

Factors related to quality of life in long-term survivors of gynecological cancer

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The population of gynecological cancer survivors is growing, yet little is known regarding the long-term impact of the disease and/or cancer treatment on these women's quality of life (QoL). Few studies have been conducted with QoL as the main outcome, and studies are rather incomparable in terms of inclusion criteria, QoL measurements applied and use of a control group, for example. Despite problems with comparisons across studies, it would appear safe to conclude that the majority of women who have responded successfully to treatment for gynecological cancer will experience a good QoL. Survivors of ovarian or endometrial cancer, those who have received radio- or chemo-therapy, younger survivors and women with little social support, are at risk for impaired QoL. Factors related to potential negative and positive QoL outcomes, as well as strategies for improving QoL and health in long-term gynecological malignancy survivors, are outlined.

KEYWORDS: cancer survivor • cervical neoplasm • gynecology • ovarian neoplasm • quality of life • response shift • uterine neoplasm

More long-term survivors of gynecological cancer

Nations around the world are experiencing a spectacular increase in longevity. Extraordinary progress in curative and preventive medicine has increased survival rates dramatically for a wide range of previous lethal diseases [1]. In developed countries, approximately a third of the population will be diagnosed with cancer during their lifetime but, in contrast to the situation a few decades ago, the majority of them will survive. The group of cancer survivors is thus growing rapidly. As most studies examine short-term survival [2], little is known regarding the long-term impact of the disease and/or the cancer treatment on the survivors' lives. In particular, the survivors from gynecological cancer have been understudied [3]. If cured, these women may have an additional life expectancy of 25–30 years after treatment and, consequently, face potential impairments for a long time [4]. Cancer survivorship is a process with both positive and negative aspects [5], defined as “living with, through and beyond cancer” [6]. The American Cancer Society defines cancer survivorship as beginning at the diagnosis with cancer and continuing for the balance of life

and views quality of life (QoL) as a key outcome [7]. 5-year survival is often regarded as long-term survival.

Incidence & treatment of gynecological cancers

Gynecological cancer is a generic term for cancers located somewhere in the female reproductive organs; for the most, cervical, endometrial and ovarian cancer. Cervical cancer regularly affects younger women, with a mean age of approximately 50 years, and is the second-most common cancer in women worldwide [8]. Owing to early identification strategies, the 5-year survival rates in western countries are approaching 85% [9]. Ovarian cancer, however, is mostly detected at an advanced stage, with 5-year survival rates at approximately 40% [10]. The treatment modalities for gynecological cancer are surgery, radiotherapy, chemotherapy and hormone therapy often given in combinations.

Potential long-term late effects of gynecological cancer treatment

Late effects are often regarded as long term if they last longer than 1 year after the completion of treatment, or if they first appear some years after.

Since 5-year survival is usually accepted as long-term survival, the late effects should probably also be defined as long term only if they last beyond this time limit. Current late effects are a result of former treatments given, which were valid decades ago. Some of the long-term late effects among gynecological cancer survivors are specific to the treatment regimes, while others are associated with cancer treatment in general. As the group of long-term survivors grow older, it is important to distinguish the symptoms caused by cancer treatment from those associated with (normal) aging. Long-term survivors of gynecological cancer have reported on a number of physical, psychological and socioeconomic difficulties.

Physical late effects

Survivors of gynecological cancer can, similar to survivors of other cancer types, experience fatigue [11–13] and pain [14,15]. Owing to treatment-induced menopause, these women may suffer from menopause symptoms [16] and osteoporosis [17]. Furthermore, aggressive surgery and radiation of the pelvic area can cause high levels of sexual discomfort [18,19], especially among ovarian cancer survivors [20]. Despite advances in pelvic radiotherapy, damage to normal tissue can also lead to bladder and bowel dysfunction [14,16,17,19,21] and gastrointestinal problems, including fecal incontinence [21]. Survivors who have had lymph nodes removed, particularly obese survivors, are at a higher risk for developing swelling [22].

