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# Quality of Life in Cervical Cancer Survivors: A Review of the Literature and Directions for Future Research

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**C**ervical cancer is one of most prevalent types of cancer in women and is responsible for 471,000 annual cases worldwide (Cervical Cancer Statistics, 2007). Although a cancer diagnosis was once synonymous with death, 68% of adults diagnosed with cancer today can expect to be alive in five years (Jemal, Siegel, Xu, & Ward, 2010). As a result of widespread screening programs, the majority of cervical cancer cases are being diagnosed in the earlier stages. Because of this early detection, coupled with new and advanced medical treatment, women with cervical cancer now have relatively good five-year survival rates (more than 90% in developed countries [Fayed, 2006]). Some studies have even reported estimated five-year survival rates as high as 100% (Waggoner, 2003).

Given the increasing years of survivorship of women with cervical cancer, paying special attention to the impact of cancer and its treatment on quality of life (QOL) is necessary. The concept of QOL is particularly salient for nursing because nurses traditionally are concerned with the holistic perspective of patients, focusing on their survival and QOL (Ferrans, 2005). Consequently, nurses play important roles in maintaining the QOL of cervical cancer survivors.

A literature review of QOL in adult cancer survivors revealed that social support improves the psychological domain of QOL and that QOL varies according to the treatment received (Bloom, Petersen, & Kang, 2007). Although cancer survivors may share some common experiences, Bloom et al. (2007) did not provide detailed information about any experiences that are uniquely related to cervical cancer and its treatment. A review of QOL studies by Vistad, Fosså, and Dahl (2006) dealt specifically with long-term cervical cancer survivors, including relevant studies published from 1966–2005. Vistad et al. (2006) reported on the impact of cervical cancer survivorship on QOL, mainly in terms of the physical, psychosocial, and sexual sequelae.

**Purpose/Objectives:** To describe the most current trends in quality-of-life (QOL) research in cervical cancer survivors and to discuss directions for future research.

**Data Sources:** A literature search was conducted among five electronic databases using the terms *cervical cancer*, *quality of life*, *survivors*, *survivorship*, *measurement*, and *instruments*. Articles were published either in English or Chinese from January 2005 to June 2009.

**Data Synthesis:** Thirty-one articles were identified. The major QOL issues among cervical cancer survivors were categorized at the individual and systemic levels. The most current trends include research into the positive and negative aspects of cancer survivorship; studies that examine unhealthy lifestyle behaviors, which contribute to poor QOL; studies concerned with the impact of cervical cancer survivorship on male partners and family caregivers; and three primary types of instruments used for assessment.

**Conclusions:** Future research directions should include (a) exploring and optimizing the positive outcomes of cervical cancer survivorship, (b) using interventions to reduce risky lifestyles or unhealthy behaviors, (c) conducting exploratory studies to determine the impact of cervical cancer survivorship on families, (d) conducting longitudinal studies to document the ongoing changes in QOL among cervical cancer survivors, and (e) developing new instruments to assess the systemic level of QOL.

**Implications for Nursing:** Expanding the understanding of QOL and related factors in cervical cancer survivors would enable nurses to assess and develop interventions to improve QOL and overall survival outcomes for this population.

With a rapidly growing number of research studies that have examined QOL among cervical cancer survivors, a need exists to conduct an updated literature review to identify trends of research on the impact to QOL in female survivors. Therefore, the objectives of this review were to describe recent trends of QOL research in cervical cancer survivors and to discuss directions for additional research.

## Literature Search

Articles published in English or in Chinese from January 2005 to June 2009 were searched for the review. Search terms used included *cervical* or *cervix cancer*, *survivors*, *survivorship*, *quality of life*, *measurement*, and *instruments* and were searched for in five computerized databases: CINAHL®, Medline®, PsycINFO, Scopus, and Chinese Journal Full Text Database.

To be included in this review, studies had to have QOL as one of the primary outcome measures and include participants with a diagnosis of cervical cancer as the study population. Although the term *cancer survivor* has been defined in different ways, this review included all studies on women with a diagnosis of cervical cancer who had lived for at least one year or an average of one year postdiagnosis. The term *postdiagnosis* was preferred to post-treatment as there may be a period of time that lapses before people initiate their cancer treatment. In addition, commentaries, editorials, literature reviews, and conference proceedings were excluded from this review.

## Framework of Quality of Life

QOL is dynamic and changes over time (Bloom et al., 2007). Traditional models of QOL are a multidimensional construct of health, including physical, psychological, social, and spiritual well-being (Ferrell, Grant, Funk, Otis-Green, & Garcia, 1997). It has been argued that this traditional framework predominantly focuses on an individual-centered paradigm and ignores contextual factors that influence QOL (Ashing-Giwa, 2005). A relatively comprehensive QOL model should be added to the contextual paradigm, including the cultural and socioecologic domains. This expanded model, as proposed by Ashing-Giwa (2005), comprises two levels: individual and systemic. Within each level, four major domains exist (see Table 1).

