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Systematic Review

Health related quality of life scales in women diagnosed with gynecological and breast cancer: the role of resilience. A systematic review

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Objective: Resilience and health-related quality of life are factors to be valued today in all types of patients for their relationship to well-being and health. Any stressful situation can significantly impact quality of life and resilience and there are numerous scales to rate these aspects. The main objective of this review is to describe the most used health-related quality of life and resilience scales in gynecological and breast cancer patients to highlight the limitations. *Data sources*: A review of literature in Pubmed, MEDLINE, Cochrane Database and Google Scholar was carried out to identify articles on health-related quality of life in oncological patients published in English between 2000 and 2020. *Methods of study selection*: The review was done following the PRISMA guidelines. *Tabulation*: A total of 460 papers were identified using MeSH terms but finally, according to the inclusion and exclusion criteria, we evaluated 41. *Integration and results*: Questionnaires have a good performance to quantify quality of life and resilience in oncological patients in general. However, most publications were not focused on patients with gynecological cancer. *Conclusions*: Due to the particularities of the group of patients with gynecologic and breast cancer secondary to their treatment significantly affecting several areas and domains, it is necessary to validate specific scales for them in order to offer these patients the correct management of their disease at all levels. The role of resilience, premature and iatrogenic menopause and mutilating surgeries are essential to understand the uniqueness of health-related quality of life in gynecological and breast cancer patients.

Keywords

Resilience; Health related quality of life; Gynecological cancer; Breast cancer

1. Introduction

Health-related quality of life (HRQoL) is the perception of aspects of life that are most likely to be affected by changes in health status and it is a multidimensional building consisting of physical health, functional health, emotional function, role limitations, and social functions [1]. There are several quality-of-life scales and some of them specifically targeted to breast cancer and gynecological patients [1]. However, factors as important in the quality of life of oncological women as resilience or iatrogenic menopause are under-explored.

Resilience is considered an important factor of mental health and well-being, also related to optimism, positive emotions, social support and quality relationships [2–4].

It is described as the capacity of an individual to succeed adversity [3, 5]. Multiple organizations have highlighted its utility in the improvement of quality of life, especially in vulnerable groups like oncological patients [4, 6]. It would be convenient to identify its predictive, personal and environmental factors to enhance any health system [7, 8].

Recent research has shown that there is an association between resilience and cancer, and some authors indicate that high resilience reduces the impact of diagnosing it and leads to a better quality of life, as well as ensures satisfactory health results despite stress [9, 10]. This fact supports that psychological reinforcement and the fostering of resilience can be fundamental tools in the treatment of cancer [2, 7, 11]. That is why, resilience has been pointed as a major issue for caring patients with cancer [2], as it can help patients to deal with the affliction and cancer-related troubles. It can be extrapolated to cancer risk mutations carriers too [12–15]. Nevertheless, there are no scales of resilience and health-related quality of life pointed specifically at gynecological and breast cancer patients.

The objective of this review is to analyze and describe the main health-related quality of life and resilience scales used in gynecological and breast cancer patients and to outline the possible areas in which it would be necessary to work in to obtain truthful results in gynecological and breast cancer patients particularly because nowadays the scales have some limitations, not being as specific as it would be necessary to explore these dimensions. If the scales were targeted to the sort of patient particularly, it would be easier to support the patients and give them the required tools to handle their illness and all that this implies.

1.1 Gynecological and breast cancer

According to the latest available GLOBOCAN data, 18.1 million new cancer cases were diagnosed worldwide in 2018, increasing the incidence in recent years by 12% [16]. Cancer is the second leading cause of global morbidity according to World Health Organization (WHO), assuming millions of deaths each year worldwide [17].

According to the Spanish National Statistical Institute (INE), there are approximately 279,000 new cases a year of cancer in Spain, of which 116,000 are among Spanish women [18], gynecological cancers are the most frequently diagnosed assuming 45% of diagnoses in this group with the following frequency order in relation to REDECAN data: endometrium, ovary and tube, cervix, vulva and vagina [19–21]. Of course, breast cancer is at the top of the list in terms of prevalence.

Breast and gynecological cancer impact on health-related quality of life significantly. Both have their own particular symptoms: abdominal pain, abnormal uterine bleeding, pelvic masses… [12].

