Exploring Wellbeing and Sense of Coherence in French-Speaking Women with Breast Cancer: Insights from a Cross-Sectional Study

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ABSTRACT

Introduction: Breast cancer is the most commonly diagnosed cancer worldwide, accounting for about one in eight cancer cases according to the World Health Organization. It significantly impacts physical, psychological, and social aspects of life. Well-being is a complex, multidimensional concept shaped by internal and external factors. The Sense of Coherence (SOC) model provides a useful framework for understanding how individuals cope with health-related stress and maintain well-being. **Objective:** This study aimed to assess well-being and SOC levels among French-speaking women diagnosed with breast cancer and to identify factors associated with SOC. **Methods:** A cross-sectional survey was conducted between July and September 2023. Participants were French-speaking women diagnosed with breast cancer. Data were collected through an online self-administered questionnaire covering: (1) sociodemographic and clinical information, (2) well-being using the WHO-5 Well-Being Index, and (3) SOC using the 13-item SOC scale (SOC-13). Data were analyzed using R software. **Results:** A total of 99 women participated, most of whom lived in France (89.9%). The average age was 47.7 years, and 89.9% had children. Half were diagnosed between 2021 and 2023. Treatments included chemotherapy (54%), radiotherapy (38%), and surgery (35%). The average WHO-5 well-being score was 52.1, and the mean SOC score was 50.6, with subscale scores of 22.0 (comprehensibility), 18.0 (manageability), and 17.0 (meaningfulness). SOC showed a moderate positive correlation with well-being ($r = 0.43$) and was significantly associated with receiving radiotherapy ($p = 0.035$) and living alone ($p = 0.008$). **Conclusions:** Findings highlight SOC as a key factor in the well-being of women with breast cancer, supporting Antonovsky's model. Strengthening SOC may enhance resilience and improve quality of life in this population. Future interventions should consider strategies to support SOC development.

Keywords: sense of coherence, breast neoplasms, cancer survivors, health promotion

INTRODUCTION

According to the World Health Organization (WHO), breast cancer represents the most frequently diagnosed malignancy, accounting for approximately one in eight cancer cases globally. In 2020, an estimated 2.3 million new cases were reported worldwide, resulting in approximately 685,000 deaths. Breast cancer remains the leading cause of cancer-related mortality among women, with a disproportionate burden observed in low- and middle-income countries [1,2].

The diagnosis of breast cancer has profound physical, psychological, and financial consequences for patients and their families, frequently leading to significant lifestyle modifications and disruptions in family dynamics. The disease is associated with a range of symptoms and psychological challenges, including

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anxiety, stress, fear, depression, and a diminished perception of life expectancy, in addition to the potential adverse effects of treatment. Collectively, these factors contribute to a decline in wellbeing across various stages of the disease, from non-invasive breast cancer to advanced stages requiring palliative care [3–6].

Research indicates that psychosocial factors related to stress adversely affect both cancer incidence and survival outcomes. Accordingly, identifying the determinants of wellbeing is critical for supporting patients in the transition to survivorship and in coping with the stressors associated with the disease. Various factors, including age, disease stage, financial concerns, work-life balance challenges, and psychosomatic symptoms such as pain, stress, and depression, have been identified as influencing the wellbeing of breast cancer patients. Furthermore, diminished self-efficacy and weakened social relationships have also been reported as additional factors negatively impacting wellbeing [7,8].

Wellbeing, a multifaceted construct encompassing physical, psychological, and social dimensions, varies among individuals and is closely aligned with the WHO's definition of health, which emphasizes a state of complete physical, mental, and social wellbeing [9]. Some studies conceptualize wellbeing as a combination of positive affect and effective functioning, encompassing the experience of emotions such as happiness and contentment, the realization of one's potential, autonomy over one's life, a sense of purpose, and the maintenance of positive interpersonal relationships [10,11].