Psychological late effects

When the body has been affected by cancer, the soul will also become distressed as a result of having lived through and beyond cancer in general; cancer in the female reproductive organs, in particular, has been associated with depression [12], anxiety or post-traumatic stress disorder [23], existential challenges [24] and altered body image [16]. Cognitive impairments might follow the toxic effect that chemotherapy can have on the brain; the so-called ‘chemobrain’ [25]. The unmet needs most frequently reported among gynecological cancer survivors are within the psychological domain; fear of the cancer spreading, concerns regarding the worries of those close to them, uncertainty about the future [26], and existential issues [23].

Socioeconomic problems

Socioeconomic problems might appear to be due to cancer-related expenses [27], loss of income owing to impairment in work ability [28], or poor social functioning [16]. Although disease-free long-term survivors of gynecological cancer are expected to participate in ‘life as normal’, they are, nevertheless, more often disabled and have lower household income compared with other women of the same age [28]. Female cancer survivors (breast and gynecologic) have an increased risk for unemployment compared with their male counterparts (prostate and testicular) [29].

Symptoms & comorbidity

Whereas some studies report on a wide range of problems among recurrence-free gynecological cancer survivors [16], other studies find no higher prevalence of symptoms in these survivors compared with the general population [2]. As with symptoms, the results are inconsistent regarding comorbidity. Compared with the general

female population, cervical cancer survivors in Korea report a higher prevalence of a number of comorbidities [30], whereas long-term survivors of gynecological cancer in Norway have no more comorbidities than an age-matched group of women from the general population [31].

The inter-relationship and co-occurrence of different symptoms, as well as formation of ‘symptom clusters’ [32], might have a resultant effect on QoL [12]. It should, however, not be assumed that the presence of health problems necessarily means an unhappy life, or that the absence of health problems automatically indicates a happy life [33]. Conclusions on the relationship between causal indicators and QoL should be treated with caution [34].

Measuring QoL

The complex relationship between survivorship, cancer-related side effects and self-perceived QoL is yet not well understood [12,35,36]. Consistent disparities arise between clinical or biomedical measures, the patients’ own evaluation of their situation, and proxy’s evaluation of the patient’s situation [37]. Patient-reported outcomes [38], such as QoL, have been introduced in clinical trials on a large scale, in addition to measures of morbidity and mortality. A simple search on ‘quality of life’ on Medline at the beginning of 2009 gives more than 82,000 hits. Many of these publications are, however, hampered by no or a poor definition of QoL, whereas some draw a dubious line between research on mice or rats and a human perception of QoL.

Several definitions of QoL exist, frequently emphasizing components of happiness or satisfaction with life [39]. Furthermore, the construct is, for the most part, regarded as a combination of physical, psychological and social wellbeing, and, sometimes, also spiritual and material wellbeing [40,41]. Physical domain QoL is the most frequently measured, while spiritual domain QoL is least frequently measured [42]. Within clinical trials, the term ‘health-related QoL’ is often used to delimit the concept for investigation [43]. Some QoL measures are based on a conception of QoL as a performance or functional status, whereas others include some form of cognitive appraisal by the individual. As such, QoL is subjective, unique to the individual, multidimensional and dynamic, with ongoing evaluation as life circumstances evolve [44].

Qualitative methods of inquiry provide an in-depth insight into the lived experience of people. However, predominantly standardized QoL-questionnaires are being applied. A distinct number of reliable and validated QoL-instruments exist; Fayers and Machin [45] provide a range of examples to illustrate some of the most common approaches. Generic instruments, such as short form (SF)-36, EuroQoL and WHOQoL, as well as cancer-specific instruments, such as European Organization of Research and Treatment of Cancer (EORTC) and Functional Assessment of Cancer Therapy (FACT), have been widely used in cancer research. QoL-instruments have been developed specific for gynecological cancer research (e.g., uterine fibroid symptom and quality of life [UFS-QoL]), for cancer survivors (e.g., quality of life – cancer survivors [QoL-CS]), as well as for cancer-related symptoms, such as pain (e.g., short form McGill Pain Questionnaire [SF-MPQ]) and fatigue (e.g., multidimensional fatigue inventory [MFI]-20). The

disease-specific measurements show a high degree of sensitivity and responsiveness, but generic QoL instruments are mostly applied when comparing groups from different populations [46].