Furthermore, the side effects caused by treatment are diverse and singular starting with mutilating surgeries (exenterations or radical mastectomies), followed by inducing early menopause and even avoiding pregnancy in young women who have to undergo a hysterectomy. This leads to multiple physical and psychological adverse effects, which makes that the quality of life in these women is influenced by other aspects not explored on conventional quality of life scales [6, 22].

1.2 Global quality of life and health-related quality of life

The WHO defines quality of life (QoL) as the way the individual perceives his or her life, the place he or she occupies in the cultural context and the value system in which he or she lives, the relationship with his objectives, expectations, standards, criteria and concerns, all permeated by daily activities, physical health, psychological status, degree of independence, social relations, environmental factors and personal beliefs [23, 24].

Years ago, only the life expectancy of each population was given importance as an indicator of health and well-being [23]. However, this does not mean that the more years lived, the most years living well. That is why, in recent years, this concept has been left behind to give way to quality of life, taking this great relevance as a well-being marker. Living for many years must be accompanied by those years living well.

QoL is used in the Quality Adjusted Year of Life (QALY), which is a health status measure that considers both quantity and quality of life [23, 24]. A QALY equals one year in perfect health [24]. If an individual's health is below this maximum, QALYs accumulate at a rate of less than 1 per year, where being dead is associated with a QALY 0 [24]. QALY is used to evaluate health programs economically and according to profitability, to prioritize medical interventions [23–25].

Nonetheless, the overall weight of disease is assessed using the disability-adjusted life year (DALY), that combines years of life lost because of premature mortality (YLLs) and states of less than full health, or years of healthy life lost due to disability (YLDs). One DALY represents the loss of the equivalent of one year of full health [24, 25].

When we talk about QoL we should differentiate between 2 types [23, 24]:

- General Quality of Life (GQoL): It reflects a general sense of satisfaction with life and well-being [24].
- Health-related Quality of Life (HRQoL): consists of a perception of aspects of life that are most likely to be affected by changes in health status and is a multidimensional concept composed by physical health, functional health, emotional function, role limitations and social function [24]. These dimensions of HRQoL may be mediated by symptoms, personal factors, and environmental factors [25].

In an attempt to find a scale that accurately measured this concept, WHO designed the World Health Organization Quality of Life (WHOQOL-BREF) as a generic measure of quality of life, being the best one suited to it [24, 26–28].

However, depending on which group of people we want to assess the quality of life in, the questionnaires need to be adapted, so multiple scales have appeared and have been validated for specific groups of people [25, 26]. Nevertheless, these specific groups of people are not women with breast and gynecologic cancer so far.

1.3 Resilience

Resilience is defined as the ability to successfully overcome an adverse event, assuming a dynamic process of positive adaptation [2, 9]. In research, it is about clarifying what are the common characteristics that identify people able to positively adapt to stressful situations throughout life [4]. Thus, the concept of resilience consists of the set of qualities, resources or strengths that favor individuals to progress by successfully facing adversity. In other words, resilience does not derive from avoiding stressful situations, but from being exposed in a controlled manner to them so that their confrontation is a success [3].

2. Materials and methods

A search was performed to identify all papers including health-related quality of life scales used in oncological patients. Relevant English language articles were found by searching the electronic database PubMed (2000–2020) with specific MeSH terms corresponding to "health-related quality of life scales in oncological patients". To carry out the systematic review, the recommendations of the PRISMA review were followed.

For the search strategy, different combinations were used between the variables and the Boolean operators "AND" and "OR".

The PubMed search syntax used is as follows: "all study" [Publication Type] AND "health-related quality of life" [MeSH Terms] OR "All Fields" OR "scale" All Fields AND gynecological cancer [All Fields] OR "ovarian cancer" [MeSH Terms] OR "uterine cancer" [MeSH Terms] OR

Table 1. Internet resources of the main quality of life scales.

EORTC	https://qol.eortc.org/questionnaire/eortc-qlq-c30/	Official EORTC website
FACT	www.fact.org	Official FACT website
SF-36	http://www.sf-36.org/	Official SF-36 website

"cervical cancer" [MeSH Terms] OR "genital cancer" [MeSH Terms] OR "vulvar cancer" [MeSH Terms] OR "breast cancer" [MeSH Terms] OR "cancer" [MeSH Terms].

MEDLINE, Cochrane Database and Google Scholar were also reviewed to identify review papers on this topic in English language. The search in databases with search engines in English was carried out using the keywords: resilience, health related quality of life, gynecological cancer, breast cancer.

