.97 (0.41–2.30)
Yes < 3 units	43 (14.78)		82 [76–85]	6 (13.95)	37 (86.05)	0.47 (0.19–1.19)
Cancer						
Yes	80 (27.30)		86 [75.25–93]	13 (16.25)	67 (83.75)	0.53 (0.27–1.03)
No	213 (72.70)		80 [69.50–88]	55 (26.83)	150 (73.17)	1
Type of cancer						
Breast	49 (61.25)		83 [74–92.50]	10 (20.41)	39 (79.59)	1
Ovary	5 (6.25)		89 [67–95.5]	1 (20.00)	4 (80.00)	0.98 (0.10–9.71)
Endometrium	19 (23.75)		90 [82–93]	1 (5.26)	18 (94.74)	0.22 (0.03–1.82)
Cervix	4 (5.00)		87.5 [86.25–93.25]	0 (0.00)	4 (100.00)	
Vulva	3 (3.75)		84 [59–84]	1 (33.33)	2 (66.67)	1.95 (0.16–23.73)
Depressed mood (n = 280)						
Yes	72 (25.71)		78.5 [65.5–89]	23 (32.86)	47 (67.14)	1.92 (1.05–3.52)*
No	208 (74.29)		82.5 [73–91]	41 (20.30)	161 (79.70)	1
Months since menopause Onset	73.5 [32.5–120]	−0.018				
Climacteric symptoms (n = 289)						
Yes	214 (74.05)		80 [70–88]	53 (25.60)	154 (74.40)	1.62 (0.82–3.17)
No	75 (25.95)		86 [79–93]	13 (17.57)	61 (82.43)	1
In treatment						
Yes	46 (21.50)		76 [68–84.75]	15 (34.09)	29 (65.91)	1.70 (0.83–3.50)
No	168 (78.50)		80 [72–89]	38 (23.31)	125 (76.69)	1
Osteoporosis (n = 287)						
Yes	42 (14.63)		82 [73–90.50]	8 (19.51)	33 (80.49)	0.79 (0.34–1.80)
No	245 (85.37)		82 [71.75–90]	56 (23.53)	182 (76.47)	1

*p-value < 0.05.

4. Discussion

In the present investigation, score on the WYRS-14, as a measure of resilience, was found to be higher in menopausal women with a history of gynaecological cancer than in those without. In fact, their WYRS-14 median total score was also higher than those reported in previous studies by our group and others in Spain and Ecuador [20,21]. This finding seems particularly relevant because resilience in oncological menopausal patients has not been evaluated before.

Statistical analysis of the Cervantes-SF-16 scores showed a worse quality of life in menopausal women with a history of cancer. However,

after creating two subgroups of the women with a history of cancer based on resilience score, those with high resilience (WYRS-14 total score ≥ 71) had a significantly lower Cervantes-SF-16 score than the less resilient women. These findings indicate that quality of life in women with a history of gynaecological cancer is significantly related to their resilience score.

The main limitation of this investigation was its design, since it was not possible to determine causality.

5. Conclusions

In conclusion, the association between cancer and menopause had a negative impact on women's quality of life. In our sample, resilience was affected by cancer and a higher resilience score seemed to be related to a better menopause-related quality of life in patients with a history of gynaecological cancer.

Contributors

Agustin Oliva was responsible for study conception, data analysis and drafting of the manuscript.

Jose M. García-Cebrián was responsible for data acquisition and data analysis.

Eva F. Calatayud was responsible for data acquisition.

Irene Serrano-García was responsible for data analysis.

Miguel A. Herraiz was responsible for study conception.

Pluvio J. Coronado was responsible for study conception, data analysis and drafting of the manuscript.

Conflict of interest

The authors declare that they have no conflict of interest.

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Ethical approval

The ethics committee of the Hospital Clínico San Carlos, Madrid, Spain, approved this study protocol, and conforms to the principles embodied in the Declaration of Helsinki. Participants provided written informed consent.

Provenance and peer review

This article has undergone peer review.

Research data (data sharing and collaboration)

There are no linked research data sets for this paper. All available data can be obtained by contacting the corresponding author.

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