Antonovsky, a sociologist, introduced the theory of sense of coherence (SOC) in 1979 to investigate the factors that promote health and wellbeing. This theory emerged from an epidemiological study of Holocaust survivors who, despite experiencing extreme stress, were able to maintain healthy lives. These individuals mobilized available resources, reoriented their perspectives, and continued to construct meaningful lives, behaviors consistent with Antonovsky's SOC framework. SOC consists of three core components: comprehensibility (the extent to which life events are perceived as structured, predictable, and explicable), manageability (the perception that one possesses adequate resources to meet the demands posed by these events), and meaningfulness (the belief that life's challenges are worthy of investment and engagement). According to Antonovsky, a strong SOC is cultivated within environments that provide sufficient physical, emotional, and social resources, thereby facilitating the individual's adaptation process [12,13].

This theory emphasizes the dynamic interplay among health, stress, and coping. Health, as conceptualized by Antonovsky, is a continuous process of managing stressors across the lifespan. Although stress is ubiquitous, individuals exhibit varying health outcomes depending on the strength of their SOC [14,15]. Given that breast cancer constitutes a significant source of stress, Antonovsky's theory may be instrumental in elucidating the mechanisms that promote wellbeing in this patient population [16].

This study addressed several key research questions. First, we investigated whether lower levels of wellbeing are inherently associated with breast cancer patients. Second, we assessed the SOC levels among individuals diagnosed with breast cancer. Additionally, we explored the correlation between SOC and wellbeing in both breast cancer patients and survivors. Finally, we aimed to identify the factors that positively or negatively influence the wellbeing and SOC of individuals affected by breast cancer. The primary objective of this study was to evaluate the wellbeing and SOC in women with breast cancer and to identify factors associated with SOC.

This article was previously presented as a poster at the 10th International Francophone Congress on Epidemiology and Public Health, held from July 10-12, 2024, in Limoges, France.

METHODS

Study Design and participants

We conducted a cross-sectional study between July and September 2023. To be eligible for participation, individuals had to be French-speaking women aged 18 years or older with a confirmed diagnosis of breast

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue IV April 2025

cancer. There were no restrictions regarding the type of breast cancer, disease stage, or treatment modality at the time of the study. Individuals in remission from breast cancer were also included.

Data collect

Data collection was conducted using an electronic self-administered questionnaire, which was distributed via social media platforms, particularly within peer support groups for individuals living with breast cancer. The questionnaire consisted of three main sections. The first section collected sociodemographic and clinical data, including information such as participants' age, marital status, and treatment history. The second section assessed wellbeing using the WHO-5 Well-Being Index, a brief self-report tool designed to evaluate wellbeing over the past two weeks. Scores on this index range from 0 to 100, with lower scores indicating poorer wellbeing. The third section evaluated the Sense of Coherence (SOC) using the French version of the SOC-13 scale [17]. This abbreviated form comprises 13 items divided into three subscales: Comprehensibility (items 2, 6, 8, 9, and 11), Manageability (items 3, 5, 10, and 13), and Meaningfulness (items 1, 4, 7, and 12). To calculate the total SOC score, responses to items 1, 2, 3, 7, and 10 were reverse-coded using an inverted scale (e.g., 7 = 1, 6 = 2, and so on) [18].

Statistical analyses

To analyze the data, we employed both descriptive statistics and univariate statistical methods. Descriptive statistics were used to summarize the fundamental characteristics of the study population, providing an overview of key sociodemographic and clinical variables. For the univariate analyses, we applied the t-test to compare mean differences between groups and Pearson's correlation coefficient to examine the relationships between continuous variables. These statistical tests were chosen to explore potential associations and identify significant factors within the dataset.

To identify factors associated with the SOC score, a multivariable linear regression analysis was performed. Variables with a p-value < 0.20 in the univariate analyses were included in the multivariable model. Results were expressed as regression coefficients (β) with their standard errors (SE) and p-values. A p-value < 0.05 was considered statistically significant.

RESULTS

Description of participants

A total of ninety-nine women participated in this study, the majority of whom were from France. The mean age of the participants was 47 years. Nearly ninety percent of the women had at least one child. Regarding their living conditions, eighteen percent lived alone, while eighty-two percent resided with their families. Half of the participants received their cancer diagnosis between 2021 and 2023 (n = 49).