All studies were individually and collectively assessed for methodologic quality and strength of evidence. We only collected those in English and review papers, original articles and systematic reviews. The selection of articles was carried out by reading the title and abstract and later, by applying the inclusion and exclusion criteria.

Inclusion criteria:

- Original articles, review articles, articles in English and human study.
- Studies in which the health-related quality of life assessment includes gynecological and breast cancer patients.

Exclusion criteria:

- Articles without full text available or that did not present results.
- Articles without explanations on quality-of-life scales.

The titles and abstracts of 460 papers were reviewed, of which 41 were reviewed in full text because the rest were excluded because they did not meet the proposed inclusion criteria or met any exclusion criteria (Fig. 1).

3. Results

Within over two decades, a total of 460 papers were identified which according to the study selection criteria but finally 41 papers met the criteria to be included for evaluation. The findings were mainly summarized on several headings including instruments used to measure health-related quality of life and resilience in oncological patients. The following scales have been selected because they are the furthest used in oncological patient trials but they are not exclusive for gynecological patients.

3.1 Health related quality of life scales in oncological patients

The most important assessment tools used in oncological patients to measure health related quality of life are (Table 1):

- European Organization for Research and Treatment of Cancer (EORTC QLQ-C30) [29].
- Functional Assessment for Cancer Therapy-General (FACT-G) [30].
- Medical Outcomes Study Short Form-36 Health Survey (SF-36) [31].

Both FACT and EORTC questionnaires are managed specifically for cancer patients and gynecological cancer site—specific modules have been also developed [32]. The SF-36 has not been used that often in cancer populations, but has a great base of normative data from the general population to do comparisons [31]. There are no scales available for risk mutations carrier patients (BRCA, Lynch syndrome etc...).

3.1.1 European Organization for Research and Treatment of Cancer (EORTC)

EORTC, based on psychometric properties, has developed a core questionnaire focus on covering general quality-of-life issues relevant to cancer patients [33]. The first core questionnaire was EORTC QLQ-C36, consisting of 36 items and by the years went by, a 30 items version was developed and was called EORTC QLQ-C30 [29] (Appendix Fig. 2).

EORTC QLQ-C36 questionnaire comprises four functional scales, two symptom scales and a global subjective health status including pain, dyspnea, sleep problems and perceived financial impact items too [33]. EORTC QLQ-C30 reduce the eight-item emotional functioning scale in a four-item one, incorporates a pain item and extricates memory from concentration problems [29, 34].

EORTC QLQ-C30 includes [29]:

- 5 functional scales: physical/role/emotional/social/cognitive functioning;
- 3 symptom scales: fatigue/pain/nausea and vomiting;
- a global health status/quality of life scale;
- other single items: dyspnea/sleep/constipation/diarrhea/financial impact.

EORTC QLQ questionnaires have been translated and validated in more than 110 languages. Nowadays, the most recent version is QLQ-C30 Version 3.0 [29] and it is the one that should be used for all new trials as an important tool for evaluating generic aspects of QOL. However, a modular approach was adopted for disease-specific treatment measurements to manage its limitations [33].

The development of modules specific to tumor site, treatment modality or even a QOL dimension, has been an essential aspect of the "modular" approach to QOL assessment adopted by the EORTC QLG (Quality of Life Group). Those have to be always administered in addition to the core questionnaire (EORTC QLQ-C30) [34]. There are specific questionnaires on breast, cervical, endometrium, ovarian and vulva cancers as shown in Table 2 [12, 13, 15, 35, 36]. All of them are validated unless the vulva one which is in last stage of development. Besides this, there are not collected either sarcomas or vagina ones [13].