Studies among gynecological cancer survivors

Studies on QoL in cancer survivors are rather heterogeneous regarding inclusion- and treatment-related criteria, but findings reveal that, in general, most long-term survivors enjoy a good QoL [42]. Few studies exist on gynecological cancer survivors with QoL as the primary outcome. The present literature was identified by combinations of the following search terms on Medline, Cinahl and PsycInfo (1998–2008): ‘quality of life’, ‘gynaecology’, ‘gynecology’, ‘cancer’, ‘cervical neoplasms’, ‘uterine neoplasms’, ‘ovarian neoplasms’ and ‘survivors’. Furthermore, some comparisons of QoL-scores between groups had to be reported; between cases and controls, between cases and normative data, or between repeated measures of the case group (longitudinal).

Although measured differently, current research shows that, all in all, survivors of gynecological cancer can expect to enjoy a good QoL, not unlike that of peers without a history of cancer [2,16,31,35,47–52]. As displayed in TABLE 1, most of the studies comprise participants with 5 years of survival and include the main treatment modalities for gynecological cancer: surgery, radiation and chemotherapy.

Survivors of endometrial cancer [53] and ovarian cancer [49,54] have reported poorer QoL. In addition, radiotherapy [4,49,51] and chemotherapy [48,54] are associated with lower QoL scores years after completed treatment, compared with surgery alone. Young survivors might be also at risk for impaired QoL (TABLE 1) [48,52].

Data derived from QoL studies using qualitative research methods have revealed that spirituality is an important component of QoL and contributes to the process of creating meaning from the gynecological cancer experience [55]. Furthermore, a good QoL seems to be attributed to ability or choice to reframe the gynecological cancer experience and renew the appreciation of life [56].

Factors related to negative QoL outcomes

Gynecological cancer survivors have reported significant QoL concerns across dimensions of physical, psychological, social and spiritual well-being [57]. Troublesome physical late effects can have a devastating effect on the survivors’ QoL, such as fatigue [11], menopause symptoms [58], and sexual [52] and bowel dysfunction [14]. Survivors of gynecological cancer with more physical sequelae report lower levels of meaning in life, which is, again, associated with higher levels of depressive symptoms [24].

The loss of fertility can affect the psychological equilibrium for female cancer survivors [59] and result in distress, lowered self-esteem and QoL [60]. Young gynecological cancer survivors have shown unsatisfactory psychological status and might be particularly vulnerable [47,61]. The cultural diversity in reactions among gynecological cancer survivors in different countries has hardly been studied. One study conducted in the USA shows that Latin–American women diagnosed with cervical cancer can face a burdensome survivorship experience [62].

Some social characteristics in gynecological cancer survivors are associated with poor QoL, such as poor education, little social support [49], being unemployed and living alone [2]. Evidence shows that economic stress is negatively associated with QoL [63]; consequently, attention to the economic consequences of cancer has grown as the number of cancer survivors has increased.

Factors related to positive outcomes

A review of natural correspondence between ovarian cancer survivors and an ovarian newsletter, a total of 1282 communications, show that the survivors describe negative, as well as positive, effects of the cancer experience [64]. The women can, despite some symptoms, enjoy good lives [15]. Human beings are enormously adaptive. We actively construct meaning from our environment and display a range of cognitive mechanisms to continually adapt to changing circumstances [65]. Recently, attention has been drawn to potentially highly significant phenomena known as response shift [66]. This concept encompasses an understanding that internal standards, values and the conceptualization of life quality can change over the course of the disease trajectory. Many cancer survivors desire to return to ‘normal’ after cancer, taking and keeping control, and maintaining a coherent sense of self [67].