Table 1: sociodemographic characteristics of participants

	Number	Percent (%)
Age		
Mean (SD)	47.7 (9.2)	
Range	30.0 - 68.0	
Country		
France	89	89.9
Switzerland	2	2.0
Belgium	4	4.0
Martinique	1	1.0
Canada	1	1.0

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue IV April 2025

Morocco	1	1.0
Mexico	1	1.0
Living area		
Urban	32	32.3
Semi-urban	33	33.3
Rural	34	34.3
Marital status		
Married	36	36.4
In common-law relationship	27	27.3
Widow	3	3.0
Single	15	15.2
Divorced	13	13.1
In civil partnership	5	5.1
Children		
No	10	10.1
Yes	89	89.9
Living condition		
With family	81	81.8
Alone	18	18.2

Undergoing treatments

At the time of data collection, the primary treatments received by participants included hormone therapy, which was administered to 58% of the cohort (n=57). Chemotherapy was reported by 54% of the women (n=53), while 38% underwent radiotherapy (n=38). Additionally, surgical interventions were noted in 35% of the participants (n=35).

Table 2: Treatment characteristics of participants at the time of data collection

	Number	Percent (%)
Treatments	**N = 99**	
Year of diagnosis	2022 (2021, 2023)	
Unknown	1	
Surgery		
No	64	65.0
Yes	35	35.0
Radiotherapy		
No	61	62.0
Yes	38	38.0
Targeted therapy		
No	94	95.0
Yes	5	5.1
Chemotherapy		
No	46	46.0
Yes	53	54.0

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue IV April 2025

Hormonotherapy		
No	42	42.0
Yes	57	58.0

[1] Statistics Presented: n (%); median (IQR)

Wellbeing and Sense of Coherence Assessment

Wellbeing of participants

The evaluation of participants' wellbeing using the WHO-5 Wellbeing Index revealed a mean score of 52.1 (95% CI: 48.1–56.1), indicating an average level of wellbeing, with a score of 50 serving as the cutoff point for classification. Among the individual items assessed, the highest mean score was observed for the statement "I have felt cheerful and in good spirits," with an average rating of 3.04. Conversely, the lowest mean score was recorded for the item "I woke up feeling fresh and rested," with an average rating of 2.05.

Sense of coherence in participants

The Sense of Coherence (SOC) was measured using the SOC-13 scale, yielding a mean score of 50.6 (95% CI: 48.3–52.9), reflecting the participants' overall sense of coherence. The subscale analysis revealed the following mean scores: 22 for Comprehensibility, 18 for Manageability, and 17 for Meaningfulness.

Correlation between SOC and wellbeing in participants

A significant positive correlation was identified between the SOC-13 and WHO-5 scores (r = 0.43, 95% CI: 0.26–0.58), suggesting that a stronger sense of coherence is associated with higher levels of overall wellbeing.