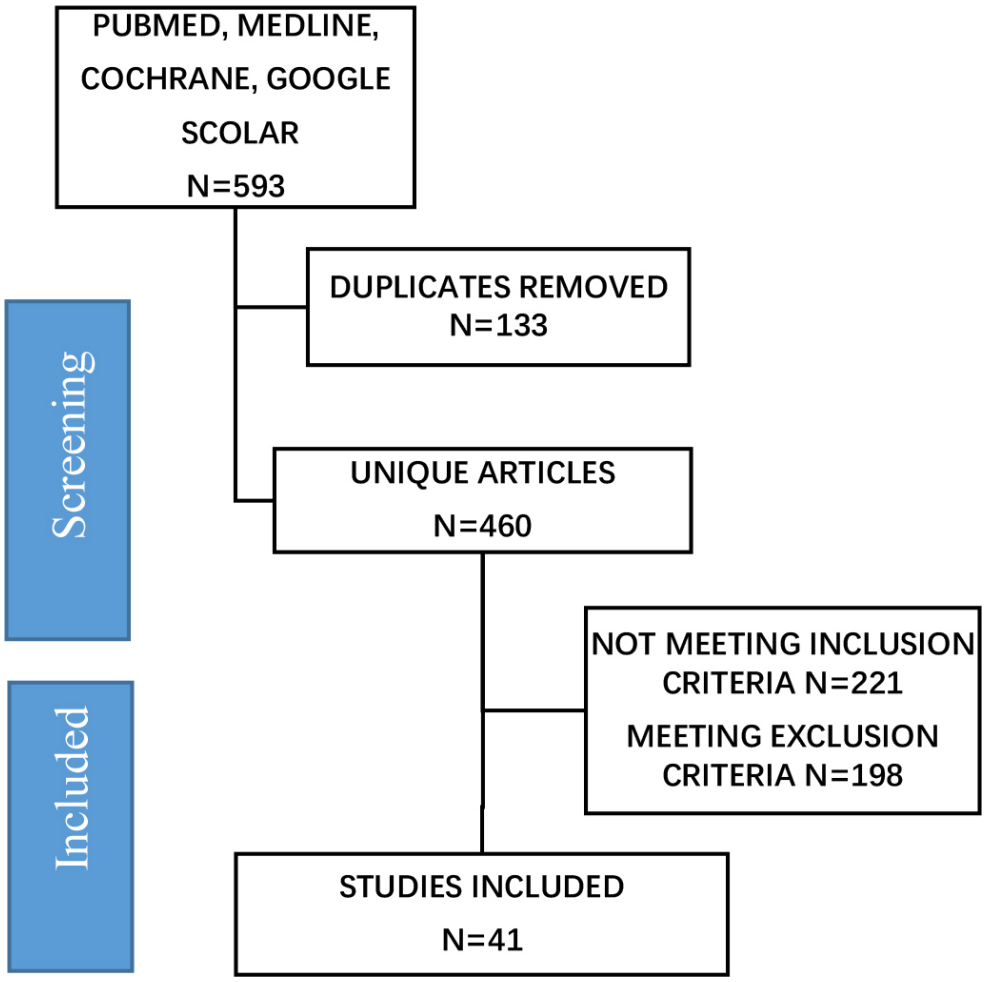

Fig. 1. Flow chart details of search process.

3.1.2 Functional Assessment for Cancer Therapy-General system (FACT-G)

The FACT-G is one of the furthest used instruments to evaluate cancer-specific quality of life that consists of four general subscales for specific quality of life domains (physical, social, emotional and functional well-being) and three specific modules (disease, treatment, and symptom) [30, 32]. The FACT-G has been translated into 27 languages and all of the subscales have been translated into five other languages at least [37] (Appendix Fig. 3). The format consists of a five-point ordinal Likert- type response. There are 12 cancer site-specific subscales and those specific to gynecological cancers are the FACT-Cx for patients with cervical cancer and the FACT-O for patients with ovarian cancer [30, 32].

3.1.3 Medical outcomes study short form-36 health survey (SF-36)

The SF-36 is a generic health-related quality of life questionnaire that was initially developed for the RAND Medical Outcomes Study and it is not specific to cancer patients [31]. The SF-12 and SF-8 are two shortened versions of the SF-36 questionnaire [12]. It is often used as a validation instrument to assess other quality of life questionnaires [31].

The SF-36 is comprised of 36 items, creating a profile of eight generic health concepts (measured by 2 to 10 items each) including general health, physical functioning, role-physical, vitality, bodily pain, role-emotional, social functioning, and mental health [38].

3.2 Resilience scales in oncological patients

Many authors have tried to create valid tools to consider resilience as an indicator of subjective well-being [7]. The most important assessment tools used in cancer clinical trials to measure resilience are:

- Wagnild and Young 14-item Resilience Scale (WYRS-14).
- Connor–Davidson Resilience Scale.

