



# Spiritual well-being among patients newly diagnosed with cancer in Jordan: thematic analysis

Maysoon S. Abdalrahim<sup>1</sup> · Shaymma S. Issa<sup>2</sup> · Randa Albusoul<sup>1</sup>

Received: 25 March 2023 / Accepted: 30 September 2023 / Published online: 10 October 2023  
© The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature 2023

## Abstract

**Purpose** Patients newly diagnosed with cancer experience a grief process that disturbs their spiritual well-being. The purpose of this study was to explore the spiritual well-being among patients with cancer within the first 3 months of diagnosis.

**Methods** The study used a qualitative approach using thematic analysis. In-depth interviews were conducted with sixteen participants diagnosed with cancer within the first 3 months prior to data collection using a purposive sampling method. The interviews took place in oncology outpatient clinics at three selected hospitals in Jordan.

**Results** Four main themes emerged from the texts of the participants' stories. These themes were "Hopeful yet uncertain expectation of achieving future goals," "A wake-up call for self-transcendence," "Religious struggle," and "Facing Reality provoke questions about meaning of life."

**Conclusion** To conclude, analysis of texts from the Jordanian patients who are newly diagnosed with cancer has revealed rich and meaningful evidence of the effect of this diagnosis on disturbing patients' beliefs and meaning of life. Those patients may experience uncertainty; however, they become more connected with others and God. Health care providers need to understand patients' sources of hope and adjustment that may influence management goals before and during starting treatment.

**Keywords** Spiritual well-being · Cancer · Spirituality · Jordan

## Introduction

Diagnosis and treatment of cancer usually cause tremendous physical and emotional distress that affects patients' quality of life. Spirituality and religious beliefs are important for patients who have cancer [1]. Evidence has confirmed that spiritual well-being helps patients to cope with their illness and alleviate their suffering [2].

Spirituality is a trait that individuals seek meaning, purpose, and connection to a higher power that direct them to efficiently function toward desired life goals and wishes

[3]. Spiritual well-being is considered an important life element that fosters hope and helps in coping with cancer that threatens patients' existence [4]. In cancer trajectory, patients become vulnerable to spiritual distress and are more sensitive to their values and spiritual needs [5]. Patients experience substantial changes in their lives, mainly with distributions in the meaning of life and religious beliefs in addition to losing hope. Thus, health care providers need to communicate with patients newly diagnosed with cancer about spirituality and their spiritual well-being.

The concept of spiritual well-being is defined as "a state of being reflecting positive feelings, behaviors, and cognitions of relationships with oneself, others, the transcendent and nature, that in turn provide the individual with a sense of identity, wholeness, satisfaction, joy, contentment, beauty, love, respect, positive attitudes, inner peace and harmony, and purpose and direction in life" [6]. It has been reported that spiritual well-being helped patients with cancer to accept treatment and decreased feelings of anxiety and depression [7].

When patients are newly diagnosed with cancer, they will experience a grief process that disturbs their being

✉ Maysoon S. Abdalrahim  
maysoona@ju.edu.jo

Shaymma S. Issa  
s\_issa@ju.edu.jo

Randa Albusoul  
r.albusoul@ju.edu.jo

<sup>1</sup> Clinical Nursing Department, School of Nursing, The University of Jordan, Amman 11942, Jordan

<sup>2</sup> School of Nursing, The University of Jordan, Amman 11942, Jordan

physically, psychosocially, and spiritually [8]. However, their responses vary and are influenced by their culture, beliefs, and values. For example, Jordan is a predominantly an Arab Muslim country, and some patients may perceive their illness as being from the will of “God,” and recovery is viewed as only a matter God can decide. In addition, the family structure in the Arab Muslim world can be described as cohesive [9].

Assessment provides screening for spiritual health are based on open-ended questions that aim to detect spiritual distress and the need for referral to a spiritual advisor [10]. Consequently, a better understanding of spiritual well-being among patients newly diagnosed with cancer helps health care providers to efficiently address patients’ spiritual needs and eventually achieve desired treatment outcomes. Thus, the purpose of this study was to explore the spiritual well-being among patients newly diagnosed with cancer.

## Method

### Design

A qualitative approach using thematic analysis was used in this study [11]. It consists of six phases: (1) familiarizing self with the data by frequent reading transcripts, (2) generating initial codes, (3) searching for themes which involved reviewing and clustering the codes to construct a meaningful theme, (4) checking potential themes in relation to coded data, (5) defining and naming themes, (6) writing the report [11].