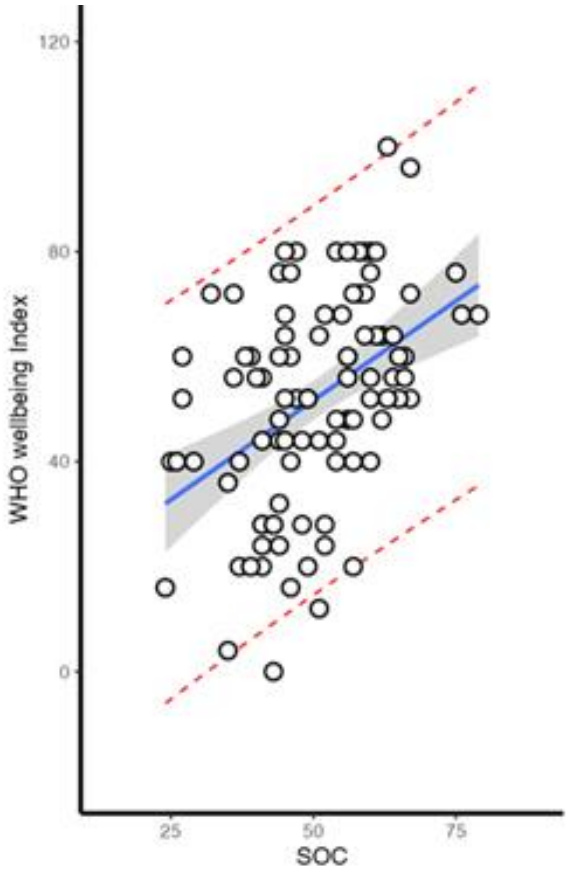

Figure 1: Correlation between SOC-13 and WHO-5

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue IV April 2025

Other elements correlated with the SOC

In addition to wellbeing, several other factors were associated with the SOC. Firstly, undergoing radiotherapy was found to be positively associated with higher SOC scores (p = 0.035), indicating that participants who received radiotherapy demonstrated a stronger sense of coherence.

The analysis also revealed that living alone was positively associated with SOC scores (p = 0.008), suggesting that participants who lived alone reported a stronger sense of coherence.

Table 3: Other elements correlated with the SOC

		SOC Score	p	Comprehensibility	p	Manageability	p	Meaningfulness	p
Age			0.020		0.690		0.905		0.440
	Pearson's r	0.235		0.041		-0.012		-0.079	
Area			0.668		0.899		0.394		0.774
	Urban	51.9 (10.8)		21.9 (5.2)		17.9 (3.7)		16.8 (2.5)	
	Semi-urban	50.6 (11.7)		21.3 (4.2)		18.5 (3.7)		16.8 (2.7)	
	Rural	49.3 (12.8)		21.7 (5.9)		17.2 (3.8)		17.2 (2.3)	
Living condition			0.008		0.484		0.044		0.106
	With family	52.0 (11.6)		21.8 (4.8)		18.2 (3.7)		17.1 (2.1)	
	Alone	44.1 (10.3)		20.9 (6.6)		16.3 (3.5)		16.1 (3.5)	
Children			0.225		0.719		0.672		0.034
	No	46.3 (11.3)		21.1 (5.5)		17.4 (3.6)		15.4 (3.2)	
	Yes	51.1 (11.7)		21.7 (5.1)		17.9 (3.8)		17.1 (2.3)	
Surgery			0.710		0.596		0.149		0.116
	No	50.2 (10.8)		21.9 (5.1)		18.3 (3.8)		16.7 (2.3)	
	Yes	51.2 (13.4)		21.3 (5.3)		17.1 (3.5)		17.5 (2.7)	
Radiotherapy			0.035		0.354		0.146		0.058
	No	48.6 (10.9)		21.3 (5.2)		18.3 (3.7)		16.6 (2.4)	
	Yes	53.7 (12.4)		22.3 (5.0)		17.2 (3.8)		17.6 (2.5)	
Targeted therapy			0.672		0.610		0.155		0.374
	No	50.7 (11.8)		21.6 (5.1)		17.8 (3.7)		17.0 (2.5)	
	Yes	48.4 (10.1)		22.8 (5.8)		20.2 (2.9)		16.0 (2.3)	
Chemotherapy			0.397		0.562		0.187		0.409
	No	49.5 (11.4)		22.0 (5.6)		18.4 (3.9)		16.7 (2.3)	
	Yes	51.5 (12.0)		21.4 (4.7)		17.4 (3.5)		17.2 (2.6)	
Hormonotherapy			0.591		0.416		0.953		0.954
	No	49.8 (12.4)		21.2 (5.4)		17.9 (3.7)		17.0 (2.6)	
	Yes	51.1 (11.3)		22.0 (4.9)		17.9 (3.8)		16.9 (2.4)	
WHO-5 index			< .001		0.026		0.956		0.806
	Pearson's r	0.432		0.223		-0.006		-0.025	