3.2.1 Wagnild and Young 14-item Resilience Scale (WYRS-14)

In Spanish, the Wagnild and Young 14-item Resilience Scale (WYRS-14) has been validated to quantify people's overall resilience as shown in Appendix Fig. 4 [8]. This version is based on Wagnild and Young's 25-item Resilience Scale from 1993 [8]. It measures the degree of individual resilience, considered as a characteristic of positive personality

Table 2. EORTC modular questionnaires.

QLQ-C30	Quality of life of cancer patients	General	Validated
QLQ-BR23	Breast	Module	validated
QLQ-BR45	Breast Cancer (update of QLQ-BR23)	Module	in development
QLQ-CX24	Cervical	Module	validated
QLQ-EN24	Endometrial	Module	validated
QLQ-OV28	Ovarian	Module	validated
QLQ-VU34	Vulva Cancer	Module	in development

that allows the individual to adapt to adverse situations. In addition, this scale correlates negatively with depression and anxiety. WYRS-14 measures two factors [2, 9]:

-Factor I (personal competence): 11 items about self-confidence, independence, decision, ingenuity and perseverance.

-Factor II (acceptance of oneself and life): 3 items about adaptability, balance, flexibility and perspective of stable living.

Each of the 14 items is graded on a Likert scale between 1 and 7 (1: totally disagreed and 7: totally agree), giving a total score between 14–98, with the highest scores indicating greater resilience [8, 9]. This new short version (RS-14) of Wagnild (2009) has been translated and validated into various languages and groups, including people with cancer in China (Tian & Hong, 2013) [39].

3.2.2 Connor-Davidson Resilience Scale (CD-RISC)

CD-RISC has both a long version of 25 items and a short version of 10 items [11]. Each item is scored on a 5-point Likert scale, with higher scores indicating higher levels of resilience [11]. Reliability and validity have been demonstrated in several distinct population groups. Although it has been used in cancer research, it is not validated in this group of patients [10].

There are not validated resilience questionnaires specifically for each type of cancer and therefore, not for breast and gynecological ones either.

4. Discussion

Nowadays, there are few specific quality-of-life scales for patients with gynecological and breast cancer. Moreover, those that exist do not properly reflect some gynecological cancer-specific features, such as resilience, premature menopause or sexuality, that is why despite gynecological cancer modules are slowly emerging, specific scales for gynecological and breast cancer are required to develop and expand itselves [15, 40].

The results showed that, although there are dimensions explored on all of them, each of the scales evaluates different aspects of quality of life and none of them are fully suited to a breast cancer or gynecological patient. Today, there are several different approaches to quality of life, ranging from a more functional to another more emotional approach, and the use of one or another scale will depend on the objective of each study [41].

Table 3 compares the similarities and differences between the main three scales of health-related quality of life used in oncological patients and shows which aspects are reinforced and which ones are underexplored. EORTC QLQ-C30 and FACT-G are shorter to fill than SF-36. This last one is the hardest because it has different types of questions: true or false, numeric Likert scales and categorical scales.

In terms of resilience, the WYRS-14 scale is easier to complete than the Connor-Davidson. The former having 14 items and the latter 25. Both scales are Likert type and both ask about solving problems, self-esteem or the ability to adapt to changes, without great differences between them. None of them explore sexual, self-physical perception or functional aspects. They are not targeted to oncological patients [8, 11].

Oliva *et al.* first time talked about resilience in oncological menopausal women. They affirm that cancer affects resilience and a higher resilience score seemed to be related to a better menopause-related quality of life in gynecological cancer patients. Because of the fact that resilience in oncological menopausal patients has not been evaluated before, this indicates that quality of life in women with a history of gynecological cancer is significantly related to their resilience score [25, 26].

It is necessary to emphasize how important it is to be able to improve the quality of life in women who have been diagnosed with gynecological cancer [12]. Not only focus on the early diagnosis of a fall, but also being able to monitor other aspects such as resilience that can influence in quality of life [40].

It is also important to refer that the treatments we often use in these women are not exempt from adverse effects. Early menopause, whether surgical, and therefore abrupt, or iatrogenic induced by chemotherapy, radiation therapy or hormone therapy, severely affects women's quality of life.

In short, many women worsen their quality of life because of cancer treatment [15, 35]. Due to the common peculiarities to most gynecological and breast cancers, which have to do with aesthetic sequels secondary to mutilating surgeries, the possibility of suffering an induced and early menopause and dissatisfaction in sexual intercourse, makes it necessary to validate specific health related quality of life and resilience scales for this concrete group of patients [3, 4, 6].

