







Impact of gynecological cancers on health-related quality of life: historical context, measurement instruments, and current knowledge

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Received 14 July 2023

Accepted 24 August 2023

Published Online First

11 September 2023



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To cite: Gil-Ibanez B, Davies-Oliveira J, Lopez G, et al. *Int J Gynecol Cancer* 2023;**33**:1800–1806.

ABSTRACT

Gynecologic cancers, comprising 14.4% of newly diagnosed cancer cases in women globally, are substantial causes of both mortality and morbidity, with a profound impact on the quality of life (QoL) of survivors. Over the past few decades, advancements in interdisciplinary and interprofessional care have contributed to an increase in the average life expectancy of gynecological cancer patients. However, the disease and its treatments have a profound impact on patients, leading to physical changes and psychological consequences, including psychosocial and psychosexual effects, which negatively affect their QoL.

The primary objective of management strategies is to minimize harm while improving survival rates and enhancing QoL during the survivorship stage. QoL measures play a crucial role in enhancing our comprehension of how cancer and its treatments affect individuals. Consequently, various measurement instruments, such as the EORTC QLQ 30, PROMIS-29, FACT-G, and QOL-CS, have been developed to assess health-related quality of life (HRQoL). Pre- and post-treatment HRQoL measurements have been shown to be predictive factors for post-operative complications and prognostic factors for overall survival and progression-free survival in gynecological oncology patients. Patient-reported outcomes related to HRQoL are essential tools for measuring patient outcomes and enabling patient-centered clinical decision-making. This article focuses on HRQoL, providing a historical context, summarizing measurement instruments, and discussing the current understanding of the impact of gynecological cancers on HRQoL.

INTRODUCTION

Gynecological cancers account for 14.4% of new cancer cases affecting women worldwide.¹ Each cancer type has a specific symptom burden on survivors' quality of life (QoL). In the last few decades, mainly due to the development and adoption of interdisciplinary and interprofessional care into clinical practice, the average life expectancy of gynecological cancer patients has increased.¹ However, gynecological cancer and its associated treatment presents

a major life event leading to physical changes and psychological impacts including psychosocial and psychosexual effects, adversely affecting patient's QoL.

Management strategies aim to minimize harm while improving survival rates, thus improving QoL during the survivorship stage. In this review we contextualize health-related quality of life (HRQoL), giving a historical context, summarizing HRQoL measurement instruments, and our current knowledge of the impact of gynecological cancers on HRQoL.

WHAT IS HRQOL?

Overview of the Historical Context

The term 'quality of life' in healthcare was first described by the WHO in 1948. According to the WHO, "health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic, or social condition.² Since its implementation as a concept, numerous authors have debated the definition of QoL within cancer care.

In 1949, Karnofsky and Burchenal, while clinically evaluating chemotherapeutic agents in cancer treatment, described patients' subjective improvement in terms of mood and attitude, general feelings of well-being, activity, appetite, and the alleviation of distressing symptoms, such as pain, weakness, and dyspnea.³ Thus, addressing the improvement of general health, including both psychological and physical aspects, was first introduced as a beneficial concept within this context.

In the early 1980s, De Haes and van Knippenberg emphasized the necessity of including QoL measurement in cancer research⁴ and Calman sought to define HRQoL in cancer patients. He suggested that QoL measures the difference, or the gap, at a particular period of time between the hopes and expectations of an individual and the reality of their present

experience. Consequently, to improve HRQoL it is necessary to narrow the difference between aspirations and what actually happens in reality. The overall aim would be to help individuals achieve their chosen life objectives.⁵