In studies among gynecological cancer survivors, a shift towards adaptation, growth [68] and resilience [35] has been identified. Having survived a life-threatening illness, ovarian cancer survivors appear to put other life difficulties into perspective, alter their priorities and feel enriched by the experience [15]. These women might show impressive resilience and feelings of greater pleasure in life and personal relationships [15]. A cancer experience can, thus, lead to a positive revival of people as they re-evaluate their life [69].

Strategies for improving health & QoL in gynecological cancer survivors

Long-term cancer survivors are not being routinely monitored for their cancer or cancer-related concerns and have no oncologist or oncology nurse to consult if special needs arise [42]. They are more or less ‘lost in transition’ [70]. Many gynecological cancer survivors would probably participate in counseling programs [52] or post-therapy support programs [71]. One study shows that 43% of gynecological cancer survivors have at least one moderate- or high-level unmet need [26], whereas another study reveals that nearly 90% of gynecological cancer survivors report supportive care needs – needs most frequently addressing existential survivorship [23]. Studies reinforce the notion that patient education and rehabilitation offered to these women should address the management of both physical and psychological post-cancer-related late effects with appropriate interventions in order to assist their transition to living ‘life after cancer’ [52]. It is of paramount importance to address these concerns, even if the survivors might perceive themselves as ‘the lucky ones’ [15].

Long-lasting physical or mental fatigue has been identified as a common complaint in gynecological cancer survivors [11,13]. Since this symptom is a key predictor of QoL, it should be given more attention in aftercare programs [11]. Insomnia is also a common complaint among cancer survivors, causing daytime fatigue. In order to reduce this fatigue, cognitive–behavior therapy is both

Table 1. Studies among gynecological cancer survivors with quality of life as main outcome.

Study (year)	Country	Gynecological cancer type	People enrolled (n)	Treatment	Time post-treatment (years)	QoL measures	Mean age (years)	QoL results	Ref.
Li <i>et al.</i> (1999)	Sweden	Cervical	Cases: 46 Control: healthy; 527 (HRT users: 344)	Surgery, radiation or chemotherapy	5–7	Self-assessed (physical, psychological, socioeconomic, symptoms, menopause)	40 (ovaries preserved) 57 (ovaries removed) 55 (controls)	Same as controls. Improved in peri-/post-menopause by HRT	[47]
Li <i>et al.</i> (1999)	Sweden	Endometrial	Cases: 61 Control: 527 healthy	Surgery, radiation or chemotherapy	5–7	Self-assessed (physical, psychological, socioeconomic, symptoms, menopause)	56 (young) 74 (old) 55 (controls)	Lower than controls	[53]
Chan <i>et al.</i> (2001)	China	Cervical, endometrial, ovarian, vulvar	Cases: 144	Surgery, radiation or chemotherapy	0.5–2	EORTC QLQ-C30	51	Same scores 6–24 months. Low in young and chemotherapy patients	[48]
Miller <i>et al.</i> (2002)	USA	Cervical, endometrial, ovarian	Cases: 85 Control: 42 healthy	Surgery, radiation or chemotherapy	0.5–12	FACT-QoL	59 (case) 56 (controls)	Same as controls. Low in ovarian and radiation patients	[49]
Wenzel <i>et al.</i> (2002)	USA	Early-stage ovarian	Cases: 49 Compared with normative data	Surgery, radiation or chemotherapy	5–10	SF-36, QoL cancer Survivors	65	Same as or better than healthy	[35]
Roos <i>et al.</i> (2004)	The Netherlands	Cervical, endometrial, vulvar and vaginal	Cases: 19 Compared with normative data	Pelvic exenteration	Mean: 5	EORTC QLQ-C30	60	Same as healthy in general, cognitive and emotional fields. Lower in physical and social fields	[50]
Frumovitz <i>et al.</i> (2005)	USA	Cervical	Cases: 37 (surgery); 37 (radiation) Controls: 40 healthy	Surgery or radiation	≥5	SF-12	44 (surgical) 47 (radiation) 42 (controls)	Surgery: same as controls Radiation: lower in physical field	[51]
Wenzel <i>et al.</i> (2005)	USA	Cervical	Cases: 51 Controls: 50 healthy	Surgery, radiation or chemotherapy	4–11	SF-36, QoL cancer Survivors	45 (case) 41 (controls)	Same as controls. Lower in spiritual and reproduction concerns	[52]