### Sample and sittings

In-depth interviews were conducted with sixteen participants selected purposefully from three hospitals located in different areas in Jordan. These hospitals were selected because they have specialized oncology outpatient clinics. In accordance with qualitative inquiry, there was no predetermined sample size; however, the researchers were keen to include participants with different age, gender, marital status, and religions to assure maximum variation in the sample.

### Inclusion and exclusion criteria

Participants were included in the study if they were 18 years of age or older and diagnosed with any type of cancer within the first 3 months prior to data collection. Participants who were not informed of their diagnosis of cancer were excluded from the study as it will not be possible for them to share their experiences. Table 1 illustrates the demographic characteristics of the participants.

**Table 1** The demographic characteristics of the participants ( $n = 16$ )

| Demographic characteristics |                | <i>n</i> (%) |
|-----------------------------|----------------|--------------|
| Gender                      | Male           | 7 (43.7)     |
|                             | Female         | 9 (56.3)     |
| Religion                    | Muslim         | 10 (62.5)    |
|                             | Christian      | 4 (25.0)     |
|                             | No religion    | 2 (12.5)     |
| Marital status              | Single         | 4 (25.0)     |
|                             | Married        | 10 (62.5)    |
|                             | Divorced       | 2 (12.5)     |
| Type of cancer              | Breast cancer  | 3 (18.7)     |
|                             | Colon cancer   | 2 (12.5)     |
|                             | Leukemia       | 2 (12.5)     |
|                             | Lymphoma       | 2 (12.5)     |
|                             | Brain tumor    | 1 (6.3)      |
|                             | Lung cancer    | 2 (12.5)     |
|                             | Renal cancer   | 2 (12.5)     |
|                             | Thyroid cancer | 1 (6.3)      |
|                             | Bladder cancer | 1 (6.3)      |

### Data collection procedure and analysis

The interviews took place in oncology outpatient clinics at three selected hospitals in Jordan. The interviews focused on participants’ spirituality and the effect of being diagnosed with cancer on their spiritual well-being. Each interview lasted for an average of 1 h. The interview started with a social conversation to create a comfortable environment before discussing spiritual issues. After that, the opening question was “After being diagnosed with cancer, describe how this disease influenced your spirituality and life?” Successive questions were used to clarify and further explore meanings in the conversation. Data were collected, transcribed verbatim, and then analyzed in Arabic Transcription performed immediately after each interview by the first and third authors. The emerging themes and related statements were translated by the authors into English and checked by a bilingual expert.

In the analysis process, each author analyzed the transcripts independently following the six steps of thematic analysis [11]. First, each author read and reread the transcripts that were organized in tables in Word files. Secondly, each author generated the codes using colors, and then generated and constructed a meaningful theme. Next, potential themes and their relationship with the codes were discussed with the other authors. Similarities and differences were examined until reaching a consensus about naming and defining the themes.

## Ethical considerations

Prior to data collection, Institutional Review Board approval was obtained from The University of Jordan (number: 187412018/19). Participants who agreed to participate signed informed consent after they were informed about the study purpose, tape-recording, and their right to withdraw at any time. They were also assured that audio recordings will be deleted after transcription, and their names or any identification will not be used in the study. The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki.

## Study rigor

To ensure credibility, the purposive selection of participants ensured maximum variations in age, type of cancer, religion, and settings. To enhance transferability, the authors reported a rich description of study data and method of analysis. Therefore, the readers can relate the results and decide if they were relevant to their context. Further, researchers' triangulation in the analysis process, results, and discussion may ensure that the study was conducted with a strict rigor process.

## Results

The overall analysis of texts revealed that although participants were having doubts, they were having hope for the future. For them, cancer opened their eyes to the world and helped them thrive to be better humans. Being diagnosed with cancer made participants more connected with God, however, they experienced mixed feelings toward the meaning of life. Four main themes emerged from the texts of the participants' stories. These themes were "Hopeful yet uncertain expectation of achieving future goals," "A wake-up call for self-transcendence," "Religious struggle," and "Facing Reality provoke questions about meaning of life".

### Hopeful yet uncertain expectation of achieving future goals

Participants were having doubts about the effectiveness of treatment and the disease prognosis. They were faced with uncertainty that is influenced by past experiences and their knowledge about cancer. This made them hesitate in planning future goals because of their fears that these goals were unrealistic or cannot be achieved especially when it concerned family issues as one of the participants said.