In North America in 1988, Cella echoed Calman's conclusions and later postulated that QoL is both subjective, thus requiring measurement from the patient's perspective, and multidimensional, needing a broader and objective inquiry of the patient's life, including functional ability, physical, emotional, and social well-being.⁶ In Europe, Aaronson's group proposed that QoL in cancer patients should be measured in four health dimensions: physical health (somatic sensations, disease symptoms, treatment side effects), mental health (ranging from a positive sense of well-being over nonpathological forms of psychological distress to diagnosable psychiatric disorder), social health (both quantitative and qualitative aspects of social contacts and interactions), and functional health (including both physical functioning in terms of self-care, mobility, and physical activity level and social role functioning in relation to family and work).⁷ Beyond these core dimensions, other measures incorporate variables that are specific to a given disease, treatment, or research situation. This modular approach was utilized by the European Organisation for Research and Treatment of Cancer (EORTC) Quality of Life Group (QLG) in the development of the first version of their guidelines for HRQoL in 1993.⁸

The most recent definition for QoL is defined by the WHO as an "individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns".⁹ HRQoL within this context can be defined as the way health is empirically estimated to affect QoL.

Measurement Instruments for Assessing HRQoL

HRQoL measures have been developed to enhance our understanding of people's self-perceived health status by translating complex personal feelings and experiences into numeric scores. Successful symptom management requires effective measurement instruments to identify symptoms over the course of the disease. As Calman wrote,⁵ QoL can only be described and measured in terms of the individual. Patients provide a unique perspective on treatment effectiveness with health-related outcomes only known to the patient and which are not captured by traditional medical outcomes (5-year survival or more recently progression-free survival). The incorporation of patient-reported QoL indicators enables the measurement and evaluation of disease and treatment impact at different time points in the patient's cancer journey.

A patient-reported outcome (PRO) is any direct report of the patient's health status, without interpretation or interference of the patient's response by a healthcare practitioner. The HRQoL measured by PRO instruments refers to a patient's symptom of concern or an aspect of functioning directly related to disease status. PRO measures represent the effect of disease, such as fatigue or anxiety, on health and functioning, exclusively seen from the patient perspective. Quantifying a subjective judgment into an objective measure is challenging and must be both accountable and comparable. Additionally, a reliable PRO measurement instrument should also provide evidence of its usefulness to the target population of patients. PROs collected on validated questionnaires are known as patient-reported outcome measures (PROMs).

Oncology has a long and rich tradition of evaluating PROs. In 1981, Spitzer et al presented their concise QL-Index for physicians.¹⁰ The HRQoL variables included physical, social, and emotional functions divided into questions about activities, self-care, general health, social support, and life outlook. Between 1987 and 1990, the EuroQoL Group went on to develop a five-dimension HRQoL instrument, the 'EuroQoL instrument', which later was denominated 'EQ-5D'. Originally comprising 12 items, the EQ-5D was recently revised and augmented to include 22 items.¹¹

In 1988, the Functional Assessment of Chronic Illness Therapy (FACIT) measurement system was designed for several chronic conditions, disease symptoms, treatment side effects, and patient-centered outcomes and eventually evolved to a cancer-specific measure of HRQoL, the Functional Assessment of Cancer Therapy-General (FACT-G). Based on Cella's two fundamental principles of QoL – subjectivity and multidimensionality – the FACT-G constitutes the core of all subscales and can be used in patients of any tumor type. It is a 27-item questionnaire designed to measure four domains of HRQoL in cancer patients: physical, social, emotional, and functional well-being.¹²

The conceptual model of QoL in cancer survivors (QOL-CS) by Ferrell, Dow, and Grant (1995) was based on previous versions of a QoL instrument initially developed at the City of Hope National Medical Center in Duarte, California, USA. QOL-CS was conceived to measure the specific concerns of long-term cancer survivors. The model, revised and validated in cancer survivorship studies, includes 41 items representing the four domains of QoL: physical, psychological, social, and spiritual well-being. Ferrell and colleagues conducted a study to evaluate the psychometrics of this revised instrument and its correlations with the FACT-G tool developed by Cella.¹³ There existed a moderate to robust correlation among correlated subscales, such as QOL-CS Physical to FACT Physical, QOL-CS Psych to FACT Emotional, and QOL Social to FACT Social. The overall correlation between QOL-CS and FACT-G total stood at 0.78.