In relation to those about HRQoL, there are already validated questionnaires of breast and gynecological cancer [40], but it is not the same in the case of resilience ones, what it is important to work on.

Table 3. Comparation between HRQoL instruments.

Considered aspects	EORTC QLQ-C30	FACT-G	SF-36
Resilience	–	–	±
Functional sphere	+	+	±
Emocional sphere	±	+	+
Sexuality	–	+	–
Physical symptoms	+	+	+
Relationships		+	+
Basic activities daily life (BADL)	+		+
Sports	–	–	+
Menopausal symptoms	–	–	–
Self-perception of physical appearance	–	–	–
Sleep	+	+	–

Validating specific scales of resilience for breast and gynecological cancer would help to study whether the type of tumor may alter resilience and identify which sociodemographic factors are associated with resilient women and, therefore, analyzing how this affects patients' quality of life. That is how consistent support pathways for cancer care could be implemented.

5. Conclusions

In this review, we introduced the current state of health-related quality of life evaluation in breast and gynecological cancer women. Although there are validated questionnaires to explore HRQoL in breast and gynecological cancer, they do not explore fundamental intrinsic aspects in this type of patients such as resilience, iatrogenic menopause or the performing of mutilating surgeries, which would help to achieve more reliable results. There are no validated scales available to rate resilience in these specific group of patients either.

Resilience and health-related quality of life are quantifiable and can be modified through psychological and pharmacological interventions, that is why it is necessary to create specific scales in order to have the proper tools to manage them.

Author contributions

ACRP has elaborated the research project and has written the whole manuscript. YJG has contributed to data collection and has supervised the methodology. JNS has contributed to data collection and has helped with medical English writing. AER has helped with the research project and has contributed to data collection. PCM has designed and coordinated the study. LBM has designed and coordinated the study. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

The research was conducted in accordance with Good Clinical Practice standards and the current revision of the Declaration of Helsinki and following the PRISMA systematic review guidelines.

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Conflict of interest

The authors declare no conflict of interest.

Appendix

See Figs. 2,3,4.

ENGLISH

EORTC QLQ-C30 (version 3)

We are interested in some things about you and your health. Please answer all of the questions yourself by circling the number that best applies to you. There are no "right" or "wrong" answers. The information that you provide will remain strictly confidential.

Please fill in your initials: _ _ _ _

Your birthdate (Day, Month, Year): _ _ _ _ _ _ _ _

Today's date (Day, Month, Year): 31 _ _ _ _ _ _ _ _

	Not at All	A Little	Quite a Bit	Very Much
1. Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?	1	2	3	4
2. Do you have any trouble taking a long walk?	1	2	3	4
3. Do you have any trouble taking a short walk outside of the house?	1	2	3	4
4. Do you need to stay in bed or a chair during the day?	1	2	3	4
5. Do you need help with eating, dressing, washing yourself or using the toilet?	1	2	3	4

During the past week:	Not at All	A Little	Quite a Bit	Very Much
6. Were you limited in doing either your work or other daily activities?	1	2	3	4
7. Were you limited in pursuing your hobbies or other leisure time activities?	1	2	3	4
8. Were you short of breath?	1	2	3	4
9. Have you had pain?	1	2	3	4
10. Did you need to rest?	1	2	3	4
11. Have you had trouble sleeping?	1	2	3	4
12. Have you felt weak?	1	2	3	4
13. Have you lacked appetite?	1	2	3	4
14. Have you felt nauseated?	1	2	3	4
15. Have you vomited?	1	2	3	4
16. Have you been constipated?	1	2	3	4

Please go on to the next page

ENGLISH

During the past week:	Not at All	A Little	Quite a Bit	Very Much
17. Have you had diarrhea?	1	2	3	4
18. Were you tired?	1	2	3	4
19. Did pain interfere with your daily activities?	1	2	3	4
20. Have you had difficulty in concentrating on things, like reading a newspaper or watching television?	1	2	3	4
21. Did you feel tense?	1	2	3	4
22. Did you worry?	1	2	3	4
23. Did you feel irritable?	1	2	3	4
24. Did you feel depressed?	1	2	3	4
25. Have you had difficulty remembering things?	1	2	3	4
26. Has your physical condition or medical treatment interfered with your family life?	1	2	3	4
27. Has your physical condition or medical treatment interfered with your social activities?	1	2	3	4
28. Has your physical condition or medical treatment caused you financial difficulties?	1	2	3	4

For the following questions please circle the number between 1 and 7 that best applies to you

29. How would you rate your overall health during the past week?

1	2	3	4	5	6	7
Very poor						Excellent

30. How would you rate your overall quality of life during the past week?

1	2	3	4	5	6	7
Very poor						Excellent

Fig. 2. EORTC QLQ-C30.