I know what cancer disease is dangerous, I have relatives who died from it. My doctor assured me that I can survive if I respond well to chemotherapy, but I don't know, I'm not sure, I post pone my marriage and decided not to get into the new job.

Participants were shifting between hope and despair presented as uncertainty about the future. They have wishes for the future; however, they are cautious to fall into false hope. As one participant said:

I have hopes that I will be better in the future, I have plans in making my family bigger and have more children... but no, I must wait until I see what will happen with this cancer. I don't want to put plans for my future or my family future this will not be right I want to be realistic and on the ground.

On the other hand, two participants were totally refusing the idea of hope and often referred to submission to whatever happens in the future and not building false hopes. They were refusing to talk about future plans in any way because they think that this is not applied to patients diagnosed with cancer. As one of the participants said.

Let's stop talking about what will happen tomorrow, you don't know, I mean I may die today, tomorrow or after a year, who knows. Patients who plan for the future and have cancer are not realistic and dreamers. Ok it's up to them but not me, I surrender.

### A wake-up call for self-transcendence

Participants in the study perceived that cancer has opened their eyes to the world of the things that they were taking for granted. They have better gratefulness for life and consider being diagnosed with cancer as a chance for self-evaluation and to look at what they have from different views. As one of the participants said.

I used to take things in my life as something everybody have and do not appreciate things. Now I look at things differently, I can see that Allah provides us with health, a family that loves you, and a secure job. We should thank Allah a lot for that and not to take things for granted.

Some of the participants revised the way they lived and decided to be better humans. This involved their relationships and interconnectedness with others. As one of the participants said.

I know some people think that having cancer is like a curse or punishment, to me, it's a warning, I took a deep look at the way I was living, I was not a good person, I was bad with my mother in law who I live

with her, I did not speak with my sister for two years, now I become a better person.

Other participants thought that the diagnosis of cancer is a call for them to be more connected with “God” and to have more religious and spiritual rituals. As one of the participants said.

I’m a Muslim and should pray five times a day, I use to skip praying for days and sometimes months, now after getting cancer, I do the praying, I fast in Ramdan and do Zakah (donate money for the needy people).

### Religious struggle

Most of the participants expressed reliance on God in an attempt to decrease their worries about the future. They depend on the spiritual belief that there is a God that can change everything; God can heal them and settle everything. This gives them an inner peace and acceptance of the disease.

I know that cancer is a serious disease, but Allah (God) is able to do everything whatever it is, Allah can heal the most difficult diseases, I will totally relay on Allah and accept whatever Allah desire.

Although participants believe in the presence of the superpower of “Gad” they were struggling with this belief. Some participants started to have doubts about “Gad” As one of the participants stated.

When I got the disease, “God” forgot me, I thought that “God” abandon me and do not love me. Why?...I have not do anything to make him angry.

Another participant confirms this saying.

I know I should not say this, but I was always believing in God, I don’t deserve to get this disease, but I don’t know may be “God” is hiding something good for me that I don’t know about.

### Facing reality provokes questions about the meaning of life

After being told about the diagnosis of cancer, participants suddenly felt that they were detached from the familiar world that they used to have. This gave them a sense of insecurity. A participant described this as.

When you get cancer, your whole world will fall apart, I mean what is life, why we are here, can you answer these questions?

Facing the diagnosis of cancer made participants confused about the unlimited risks of the unknown and endless suffering. Participants describe this as darkness covering their eyes and questioning the meaning of life—the feeling that nothing can be done to change the reality of the illness. As one of the participants described this.

Being told that you have cancer can be like blackness cover your eyes. It brings the past, your present, and still no meaning in life. Your Life will never be the same and there is no reversing the outcomes. You lose something, and you feel that there is nothing you can do to change reality.

### Discussion

The overall interpretation of the texts was that patients who encountered the diagnosis of cancer experienced mixed feelings toward hope, the meaning of life, religion, and the truth about reality. This section will discuss and interpret each theme separately and relate it to previous studies’ results.