The PROMIS model (2004), based on the WHO definition of health, was developed in the National Institutes of Health (NIH) Roadmap for Medical Research Initiative to use measurement science to create a state-of-the-art assessment system for self-reported health.¹⁴ Since then, over 100 item banks have been developed covering different aspects of physical, mental, and social health. The PROMIS-29 profile has a 29-item instrument combining short assessments of eight core constructs of HRQoL: physical function, sleep disturbance, pain interference and pain intensity, fatigue, anxiety, depression, and ability to participate in social roles and activities.¹⁵

Finally, the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ 30) is a well established and utilized HRQoL assessment tool in cancer clinical trials available in more than 100 different languages.¹⁶ It assesses HRQoL via PROs through scoring of the global health status (higher scores represent higher HRQoL), a functional scale of five items (physical, role, cognitive, emotional, and social; higher scores representing higher levels of functioning), and a symptom scale of nine items (fatigue, nausea and vomiting, pain, dyspnea, insomnia, appetite loss, constipation, diarrhea, and financial difficulties; higher scores representing lower HRQoL).⁸ Additionally, EORTC developed specific modules in the field of gynecologic oncology to be

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administered in addition to the core questionnaire: the QLQ-CX24 module for cervical cancer,¹⁷ the QLQ-OV28 for ovarian cancer,¹⁸ and the EORTC QLQ-EN24 for endometrial cancer.¹⁹ Guidelines for the interpretation of clinical relevance for the EORTC QLQ-C30 results are available and can be applied to categorize trivial, small, medium, and large HRQoL impacts.²⁰

Comparisons between EORTC QLQ-C30 and PROMIS-29 have recently shown similar scores and satisfactory agreement in conceptual and statistical analysis underscoring their proximity in capturing the concept of health. There are currently no score transformation algorithms or calibration of both instruments on common scales which would increase the comparability of clinical and research patients reported outcomes data collected with either instrument. However, equivalence of both instruments for health conception is suggested by the fact that both are recommended by the U.S. Food & Drug Administration (FDA) (2021) in their current guidance, 'Core Patient-Reported Outcomes in Cancer Clinical Trials'.²¹

HRQOL IN GYNECOLOGIC ONCOLOGY

Pre-treatment and post-treatment assessments of HRQoL have consistently shown independent predictive value for post-operative complications, as well as prognostic significance for overall survival and progression-free survival in patients with gynecologic tumors. A prospective study involving 40 patients revealed that impaired physical functioning, being overweight or obese, and reduced scores on the Mini-Mental State Examination (MMSE) were predictive of severe post-operative complications. Integrating pre-operative HRQoL measurements into clinical pathways could help identify individuals at higher risk of post-operative complications, enabling personalized management to improve cancer-related outcomes.²² Furthermore, a meta-analysis of individual patient data from EORTC clinical trials demonstrated that HRQoL parameters such as physical functioning, pain, and appetite loss provided significant prognostic information in addition to age, sex, and distant metastases. When considering these HRQoL parameters along with sociodemographic and clinical data, the predictive accuracy for overall survival increased by 6% compared with relying solely on sociodemographic and clinical characteristics. This suggests that HRQoL data can contribute to predicting survival in cancer patients.²³ In the context of advanced ovarian cancer, a randomized trial revealed that baseline performance status and global QoL scores (assessed with QLQ-C30) were prognostic factors for both progression-free survival and overall survival. Higher baseline cognitive functioning scores were also associated with improved survival. Additionally, global QoL scores at three different time points following the completion of chemotherapy proved to be of prognostic significance for overall survival, although not for progression-free survival.²⁴

While the cancer process itself can impact on HRQoL, the subsequent diagnosis and treatment add to this burden. Treatment is primarily surgical including the removal of the ovaries, uterine tubes, uterus cervix, and lymph nodes. Many patients will have adjuvant treatment including chemotherapy, radiotherapy, or immunotherapy or will undergo maintenance therapies. Physical impacts of surgery include post-operative infections, lymphedema, and the abrupt depletion of hormones due to ovarian function loss.