EORTC QLQ-C30: European Organization of Research and Treatment of Cancer – Quality of Life Questionnaire – Core Questionnaire; FACT-QoL: Functional Assessment of Cancer Therapy – Quality of Life; HRT: Hormone-replacement therapy; QLQ: Quality of Life Index; SF-36/SF-12: Medical Outcomes Study Short Form Health Survey Questionnaire.

Table 1. Studies among gynecological cancer survivors with quality of life as main outcome (cont.).

Study (year)	Country	Gynecological cancer type	People enrolled (n)	Treatment	Time post-treatment (years)	QoL measures	Mean age (years)	QoL results	Ref.
Bradley et al. (2006)	USA	Cervical, endometrial	Cases: 152 Controls: 89 healthy	Surgery, radiation or chemotherapy	5–20	SF-36, FACT-QoL	55 (cervical) 65 (endometrial) 59 (controls)	Same as controls	[2]
Liavaag et al. (2007)	Norway	Ovarian	Cases: 130 no relapse, 59 relapse Compared with normative data	Surgery, radiation or chemotherapy	≥1.5	EORTC QLQ-C30	58	Relapse/no relapse as one group: poorer than healthy	[54]
Park et al. (2007)	Korea	Cervical	Cases: 860 Control: 775 healthy	Surgery, radiation or chemotherapy	1.5–22	EORTC QLQ-C30	55 (case) Controls younger	Same as controls in most. Lower in social, finance, intestinal functioning	[16]
Rannestad et al. (2008)	Norway	Cervical, endometrial, ovarian	Cases: 160 Control: 493 healthy	Surgery, radiation or chemotherapy	7–18	Ferrans & Powers' QLI	58 (case) 57 (controls)	Same as controls	[31]

EORTC QLQ-C30: European Organization of Research and Treatment of Cancer – Quality of Life Questionnaire – Core Questionnaire; FACT-QoL: Functional Assessment of Cancer Therapy – Quality of Life; HRT: Hormone-replacement therapy; QLI: Quality of Life Index; SF-36/SF-12: Medical Outcomes Study Short Form Health Survey Questionnaire.

clinically effective and feasible to deliver in clinical practice, as well as being associated with improved QoL outcomes in cancer survivors [72].

Well-designed interventions specifically targeted at gynecological cancer survivors may help ease the impact of a woman's gynecological cancer upon her relationship with her partner [52]. One study showed that cervical cancer survivors generally have a positive attitude towards sexuality and engage in satisfying sexual activity [73], whereas another study found worse sexual functioning among such disease-free survivors compared with healthy women [16]. Well-structured sexual health programs can result in subjective improvement in sexual complaints [18]; the Permission, Limited Information, Specific Suggestions, Intensive Therapy (PLISSIT) model is often used in sexual health counseling. Parenthood has been cited as an important aspect of cancer survivorship. As a result, interest concerning fertility preservation and family-building options in cancer survivorship has increased [74].