## Results

In total, 26 quantitative and 5 qualitative studies were identified. The characteristics of the qualitative studies are summarized in Table 2. Descriptions of these study findings can be organized according to Ashing-Giwa's (2005) contextual QOL model and classified as the individual or systemic levels of QOL among cervical cancer survivors.

### Individual Level of Quality of Life

**General health and comorbidity:** Overall, cervical cancer survivors report good levels of general health (Bradley, Rose, Lutgendorf, Costanzo, & Anderson, 2006; Wenzel et al., 2005). Studies have shown that no

differences exist in self-reported general health status between cervical cancer survivors and the general female population (Greenwald, McCorkle, & Fennie, 2008; Rannestad, Skjeeldestad, Platou, & Hagen, 2008).

The term comorbidity refers to the co-occurrence of two disorders or syndromes (not symptoms) in the same patient (Yates, 2001). The presence of comorbidity was significantly associated with the impairment of almost all QOL subscales (Distefano et al., 2008). Greimel, Winter, Kapp, and Haas (2009) found that 20%–30% of cervical cancer survivors report comorbidities, which may have an effect on sexuality. Greimel et al. (2009) also indicated that comorbidities affected cervical cancer survivors' QOL and sexuality outcomes to a greater extent than stages of disease. A study by Shin et al. (2008) also reported that cervical cancer survivors had more comorbidities than the general population. Comorbidities identified as specific to cervical cancer survivors include hypertension and heart, liver, gastrointestinal, and musculoskeletal disease.

**Cancer-specific medical characteristics:** According to Ashing-Giwa's (2005) contextual model, cancer-specific medical factors include age at diagnosis and cancer characteristics. Regarding age-specific factors, Wenzel et al. (2005) investigated the QOL of women with a mean age at diagnosis of 37 years. Compared with healthy controls, cervical cancer survivors of a childbearing age reported significantly more reproductive concerns, such as inability to bear children and to talk openly about fertility. In a study by Lai, Tang, and Chung (2009), the quality of social relationships was found to deteriorate with age. The study also indicated that age at diagnosis was an important QOL predictor. Comparing different survival lengths, cervical cancer survivors 2–5 years postdiagnosis reported more anxiety, body-image issues, and sexual worry than those who had 6–10 years of survivorship (Korfage et al., 2009). According to these study findings, reproductive concerns, sexual worry, body image, and the decreasing quality of social relationships were age-specific factors related to QOL.

With respect to the relationship of QOL and survivors at different stages of cancer, a comparative study by Distefano et al. (2008) revealed that advanced cervical cancer survivors exhibited a worse score in the perception of physical function than women in the early stages of cervical cancer. However, Distefano et al. (2008) found that the anxiety level of advanced cervical cancer survivors was lower than that of early-stage cervical cancer survivors.

Different stages of cancer are treated with certain types and combinations of treatment. In general, three types of treatment exist for cervical cancer: surgery, radiotherapy, and chemotherapy. Although women with cervical cancer usually are treated by a combination of two or more methods, the different types of treatment do affect the QOL of cervical cancer survivors to a