Chemotherapy and radiotherapy may have hematological, gastrointestinal, genitourinary, respiratory, and skin consequences as well as sleep disturbance. Reviews and prospective studies from the last 10 years addressing HRQoL in gynecologic oncology are summarized in [Table 1](#).

In a survey of 1029 long-term survivors of gynecological cancers (median 4.9 years post-diagnosis) many reported ongoing symptoms suggestive of residual side effects from prior treatment. The ten most common side effects were fatigue (44.3%), sexual dysfunction (35.7%), sleep disturbance (35.3%), neurologic symptoms (35.2%), urinary dysfunction (33.0%), bowel problems (31.2%), memory problems (30.8%), depression (26.4%), anxiety (19.3%), and lymphedema (17.6%).²⁵

The removal of ovaries signifies abrupt hormonal deprivation that can trigger severe debilitating climacteric symptoms and urogenital atrophy impacting negatively on HRQoL. In pre-menopausal women, removal or impairment of the ovaries causes infertility. In one study of 20 pre-menopausal gynecological cancer patients who experienced removal of their ovaries, 40% had depressive symptoms, 35% moderate to severe distress, 67% were dissatisfied with their overall sex lives, with 56% having low levels of sexual desire and 62% experiencing dyspareunia.²⁶ Fertility preservation, including surgical approaches, assisted reproductive techniques, ovarian transposition, and cryopreservation of oocytes or embryos, when indicated, are an important consideration and have been shown to improve QoL.²⁷

Living life with incomplete reproductive and sexual organs as well as the fear of recurrence can pose a heavy psychological burden on survivors. The psychological impacts include a higher rate of anxiety, depression, and post-traumatic stress disorder. Emotional distress is also common caused by the possible disruption of social and intimate relationships. A focus on psychosocial well-being is vital in tackling this burden among cancer survivors. However, lifestyle interventions including psychosocial and exercise interventions have failed to demonstrate improvements in HRQoL in two large meta-analyses.^{28,29}

More than half of women living with gynecological cancers experience sexual difficulties and yet it is undermanaged.³⁰ Sexual function is difficult to measure due to multifactorial influences and should be measured over the course of the disease at regular intervals as dysfunction often occurs early and persists beyond the period of physical recovery. Despite being an integral part of psychological adjustment and HRQoL, sexual function is often studied separately to these, denying an overview insight into the interplay of this with other complexities associated with overall HRQoL. In gynecological cancer survivors, sexual morbidity covaried with worsened depressive symptoms, body change stress, and psychological HRQoL. Survivors of gynecologic cancer also reported less sexual desire and less ability to climax than a control group. In a prospective study of 55 patients, changes in sexuality after gynecological cancer treatment included distortion of self-image (45%), dry vaginal mucosa (25%), and fear of physical harm and dyspareunia (20%).³¹ Protective factors to mitigate sexual morbidity have been found to be a confident and knowledgeable healthcare practitioner, a preventative approach to management, a risk and needs assessment, good communication between caregiver and patient, relationship quality, and the encouragement of good communication, psychosocial support, symptom management, psychosexual

Table 1 Studies evaluating gynecologic oncology health-related quality of life (HRQoL) impact from the last 10 years