Persons successfully treated for cancer are at risk for a second malignancy [75]. This risk is related to shared risk factors, genetic predisposition and the toxic effects of therapy [76]. Survivorship programs should, thus, acknowledge tertiary prevention, as cancer survivors need to be educated on the signs and symptoms of second malignancies [76], and because fear regarding the cancer spreading is prevalent in gynecological cancer survivors [26]. Cancer survivors do not necessarily display a more health-promoting lifestyle than other people [17]. One study showed that survivors of gynecological cancer are rather physically inactive compared with the general population [17], whereas another study showed the opposite [54]. However, among women, being insufficiently active is associated with not meeting the guidelines for fruit and vegetable consumption, with smoking and with overweight or obesity [77]. As many as 20% of cancer survivors deny or have 'forgotten' their former malignancy, which might hamper an increase in health awareness [78]. In low-resource settings, extra support might be needed to achieve appropriate health-seeking behavior [79]. Some gynecological cancer survivors find alternative remedies valuable in promoting health [68], but healthcare providers should be aware that the personal beliefs held by the survivors regarding recurrence prevention may be at variance with scientific evidence [80].

General recommendations, such as cessation of smoking, more physical activity and eating healthy food, can have positive health effects. It should be noted, however, that radiation of the pelvic area can cause gastrointestinal problems and intolerance for some (healthy) food, as well as pelvic and skeletal pain, which might interfere with current physical activity guidelines. Physical activity is essential in order to improve blood stream and oxygen levels in the body, increase energy levels, prevent obesity and reduce osteoporosis. Gynecological cancer survivors who participate in 150 min of moderate or 60 min of strenuous physical activity per week [81], or participate in high-intensity strength-training programs [82], report significantly better QoL. These findings demonstrate the importance of integrating training programs into gynecological cancer rehabilitation programs to improve the women's health status and their QoL.

Chronic stressors may impart basic physiology, but the capacity to increase survival by improving QoL is controversial. However, changes in QoL among cervical cancer survivors have been found to be significantly associated with a shift in the immune system [83]. This finding is in line with studies within 'positive psychology' and 'positive health' factors that seem to increase longevity and improve prognosis [84]. Multidisciplinary, psychosocial intervention programs, leading to enhanced QoL, could, therefore, result in improved clinical outcomes, including survival.

The patient-partner dyad should be regarded as a unit, particularly in post-cancer care. The partner may show greater psychological morbidity than the patient herself, and the QoL of the partner is sometimes worse than that of the patient [85]. Nevertheless, the process of response shift has also been found in the partners [86]. Although a definitive conclusion on the clinical significance of response shift cannot be drawn from existing studies [87], interventions that serve to facilitate response shift for improving QoL for the surviving women and their partners are being offered, often in support groups [44]. Studies among gynecological cancer survivors indicate that social support directly influences their QoL [88], especially the psychological domain of QoL [42], therefore, follow-up care should promote enhancement of the survivors' social participation.

Support groups tend to attract well-educated, articulate and middle-class women [89]. Special attention should, therefore, be drawn to women at risk for developing post-cancer maladjustments. Identification of factors predicting who will have adjustment difficulties will help to focus resources where they have the most impact [90]. This article reveals that women who have survived ovarian or endometrial cancer, who have received radiotherapy or chemotherapy and who are young or who live under poor socioeconomic conditions are at risk for impaired QoL. However, much work still needs to be done to identify long-term survivors of gynecological cancer who might suffer the greatest detriments to QoL, and develop appropriate interventions [52]. Brief, structured QoL assessments may help to identify high-risk individuals for closer follow-up [91].

Attention to the economic consequences of cancer has grown as the number of cancer survivors has increased, and because evidence shows that economic stress is negatively associated with QoL [63]. Gynecological cancer survivors, as with other cancer survivors, may require guidelines to accommodate and complete a rehabilitation plan in order to stay at work. Otherwise, women may leave the work force. Not being able to return to work following cancer may result in financial loss, social isolation and reduction of self-esteem. The economic burden of cancer may vary between countries according to healthcare systems, welfare and insurance programs provided, and available funding for cancer-related expenses.