#### Hopeful yet uncertain expectation of achieving future goals

Patients in this study were faced with uncertainty that is influenced by past experiences and their knowledge about cancer. Although they had wishes for the future, they were careful not to live with false hope. Hope is a key factor in finding meaning in the experience of life-threatening illnesses such as cancer. It is accompanied by many positive feelings; however, it includes uncertainty, fear, and despair [2]. A patient’s perception of hope may not match his or her future wishes and goals, yet several factors may affect hope among patients diagnosed with cancer such as the relationship with significant others, faith, and strength of spiritual beliefs [5]. In addition, setting goals for the future can energize patients with cancer, thus promoting hope. When identifying goals, patients can define their wishes for the future within the context of reality [12]. They may assess the means to achieve their goals and then take actions to accomplish them. Although spirituality is viewed as a hope-fostering effect, life-threatening illnesses such as cancer can challenge a patient’s spiritual beliefs that may result in hopelessness [13]. Thus, assessing spiritual well-being is an essential part of health care intervention to promote health outcomes among patients recently diagnosed with cancer [14].

Uncertainty is a common experience in patients with cancer; patients perceive cancer as a life-changing event that goes along with suffering and despair. Uncertainty

can be related to the diagnosis or its treatment [15]. Dauphin and colleagues (2020) described uncertainty in cancer patients as an ambiguous and fluid state where patients find themselves because of their diagnosis and how it creates multiple possibilities [16]. Understanding uncertainty at the time of diagnosis is essential while providing care for patients diagnosed with cancer to identify possibilities for positive actions throughout their illness trajectory [15].

### **A wake-up call for self-transcendence**

Patients newly diagnosed with cancer reported that cancer opened their eyes to things that they were taking for granted. They became grateful for having things that they used to view as ordinary things. It seems that facing a life-threatening diagnosis such as cancer drives patients to revise their values, and the worth of life is being revealed and reconsidered [17]. This brings to mind that patients search for meaning and purpose during the disease and appreciate what they have to give meaning to the existence of illness which represents a form of self-transcendence. According to Reed (2021), self-transcendence is the human capacity to expand own boundaries beyond his or her usual form to produce something meaningful such as a new purpose, perception, or condition [18]. In our study, patients attempt to create new meaning for their illness to add comfort and satisfaction to the disease trajectory.

Self-transcendence can be identified through the outward and inward behaviors of patients. Outward self-transcendence behaviors are translated as connections with others while inward reflect patients' beliefs and values [18]. In our study, patients revise the way they live, decide to be better humans, and improve their interconnectedness with family and others. They also strengthened their relationship with God and performed religious and spiritual rituals.

A study using a modified grounded theory approach examined self-transcendence by interviewing patients with breast cancer and revealed that self-transcendence in patients diagnosed with cancer serves as the foundation of not giving up and confronting oneself, thus promoting the ability to accept and to live with their condition while bearing in mind the future [19]. In life-threatening illnesses such as cancer, spiritual disequilibrium may result in expanding the patient's boundaries inward and outward to create meaning from the illness experience which can be described as a healing process [18].

### **Facing reality provokes questions about the meaning of life**

After being told about the diagnosis of cancer, patients experience a change in how they view the world. In this

study, the patients revised their understanding of what was previously familiar or known. Facing the diagnosis of cancer made them insecure and confused, thinking of the unlimited risks of the unknown and suffering. They were questioning the reality of the meaning of life. Finding meaning of life and death is frequently used to measure spirituality, while faith is used to measure the relationship of illness with the patient's spiritual belief in cancer trajectory [1]. It seems that when patients are faced with a diagnosis of cancer, they have a reality shock that affects their spiritual beliefs. Spirituality is an essential dimension in cancer care, mostly because cancer is a life-threatening disease that gives patients more insight into the meaning of life and death [14]. Patients may experience a process of self-maturation through an experience called posttraumatic growth which is defined as "positive psychological change experienced as a result of the struggle with highly challenging life circumstances" [20]. Patients in this situation face a significant challenge from a first-time diagnosis and struggle with uncertainty, despite previous familiarity. Posttraumatic growth can be viewed as finding a meaning after coping with cancer and may lead to promote positive coping strategies among patients with cancer [21]. On the other hand, other studies showed that there is no relationship between psychological coping with cancer disease and posttraumatic growth [22]. Based on these findings, it has been proposed that adaptation to stress provoked by cancer diagnosis is highly individualized and depends on patients' past experiences and perspectives.