Study details	Cancer type	Participant information	HRQoL tools used	Outcomes	Conclusions
Malandrone et al ⁴⁸ (2022) Literature review	Vulval	n=300 studies	Mixture of QoL tools	<ul style="list-style-type: none"> ▶ Depressive and anxiety symptoms were more frequent ▶ Vulvar cancer may have a negative effect on sexuality (physical, psychological, and behavioral) ▶ Impact factors: shame, insecurity, or difficulties in self-care and daily activities 	Need to better investigate this field and to identify strategies to relieve psychological distress
Roussin et al ³² (2021) Systematic review of sexual quality of life (SQoL)	Mixed	n=46 studies	Mixture of QoL tools	<ul style="list-style-type: none"> ▶ SQoL varies across subgroups based on age, menopausal status, relationship status, and treatment modality ▶ Young, single, pre-menopausal women who underwent radiotherapy or radical surgeries have an increased risk for severe sexual dysfunction and psychosexual distress 	<ul style="list-style-type: none"> ▶ A better understanding of factors of SQoL could protect and improve it ▶ More research needed dealing with psychosexual distress
Sehouli et al ²² (2021) Prospective study of pre-operative QoL	Mixed (mostly ovarian cancer)	n=226 participants	EORTC QLQ-C30 NCCN DT	<ul style="list-style-type: none"> ▶ Impaired physical functioning (OR 5.08), being overweight or obese (OR 5.44), and a reduced Mini-Mental State Examination (OR 7.94) were predictive of severe post-operative complications ▶ Pre-operative QoL measurements could help predict post-operative complications 	Investigate whether pre-operative symptom control can reduce the rate of post-operative complications and underline the need for prehabilitation approaches
Shisler et al ⁴¹ (2018) Systematic review of PROs in gynecologic cancer	Endometrial cancer	n=27 studies	EORTC QLQ-C30 SF-36 FACT-G FSFI	<ul style="list-style-type: none"> ▶ Obesity associated with lower QoL and physical functioning ▶ Treatment type affects several QoL outcomes ▶ Sexual function outcomes were dependent on age, time since diagnosis, and consulting a physician before engaging in sexual activities ▶ A physical activity intervention improved sexual interest but not sexual function 	Factors that contribute to QoL, such as pain, fatigue, emotional, and social functioning, should be monitored following an endometrial cancer diagnosis
Westin et al ²⁵ (2016) Cross-sectional survey QoL in USA	Mixed	n=1029 participants	Co-created local questionnaire (not validated)	<ul style="list-style-type: none"> ▶ The ten most common side effects were fatigue (44.3%), sexual dysfunction (35.7%), sleep disturbance (35.3%), neurologic symptoms (35.2%), urinary dysfunction (33.0%), bowel problems (31.2%), memory problems (30.8%), depression (26.4%), anxiety (19.3%), and lymphedema (17.6%) 	Counsel patients regarding potential long-term medical issues related to the disease and cancer treatment
Smits et al ²⁸ (2015) Systematic review and meta-analysis of interventions to improve HRQoL	Endometrial and ovarian cancer	n=8 studies n=413 patients	Mixture of QoL tools	<ul style="list-style-type: none"> ▶ Lifestyle interventions may improve physical functioning, significantly reduce fatigue, and significantly increase weight loss in endometrial cancer survivors ▶ Lifestyle interventions in ovarian cancer survivors may result in QoL improvements 	Further lifestyle intervention studies in the gynecological cancer population including on a long-term basis to determine its exact effect on QoL outcomes

DT, NCCN Distress Thermometer; FACT-G, Functional Assessment of Cancer Therapy-General; FSFI, Sexual Function Abbreviated Index; HADS, Hospital Anxiety and Depression Scale; HRQoL, health-related quality of life; OR, odds ratio; PRO, patient-reported outcome; EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire; QoL, quality of life; SF-36, 36-Item Short Form Survey (RAND 36-Item Health Survey).

support, and self-efficacy in rediscovering sexuality.³² Better integration of sexual rehabilitation into routine clinical care would optimally manage sexual issues and further contribute to an improved psychological adjustment and HRQoL.