Multivariate analysis identified factors associated with the overall SOC score and its subdimensions. Higher WHO-5 well-being scores were significantly associated with higher SOC scores ($\beta = 0.229$, $p < 0.001$). Radiotherapy was also positively associated with SOC ($\beta = 4.43$, $p = 0.046$). Living alone showed a non-significant trend toward lower SOC scores compared to living with family ($\beta = -5.15$, $p = 0.066$), while age was not a significant predictor ($p = 0.987$).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue IV April 2025

In the analysis of subdimensions, living alone was significantly associated with lower manageability scores (β = -2.35, p = 0.020). No significant associations were found between manageability and clinical treatments (surgery, radiotherapy, targeted therapy, or chemotherapy). For meaningfulness, none of the variables reached statistical significance, although having children showed a positive, non-significant trend (β = 1.46, p = 0.087).

Table 4: Factors associated with the global SOC score in multivariable analysis

Predictor	Estimate (β)	SE	t	p
Intercept	37.92800	5.9654	6.3580	< .001
Age	-0.00191	0.1184	-0.0161	0.987
Living condition				
Alone - With family	-5.14778	2.7683	-1.8595	0.066
Radiotherapy				
Yes – No	4.43139	2.1910	2.0225	0.046
WHO-5 index	0.22902	0.0534	4.2903	< .001

Table 5: Factors influencing the manageability dimension of the SOC

Predictor	Estimate (β)	SE	t	p
Intercept	18.810	0.609	30.903	< .001
Living condition				
Alone - With family	-2.348	0.988	-2.376	0.020
Surgery				
Yes – No	-0.523	1.039	-0.503	0.616
Radiotherapy				
Yes – No	-0.902	1.068	-0.844	0.401
Targeted therapy				
Yes – No	2.654	1.710	1.552	0.124
Chemotherapy				
Yes – No	-0.200	0.797	-0.251	0.803

Table 6: Factors influencing the meaningfulness dimension of the SOC

Predictor	Estimate (β)	SE	t	p
Intercept [a]	15.403	0.859	17.934	< .001
Living condition				
Alone - With family	-0.587	0.657	-0.894	0.374
Children				
Yes – No	1.464	0.848	1.727	0.087
Surgery				
Yes – No	0.508	0.695	0.731	0.467
Radiotherapy				
Yes – No	0.437	0.691	0.632	0.529

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue IV April 2025

DISCUSSION

Main results

The primary aim of this study was to evaluate the wellbeing and Sense of Coherence (SOC) among French-speaking women diagnosed with breast cancer and to identify factors associated with SOC. The study sample included 99 women, primarily from France, with a mean age of 47 years. Nearly 90% had children (n=89), and 18% were living alone (n=18). At the time of the study, 58% were undergoing hormonotherapy (n=53), 54% were receiving chemotherapy (n=53), 38% had completed radiotherapy (n=38), and 35% had undergone surgery(n=35).

The WHO-5 Wellbeing Index revealed an average wellbeing score of 52.1, with the highest score reported for "feeling cheerful" and the lowest for "waking up feeling rested."

The average SOC score was 50.6 on the SOC-13 scale, with subscale scores of 22 for Comprehensibility, 18 for Manageability, and 17 for Meaningfulness.

A significant positive correlation (r=0.43) was found between SOC and wellbeing, which is consistent with existing literature suggesting that a breast cancer diagnosis and its treatment can be both physically and emotionally taxing [19].

Additionally, higher SOC scores were associated with receiving radiotherapy (p=0.035), suggesting that certain treatment experiences may enhance a patient's ability to cope. However, our findings diverge from those of previous studies, and this discrepancy could be attributed to variations in the length and frequency of radiotherapy sessions, which may directly impact the wellbeing and SOC of the women receiving treatment [20].

Although living alone is generally considered a negative factor for breast cancer patients due to its association with poorer health outcomes and increased mortality [21], this study found that women living alone had higher SOC scores (p=0.008). This could be related to the stress of fulfilling familial roles while coping with breast cancer. Prior research has highlighted the challenges women face in balancing family responsibilities during their illness [22, 23], and our findings suggest that living alone might serve as a protective factor by reducing these additional stresses. Women living alone may have developed unique coping strategies that contribute to their stronger SOC.