FACT-G (Version 4)

Below is a list of statements that other people with your illness have said are important. **Please circle or mark one number per line to indicate your response as it applies to the past 7 days.**

	PHYSICAL WELL-BEING	Not at all	A little bit	Some-what	Quite a bit	Very much
GP1	I have a lack of energy	0	1	2	3	4
GP2	I have nausea	0	1	2	3	4
GP3	Because of my physical condition, I have trouble meeting the needs of my family	0	1	2	3	4
GP4	I have pain	0	1	2	3	4
GP5	I am bothered by side effects of treatment	0	1	2	3	4
GP6	I feel ill	0	1	2	3	4
GP7	I am forced to spend time in bed	0	1	2	3	4

	SOCIAL/FAMILY WELL-BEING	Not at all	A little bit	Some-what	Quite a bit	Very much
GS1	I feel close to my friends	0	1	2	3	4
GS2	I get emotional support from my family	0	1	2	3	4
GS3	I get support from my friends	0	1	2	3	4
GS4	My family has accepted my illness	0	1	2	3	4
GS5	I am satisfied with family communication about my illness	0	1	2	3	4
GS6	I feel close to my partner (or the person who is my main support)	0	1	2	3	4
Q1	*Regardless of your current level of sexual activity, please answer the following question. If you prefer not to answer it, please mark this box ☐ and go to the next section.*					
GS7	I am satisfied with my sex life	0	1	2	3	4

FACT-G (Version 4)

Please circle or mark one number per line to indicate your response as it applies to the past 7 days.

	EMOTIONAL WELL-BEING	Not at all	A little bit	Some-what	Quite a bit	Very much
GE1	I feel sad	0	1	2	3	4
GE2	I am satisfied with how I am coping with my illness	0	1	2	3	4
GE3	I am losing hope in the fight against my illness	0	1	2	3	4
GE4	I feel nervous	0	1	2	3	4
GE5	I worry about dying	0	1	2	3	4
GE6	I worry that my condition will get worse	0	1	2	3	4

	FUNCTIONAL WELL-BEING	Not at all	A little bit	Some-what	Quite a bit	Very much
GF1	I am able to work (include work at home)	0	1	2	3	4
GF2	My work (include work at home) is fulfilling	0	1	2	3	4
GF3	I am able to enjoy life	0	1	2	3	4
GF4	I have accepted my illness	0	1	2	3	4
GF5	I am sleeping well	0	1	2	3	4
GF6	I am enjoying the things I usually do for fun	0	1	2	3	4
GF7	I am content with the quality of my life right now	0	1	2	3	4

Fig. 3. FACT-G.

Circle the right response	Strongly disagree						Totally agree
1. Normally, I arrange them one way or another	1	2	3	4	5	6	7
2.I'm proud of the races I've achieved	1	2	3	4	5	6	7
3.Overall, I take it easy	1	2	3	4	5	6	7
4.I am a person with adequate self-esteem	1	2	3	4	5	6	7
5.I feel like I can handle many situations at once	1	2	3	4	5	6	7
6.I am resolute and determined	1	2	3	4	5	6	7
7.I am not afraid of suffering difficulties because I have already experienced them in the past.	1	2	3	4	5	6	7
8.I am a disciplined person	1	2	3	4	5	6	7
9.I put an interest in things	1	2	3	4	5	6	7
10.I can usually find something to laugh about.	1	2	3	4	5	6	7
11.Self-confidence helps me in difficult times	1	2	3	4	5	6	7
12.In an emergency, I'm someone people can trust.	1	2	3	4	5	6	7
13.My life has meaning	1	2	3	4	5	6	7
14.When I'm in a difficult situation, I can usually find a way out.	1	2	3	4	5	6	7

Fig. 4. WYRS-14.

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