For those experiencing disease progression, the cancer cachexia syndrome of fatigue, nausea, anemia, and immunosuppression have serious implications for HRQoL. Palliative care can improve HRQoL among gynecological oncology end-stage patients, and for

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those requiring end-of-life care a hospice setting improves HRQoL significantly.³³

OVARIAN CANCER

Ovarian cancer is insidious in symptomatology, mainly diagnosed in its later stages, remaining the most challenging gynecological cancer with the poorest 5-year survival. Alongside cervical cancer it is the most studied cancer for HRQoL measures. A 2010 literature review revealed that ovarian cancer survivors generally had a good long-term HRQoL; however, they were more likely to experience psychological distress and sexual impairment. There were no appreciable differences between those with early- and late-stage disease.³⁴ Physical complications and side effects have been shown to have a significant impact on the psychosocial health of ovarian cancer survivors. Post-traumatic stress disorder measures were found in a small proportion of those with early-stage disease but not in those with late-stage disease. Age also appeared to be a factor, with more HRQoL distress demonstrated in younger patients. Testing for CA125 in the survivorship phase caused heightened anxiety and impairment to HRQoL. Fear of cancer recurrence is also a pressing concern for most survivors.³⁵

Sexual dysfunction is common, with one study demonstrating that of the 50% who were sexually active, 47% had little or no desire, 80% had vaginal dryness, and 62% had pain or discomfort during penetration.³⁶ These low levels of sexual activity and satisfaction could cause or potentiate relationship tension, furthering the development of distress, depression, and anxiety. However, HRQoL has been shown to improve for some, especially those that experience spiritual growth and strengthened personal relationships.³⁵

ENDOMETRIAL CANCER

Endometrial cancer, by contrast, is mostly detected early due to the cardinal symptom of uterine bleeding and a well-developed pathway for investigation. Surgery is the primary treatment modality and there is conflicting information as to whether the surgical approach – open versus laparoscopic – impacts on HRQoL. In the LAP2 trial, a 6-week post-surgery modest advantage in body image and return to work was seen in the minimally invasive surgical group but at 6 months there was no difference in terms of HRQoL between the two groups.³⁷ The LACE study, however, favored the minimally invasive approach up to 6 months after surgery.³⁸ Similarly to cervical cancer, sentinel lymph node biopsy decreased the risk of post-treatment lymphedema compared with lymphadenectomy in endometrial cancer survivors, therefore improving HRQoL.³⁹

External beam radiation therapy is associated with more severe bowel, bladder, and sexual dysfunction compared with brachytherapy for more than 7 years after treatment. These negative impacts on HRQoL are important considerations to discuss with patients. However, there was no significant impact on overall QoL or difference in cancer survivorship issues that were enduring.⁴⁰ The RAINBO suite of studies will provide more information on the HRQoL impacts of adjuvant endometrial treatments tailored according to the molecular classification of endometrial cancer.

Endometrial cancer patients have been shown to suffer from a decreased HRQoL with increased stress, anxiety, depression, sexual

dysfunction, and sleep deprivation. Sexual function in endometrial cancer survivors is dependent on age, time since diagnosis, and whether the patient consulted a physician before engaging in sexual activity.⁴¹ Obesity, a known risk factor for endometrial cancer, has also been consistently found to be associated with lower HRQoL and physical functioning.

CERVICAL CANCER

Despite the availability of primary and secondary prevention, cervical cancer continues to burden an underscreened population, impacting mainly on the pre-menopausal population. Early-stage disease is managed with surgical treatment while late-stage disease is treated with chemoradiation.