### **Religious struggle**

In religious communities such as Islam and Christianity, people are submitted to God's will and rely on God to be healed from illness [5]. Patients in the current study expressed reliance on God to decrease their worries about the future. They depend on the spiritual belief that there is a God who can heal them which promotes their acceptance of the disease. Previous studies showed that spirituality provides a source of strength for patients diagnosed with cancer to cope with their illness [1]. Praying to God to get comfort may strengthen the desire to seek treatment. However, patients need to have evidence that connectedness with God provides a meaning and purpose of life that fosters motivation to tolerate problems and difficulties throughout the trajectory of illness [5]. Steinhäuser and colleagues (2017) found that believing in God or a higher being produces positive coping mechanisms such as finding meaning of illness that improves quality of life, while negative coping mechanisms such as viewing disease as divine punishment are associated with decreased quality of life [23]

## Limitations of the study

A limitation of this study might be that although the researchers collected the data from participants with varied backgrounds, there was still no diversity in the religion. However, Jordan is considered an Islamic country where the majority of its population are Muslims. Another limitation is the limited setting for data collection where only three hospitals were involved.

## Conclusion and implications

To understand patients' spiritual well-being in their cancer trajectory, it is important to comprehend the world in which they live because people are influenced by their past experiences, culture, and spiritual and religious status before being diagnosed with cancer. Analysis of texts from the Jordanian patients who are newly diagnosed with cancer has revealed rich and meaningful evidence of the effect of this diagnosis on disturbing patients' beliefs and meaning of life. The emerging themes provided an understanding of patients' world. It appeared that they experience uncertainty and changes in their future planning, yet cancer strengthens their connectedness with others and with God. In addition, practicing religious rituals helped some patients cope with their illness and decrease their suffering. More consideration needs to be given to those patients regarding their spiritual well-being while planning the health care interventions. Health care providers need to understand that patients may experience spiritual distress during the initial course of cancer disease; however, understating the patients' sources of hope and adjustment may lead the health care team to set appropriate and effective individualized patient management goals before and during starting treatment. To achieve this, patients and their families need to be empowered and supported to maintain their spiritual well-being. It is recommended that future research focus on families of patients recently diagnosed with cancer and their perceptions of hope, meaning of illness, and connectedness.

**Acknowledgements** The authors thank all the participants who volunteered to share their experiences openly in this study.

**Author contributions** All authors contributed to the study's conception and design. Material preparation and data collection were performed by Shaymma S. Issa. Data analysis and results were performed by Maysoon S. Abdalrahim. Writing the first draft of the manuscript and sharing in the analysis and discussion were performed by Randa Albusoul. The final version of the manuscript was written by Maysoon S. Abdalrahim. All authors read and approved the final manuscript.