Limitations and strengths of the study

As an exploratory study, several limitations must be considered when interpreting these findings. First, the sample size is not representative of the broader population, which restricts the generalizability of the results. Additionally, the use of an online self-administered questionnaire and recruitment through social media peer groups introduces selection bias and limits demographic representativeness.

Furthermore, the study did not distinguish between participants undergoing active cancer treatment and those in remission. The absence of disaggregation by disease stage and survivorship status constitutes a limitation, as sense of coherence (SOC) and wellbeing are likely to vary according to treatment phase and cancer trajectory. This methodological constraint may have impacted the precision and interpretability of the results.

Notwithstanding these limitations, the study contributes novel insights into the psychosocial dimensions of breast cancer care. By applying Antonovsky's SOC theory, the research provides a valuable theoretical framework for understanding the mechanisms through which women with breast cancer manage stress and maintain health. Moreover, the findings identify key psychosocial factors associated with overall wellbeing and suggest multiple directions for future research. Given the substantial psychological and physical burdens associated with breast cancer, continued investigation in this area remains essential.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue IV April 2025

CONCLUSIONS

In conclusion, while advancements in treatment are essential for improving survival rates among breast cancer patients, this study underscores the critical role that Sense of Coherence (SOC) plays in their overall health and wellbeing. Our findings suggest that a higher SOC is closely associated with enhanced wellbeing, supporting Antonovsky's theory that SOC is a key factor in helping individuals navigate the stress and challenges of illness, particularly for breast cancer patients. Further research is required to gain a deeper understanding of the factors that underpin this resilience, as such insights could prove valuable in fostering SOC and helping patients face adversity with greater strength and adaptability.

ETHICAL CONSIDERATIONS

Ethical Approval: This study was conducted in accordance with the principles outlined in the Declaration of Helsinki, and ethical approval was obtained. The study's objectives were clearly explained to the participants, and informed consent was obtained from each participant. All collected information was maintained with strict confidentiality.

Conflict of Interest: The authors declare that there are no conflicts of interest related to this research or its publication.

DATA AVAILABILITY

The data collected and analyzed during this study are not publicly available due to privacy and confidentiality restrictions. However, they are available from the corresponding author upon reasonable request.

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REFERENCES

1. Antonovsky, A. (1987). Unraveling the mystery of health: How people manage stress and stay well. Jossey-Bass.
2. Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. Social Science & Medicine, 36(6), 725–733. https://doi.org/10.1016/0277-9536(93)90033-z
3. Arnold, M., Morgan, E., Rumgay, H., et al. (2022). Current and future burden of breast cancer: Global statistics for 2020 and 2040. Breast. https://doi.org/10.1016/j.breast.2022.08.010
4. Biswas-Diener, R., Vittersø, J., Diener, E., et al. (2010). The Danish effect: Beginning to explain high well-being in Denmark. Social Indicators Research, 97, 229–246. https://doi.org/10.1007/s11205-009-9499-5
5. Charos, D., Andriopoulou, M., Lykeridou, K., et al. (2023). Psychological effects of breast cancer in women and their families: A systematic review. World Journal of Advanced Research and Reviews. https://doi.org/10.30574/wjarr.2023.18.2.0945
6. Chida, Y., Hamer, M., Wardle, J., et al. (2008). Do stress-related psychosocial factors contribute to cancer incidence and survival? Nature Clinical Practice Oncology, 5, 466–475. https://doi.org/10.1038/ncponc1134
7. da Silva, J. G. B., Costa, D. T., Cavalcanti, I. D. L., et al. (2022). Quality of life in women with breast cancer treated at a radiotherapy centre in Caruaru, Pernambuco, Brazil. Canadian Oncology Nursing Journal, 32, 162–171. https://doi.org/10.5737/23688076322162171