Radiotherapy treatment is generally associated with reduced HRQoL by comparison to surgery or chemotherapy, with treatment side effects persisting for up to 10 years post-treatment.⁴² Radical hysterectomy, the standard surgical treatment for early-stage disease, has been associated with decreased lubrication, a shortened vaginal length, a lack of sensation, and dyspareunia. However, nerve-sparing approaches have been shown to reduce bladder, sexual, and bowel issues. Historically, a minimally invasive surgical approach was adopted with the belief that it improved HRQoL; however, the recent LACC trial demonstrated better survival outcomes for the open approach, revealing no difference in HRQoL between open and minimally invasive radical hysterectomy groups over at least a 3-month period.⁴³ The sentinel lymph node biopsy technique has far better HRQoL outcome data, notably with less severe leg heaviness and fatigue, than when a full pelvic lymphadenectomy is performed.⁴⁴

Despite the preservation of ovaries for most treated cervical cancer patients there is an impairment of sexual function reflecting that of a young cancer survivor's cohort, with no difference across treatment modalities.⁴⁵ There is evidence to suggest that mental health is worse for survivors than in the reference population and depression, fatigue, and pain have been associated with lower HRQoL in long-term cervical cancer survivors.⁴⁶

VULVAR CANCER

Vulvar cancer may have the greatest impact on HRQoL due to its external position and often disfiguring management. Sexual dysfunction is common and linked with the type and radicality of surgical management, with an older age and a more extensive excision demonstrating poorer sexual function and HRQoL. Also, a full inguinal lymphadenectomy is associated with a high likelihood of lower limb lymphedema, which has a significant impact on appearance, mobility, finances, and self-image, lowering the HRQoL.⁴⁷ Depression and anxiety symptoms were more frequent in this patient cohort. Important factors for HRQoL in this group include shame and insecurity, with difficulties in self-care and daily activities. A recent literature review concluded that an integrated model of care is needed to help recognize and address patient unmet needs.⁴⁸

HRQOL IN GUIDELINES

In more recently published guidelines, comprehensive advice on HRQoL has been included with the goal of providing holistic care

for those with gynecological tumors. The recently published 2023 ESGO/ESTRO/ESP guideline for the management of patients with cervical cancer has extended the recommendations for QoL and palliative care, including the importance of adverse treatment effects and a multidisciplinary approach to psychosocial suffering.⁴⁹ Furthermore, a general comprehensive document with recommendations and algorithms is available in the National Comprehensive Cancer Network 'NCCN Guidelines for Survivorship'.⁵⁰ These guidelines recommend using a non-validated survey including 28 items related to 12 survivorship concerns (cardiac health, anxiety, depression, trauma and distress, cognitive function, fatigue, lymphedema, pain, hormone-related symptoms, sexual function, sleep disorder, healthy lifestyle, immunizations and infections, and employment/return to work).

CONCLUSIONS

Quality of life (QoL) measures play a crucial role in enhancing our understanding of how cancer and its treatments affect individuals. Gynecologic cancers and their therapies have been found to have a detrimental impact on health-related quality of life (HRQoL). In the last decades, concerns about QoL have increased and various measurement instruments have been developed to assess HRQoL, including the EORTC QLQ 30, PROMIS-29, FACT-G, and QOL-CS. HRQoL PROs are essential tools for measuring patient outcomes and facilitating patient-centered clinical decision-making.

Gynecological cancer treatments, including surgery, chemotherapy, and radiotherapy, can have significant physical and psychological impacts. Pre- and post-treatment HRQoL measurements have been shown to be predictive factors for post-operative complications and prognostic factors for overall survival and progression-free survival in gynecological oncology patients. Sexual difficulties are common among women with gynecological cancers, but they are often undermanaged, and more attention needs to be given to addressing sexual function as an integral part of HRQoL.

By establishing HRQoL assessments in clinical practice and incorporating them into research projects, healthcare professionals can gain a deeper understanding of patients' needs, optimize treatment strategies, and ultimately improve the overall care and well-being of individuals with gynecological cancers. Further research is needed in this area to evaluate the effectiveness of these approaches.

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Contributors BG-I, JD-O, and GL contributed to the conception and design of the study and drafted the manuscript. BD-F, AT-G, and JS provided critical review of the

content. All authors have read and approved the final version of the manuscript for publication.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

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