Future research

In order to obtain evidence-based knowledge on the impact of gynecological cancer on long-term QoL, better methodological research is needed [4]. Results from current research on QoL in gynecological cancer survivors are often difficult to interpret and compare because of different diagnosis included in different studies, the diversity of QoL-measures applied, and the divergence in how many years post-treatment 'long term' means.

One of the limitations in QoL studies among gynecological cancer survivors are the rather small cohorts included. Bigger sample size is wanted, together with analyses of nonresponders and drop-outs, as well as ethnicity. Research should also compare patient results with those of women of the same age from the general population, as many of the survivors' symptoms are those of menopause and aging. It is important to distinguish effects due to cancer from those due to aging and/or comorbidities. Information on confounding variables and which variables are controlled for would improve the studies, together with information regarding disease stage and discrimination between treatment modalities. Women recently diagnosed with gynecological cancer often face more aggressive multiple treatment regimens than before. These treatments may be associated with significant side effects that adversely impact their QoL [92]. Questions arise regarding whether future long-term gynecological cancer survivors will differ from present survivors in terms of QoL and symptoms.

More research is needed on the QoL of long-term survivors of gynecological cancer [46]. It is recommended that generic QoL measures are used in addition to disease-specific measures. Although rare today, prospective randomized, longitudinal studies that incorporate a pretreatment assessment of symptom burden and perceived QoL are necessary to define the severity and pattern of treatment-related change and subsequently guide intervention strategies [92]. QoL measures incorporating assessments of appraisal processes would help to understand the dynamics of response shift in this population, which will be in accordance with recent calls for more positive psychology. Psychologists have questioned the survivorship research community's relative neglect of positive states and beliefs (e.g., optimism, resilience and human strengths) compared with negative ones (e.g., depression, pessimism, vulnerability and illness) [93].

Conclusion

It would appear safe to conclude that, overall, recovery from treatment for gynecological cancer is good. It may be helpful for women recently diagnosed with gynecological cancer to know that increasing numbers of women survive this cancer, regard their QoL as good, and continue to lead normal lives. Most importantly, women may be comforted by learning that many long-term gynecological cancer survivors report an enriched life that results in them feeling strengthened and taking pleasure in things they had not previously appreciated. Survivors of ovarian or endometrial cancer, those who have received radio- or chemo-therapy, younger survivors and women with little social support, are at risk for impaired QoL.

Expert commentary

Quality of life in long-term gynecological cancer survivors has, until recently, been neglected in research. Although unpleasant symptoms might occur after cancer treatment, the majority of the long-term survivors experience a good QoL.

Five-year view

Current medical treatment modalities for gynecological cancer are more comprehensive than treatments given in the past. Consequently, more women will survive. In the next few years,

the long-term effects of more toxic multimodal cancer therapy on women's QoL will have to be illuminated. Fatigue, for instance, might be more prominent among the survivors, leading to impairment in work ability, which, in turn, can have a negative effect on their life quality. The request of more positive psychology interventions should be acknowledged in future cancer care.

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Key issues

- The majority of women diagnosed with gynecological cancer will survive; cervical cancer patients have the highest survival rate.
- The number of long-term gynecological cancer survivors is growing.
- As research, so far, has mostly focused on the short-term effects of diagnosis and/or cancer treatment, little is known regarding the long-term effects on the survivors' lives.
- Medical treatment for gynecological cancer might induce physical, psychological, spiritual and socioeconomic late effects.
- Most survivors of gynecological cancer experience a good quality of life, not unlike that of healthy controls.
- Response shift, adaptation, resilience and growth are seen among survivors.
- Gynecological cancer survivors should be encouraged to participate in a health-promoting lifestyle.
- Support programs are recommended, including for patients' partners.
- Impairment in quality of life is associated with ovarian and endometrial cancer, chemo- and radio-therapy, young age, poor education, unemployment, little social support and living alone.

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