8. DeMiglio, L., Murdoch, V., Ivison, J., et al. (2020). Factors influencing psychological well-being of early breast cancer patients. Reports of Practical Oncology and Radiotherapy, 25, 913–918. https://doi.org/10.1016/j.rpor.2020.09.009
9. Doyle, C., Ko, E., Lemus, H., et al. (2023). Alone, physical health, and mortality in breast cancer survivors: A prospective observational cohort study. Healthcare (Basel), 11(17). https://doi.org/10.3390/healthcare11172379
10. Fortin, J., Leblanc, M., Elgbeili, G., et al. (2021). The mental health impacts of receiving a breast cancer diagnosis: A meta-analysis. British Journal of Cancer, 125, 1582–1592. https://doi.org/10.1038/s41416-021-01542-3
11. Gana, K., & Garnier, S. (2021). Latent structure of Sense of Coherence Scale in a French sample. Personality and Individual Differences, 31, 1079–1090. https://doi.org/10.1016/S0191-8869(00)00205-1
12. Griffiths, C. A., Ryan, P., & Foster, J. H. (2011). Thematic analysis of Antonovsky's sense of coherence theory. Scandinavian Journal of Psychology, 52, 168–173. https://doi.org/10.1111/j.1467-9450.2010.00838.x
13. Harandy, T. F., Ghofranipour, F., Montazeri, A., et al. (2010). Muslim breast cancer survivor spirituality: Coping strategy or health-seeking behavior hindrance? Health Care for Women International, 31, 88–98. https://doi.org/10.1080/07399330903104516
14. Hu, K., Eriksson, M., Wengström, Y., et al. (2020). Sense of coherence and risk of breast cancer. eLife. https://doi.org/10.7554/eLife.61469
15. Javan Biparva, A., Raoofi, S., Rafiei, S., et al. (2022). Global quality of life in breast cancer: Systematic review and meta-analysis. BMJ Supportive & Palliative Care. https://doi.org/10.1136/bmjspcare-2022-003642
16. Jones, S. M., LaCroix, A. Z., Li, W., et al. (2015). Depression and quality of life before and after breast cancer diagnosis in older women from the Women's Health Initiative. Journal of Cancer Survivorship, 9, 620–629. https://doi.org/10.1007/s11764-015-0438-y
17. Mittelmark, M. B., Sagy, S., Eriksson, M., et al. (2017). The handbook of salutogenesis. In G. F. Pelikan, J. M. Lindström, B. & G. A. Espnes (Eds.), Cham: Springer, pp. 97–106. https://doi.org/10.1007/978-3-319-04600-6
18. Ruggeri, K., Garcia-Garzon, E., Maguire, A., et al. (2020). Well-being is more than happiness and life satisfaction: A multidimensional analysis of 21 countries. Health and Quality of Life Outcomes. https://doi.org/10.1186/s12955-020-01423-y
19. Salander, P., Lilliehorn, S., Hamberg, K., et al. (2011). The impact of breast cancer on living an everyday life 4.5–5 years post-diagnosis – A qualitative prospective study of 39 women. Acta Oncologica, 50, 399–407. https://doi.org/10.3109/0284186X.2010.547216
20. Seven, M., Bagcivan, G., Pasalak, S. I., et al. (2021). Experiences of breast cancer survivors during the COVID-19 pandemic: A qualitative study. Supportive Care in Cancer, 29, 6481–6493. https://doi.org/10.1007/s00520-021-06243-4
21. Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 Well-Being Index: A systematic review of the literature. Psychotherapy and Psychosomatics, 84, 167–176. https://doi.org/10.1159/000376585
22. Weaver, K. E., Forsythe, L. P., Reeve, B. B., et al. (2012). Mental and physical health-related quality of life among U.S. cancer survivors: Population estimates from the 2010 National Health Interview Survey. Cancer Epidemiology, Biomarkers & Prevention, 21, 2108–2117. https://doi.org/10.1158/1055-9965.EPI-12-0740
23. World Health Organization. (n.d.). The Global Breast Cancer Initiative. https://www.who.int/initiatives/global-breast-cancer-initiative