## Declarations

**Competing interests** The authors have no relevant financial or non-financial interests to disclose.

## References

1. Jimenez-Fonseca P, Lorenzo-Seva U, Ferrando PJ, Carmona-Bayonas A, Beato C, García T, del Mar Muñoz M, Ramchandani A, Ghanem I, Rodríguez-Capote A, Jara C, Calderon C (2018) The mediating role of spirituality (meaning, peace, faith) between psychological distress and mental adjustment in cancer patients. *26(5):1411–1418*. <https://doi.org/10.1007/s00520-017-3969-0>
2. Proserpio T, Ferrari A, Vullo SL, Massimino M, Clerici CA, Veneroni L, ..., Mariani L (2015) Hope in cancer patients: the relational domain as a crucial factor. *Tumori J 101(4): 447–454*. <https://doi.org/10.5301/tj.5000366>
3. Lee YH (2019) Spiritual care for cancer patients. *Asia Pac J Oncol Nurs 6(2):101–103*. [https://doi.org/10.4103/apjon.apjon\\_65\\_18](https://doi.org/10.4103/apjon.apjon_65_18)
4. Puchalski CM, King SD, Ferrell BR (2018) Spiritual considerations. *Hematology/Oncology. Clinics 32(3):505–517*. <https://doi.org/10.1016/j.hoc.2018.01.011>
5. Moosavi S, Rohani C, Borhani F, Akbari ME (2019) Consequences of spiritual care for cancer patients and oncology nurses: a qualitative study. *Asia Pac J Oncol Nurs 6(2):137–144*. [https://doi.org/10.4103/apjon.apjon\\_37\\_18](https://doi.org/10.4103/apjon.apjon_37_18)
6. Gomez R, Fisher JW (2003) Domains of spiritual well-being and development and validation of the Spiritual Well-Being Questionnaire. *Personality Individ Differ 35(8):1975–1991*
7. Cheng CT, Wang GL, Ho SM (2020) The relationship between types of posttraumatic growth and prospective psychological adjustment in women with breast cancer: a follow-up study. *Psychooncology 29(3):586–588*. <https://doi.org/10.1002/pon.5312>
8. Paredes AC, Pereira MG (2018) Spirituality, distress and posttraumatic growth in breast cancer patients. *J Relig Health 57:1606–1617*. <https://doi.org/10.1007/s10943-017-0452-7>
9. Malkawi SH, Alqatarneh NS, Fehringer EK (2020) The influence of culture on occupational therapy practice in Jordan. *Occup Ther Int 2020:1–9*. <https://doi.org/10.1155/2020/1092805>
10. Norris L, Walseman K, Puchalski CM (2013) Communicating about spiritual issues with cancer patients. In *New challenges in communication with cancer patients* (pp. 91–103). Springer, Boston. [https://doi.org/10.1007/978-1-4614-3369-9\\_8](https://doi.org/10.1007/978-1-4614-3369-9_8)
11. Braun V, Clarke V (2012) Thematic analysis. In: Cooper H, Camic PM, Long DL, Panter AT, Rindskopf D, Sher KJ (eds) *APA handbook of research methods in psychology, Vol. 2. Research designs: quantitative, qualitative, neuropsychological, and biological*. American Psychological Association, pp 57–71. <https://doi.org/10.1037/13620-004>
12. Lee YH, Salman A (2018) The mediating effect of spiritual well-being on depressive symptoms and health-related quality of life among elders. *Arch Psychiatr Nurs 32(3):418–424*. <https://doi.org/10.1016/j.apnu.2017.12.008>
13. Afrasiabifar A, Mosavi A, Jahromi AT, Hosseini N (2021) Randomized controlled trial study of the impact of a spiritual intervention on hope and spiritual well-being of persons with cancer. *Investig Educ Enfermería 39(3)*. <https://doi.org/10.17533/udea.iee.v39n3e08>
14. Moghimian M, Irajpour A (2019) The requirements of hospital-based spiritual care for cancer patients. *Support Care Cancer 27(7):2643–2648*. <https://doi.org/10.1007/s00520-018-4569-3>
15. Trussion D, Pilnick A, Roy S (2016) A new normal?: women's experiences of biographical disruption and liminality following treatment for early stage breast cancer. *Soc Sci Med 151:121–129*. <https://doi.org/10.1016/j.socscimed.2016.01.011>
16. Dauphin S, Van Wolputte S, Jansen L, De Burghgraeve T, Buntinx F, van den Akker M (2020) Using liminality and subjunctivity to better understand how patients with cancer experience uncertainty throughout their illness trajectory. *Qual Health Res 30(3):356–365*. <https://doi.org/10.1177/1049732319880542>

17. Leão DCMR, Pereira ER, Pérez-Marfil MN, Silva RMCRA, Mendonça AB, Rocha RCNP, García-Caro MP (2021) The importance of spirituality for women facing breast cancer diagnosis: a qualitative study. *Int J Environ Res Public Health* 18(12):6415. <https://doi.org/10.3390/ijerph18126415>
18. Reed PG (2021) Self-transcendence: moving from spiritual disequilibrium to well-being across the cancer trajectory. *Semin Oncol Nurs* 37(5):51212. <https://doi.org/10.1016/j.soncn.2021.151212>
19. Aoki S, Fujita S (2021) Self-transcendence of Japanese female breast cancer patients with hereditary breast and ovarian cancer syndrome. *Asia Pac J Oncol Nurs* 8(6):670–678. <https://doi.org/10.4103/apjon.apjon-218>
20. Tedeschi RG, Calhoun LG (2004) Posttraumatic growth: conceptual foundations and empirical evidence. *Psychol Inq* 15(1):1–18. [https://doi.org/10.1207/s15327965pli1501\\_01](https://doi.org/10.1207/s15327965pli1501_01)
21. Hamama-Raz Y, Pat-Horenczyk R, Roziner I, Perry S, Stemmer SM (2019) Can posttraumatic growth after breast cancer promote positive coping?—a cross-lagged study. *Psychooncology* 28(4):767–774. <https://doi.org/10.1002/pon.5017>
22. Casellas-Grau A, Ochoa C, Ruini C (2017) Psychological and clinical correlates of posttraumatic growth in cancer: a systematic and critical review. *Psychooncology* 26(12):2007–2018. <https://doi.org/10.4103/apjon.apjon-218>
23. Steinhäuser KE, Fitchett G, Handzo GF, Johnson KS, Koenig HG, Pargament KI, ..., Balboni TA (2017) State of the science of spirituality and palliative care research part I: definitions, measurement, and outcomes. *J Pain Symptom Manag* 54(3), 428–440. <https://doi.org/10.1016/j.jpainsymman.2017.07.028>

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.