**Table 1. Summary of the Quantitative Quality-of-Life Studies With Cervical Cancer Survivors**

Study	Design <sup>a</sup>	Sample	QOL Instruments	Findings
Ashing-Giwa et al., 2009	To assess QOL and to identify its predictors among cervical cancer survivors	560 cervical cancer survivors 1–5 years postdiagnosis	SF-12 FACT-G/cervical cancer	Latina Americans had lower QOL scores than European Americans. Social support, role limitation, and doctor-patient relationship are systemic QOL predictors. Comorbidities, radiation, perceived health status, psychological well-being, body image issues, and sexual impact affect QOL on an individual level.
Awadalla et al., 2007	To assess QOL in gynecologic cancer survivors and their family caregivers	42 cervical cancer survivors among 181 female cancer survivors and 113 family caregivers	WHOQOL-BREF	Cervical cancer survivors had lower QOL scores than ovarian cancer survivors. Cervical cancer survivors cared for by their spouses had the highest QOL scores in the social domain. Cervical cancer survivors who had their parents as caregivers had the lowest QOL scores. Marital status, occupation, and education levels were QOL predictors for clinical cancer survivors.
Beesley et al., 2008	To evaluate health behaviors and body mass index and their association with QOL in gynecologic cancer survivors	195 cervical cancer survivors among 775 gynecologic cancer survivors within five years of diagnosis	FACT-G	Cervical cancer survivors are more likely to be current smokers (21%, CI = 19%–23%) than ovarian cancer survivors (10%, CI = 8%–12%) or endometrial cancer survivors (6%, CI = 5%–7%). Fewer cervical cancer survivors met dietary fruit recommendations compared with other gynecologic cancer survivors.
Bradley et al., 2006	To examine QOL and mood among gynecologic cancer survivors	152 gynecologic cancer survivors (with cervical cancer survivors) 5–20 years postdiagnosis versus 89 controls	SF-36® FACT-G	Cervical cancer survivors reported more anxiety, depressive symptoms, anger, and confusion than endometrial cancer survivors. Marital status and work patterns were QOL predictors.
Chen et al., 2007	To explore symptom distress and depression and their association with QOL among women with cervical cancer	100 cervical cancer survivors	EORTC QLQ-C30	Cervical cancer survivors aged 30–44 years had greater overall QOL scores compared to survivors aged 45–54. In addition, survivors aged 45–54 had greater overall QOL than survivors aged 55 or older ( $F = 5.93, p = 0.004$ ). Higher levels of depression caused lower levels of overall QOL ( $r = -0.51, p < 0.001$ ). Age and depression consisted of 30.5% variance of QOL.
Costanzo et al., 2006	To examine coping and QOL among gynecologic cancer survivors	64 gynecologic cancer survivors, including cervical cancer survivors (32 advanced stage versus 32 early stage)	FACT-G	Compared with early-stage survivors, those with extensive treatment more frequently used both engagement and avoidance coping strategies. The use of avoidance, such as mental disengagement, was associated with poorer QOL outcomes.
de Groot et al., 2005	To assess psychological concerns in cervical cancer survivors and their spouses	26 cervical cancer survivors and their spouses	Cervical Cancer Concerns Questionnaires	Cervical cancer survivors were more fatigued than their partners and experienced greater illness intrusiveness into the relationships and intimacy. Cervical cancer survivors and their male partners expressed equal intensities of concern regarding the illness and its treatment and ratings of sexuality.

*(Continued on the next page)*<sup>a</sup> All studies are cross-sectional unless otherwise noted.

CaSUN—Cancer Survivors' Unmet Needs; CI—confidence interval; EORTC QLQ-C30—European Organisation for Research and Treatment of Cancer Quality-of-Life Questionnaire—Core 30 items; EORTC QLQ-Cx24—European Organisation for Research and Treatment of Cancer Quality-of-Life Questionnaire—Cervical cancer 24 items; FACT-G—Functional Assessment of Cancer Therapy—General; QOL—quality of life; SF—Medical Outcome Study Health Survey Short Form; WHOQOL-BREF—World Health Organization Quality-of-Life Questionnaire—brief version

**Table 1. Summary of the Quantitative Quality-of-Life Studies With Cervical Cancer Survivors (Continued)**

Study	Design <sup>a</sup>	Sample	QOL Instruments	Findings
Distefano et al., 2008	To compare QOL between different stages of cervical cancer survivors	93 cervical cancer survivors 1–10 years postdiagnosis	SF-36	Survivors of advanced-stage cervical cancer exhibited worse physical function but lower anxiety levels than early-stage cervical cancer survivors. Being older than age 50, unemployed, having a low education level, and the presence of comorbidities were QOL predictors.
Du et al., 2007	To investigate QOL-associated factors in gynecologic cancer survivors	22 cervical cancer survivors among 63 gynecologic cancer survivors	FACT-G	94% of participants reported sexual dysfunction. Economic status, marital status, education level, and stage of disease were QOL predictors.
Frumovitz et al., 2005	To compare QOL and sexual function among cervical cancer survivors with different types of treatment	74 cervical cancer survivors (37 surgery and 37 radiotherapy) more than five years after diagnosis versus 40 controls	SF-12	Cervical cancer survivors treated with radiotherapy had significantly poorer physical QOL and sexual function. Cervical cancer survivors treated with radiotherapy had a higher frequency of menopausal symptoms. Marital status and smoking were additional factors.
Gotay et al., 2008	To assess QOL in long-term cervical cancer survivors	41 cervical cancer survivors 1–20 years after diagnosis	SF-36	Cervical cancer survivors were less likely to be physically active and likely to receive more cancer screenings. Income, comorbidities, and social ties and support were QOL predictors.
Greenwald et al., 2008	To assess health and adaptation among cervical cancer survivors	208 cervical cancer survivors 6–11 years postdiagnosis	SF-36	Cervical cancer survivors more often reported days of illness and days limited by health during the preceding month.
Greenwald & McCorkle, 2008	To assess sexuality and sexual function among cervical cancer survivors	179 cervical cancer survivors 6–29 years postdiagnosis	SF-36	Cervical cancer survivors generally enjoyed a high QOL. 47% of cervical cancer survivors experienced depression. QOL predictors included income, race, stage of disease, and type of surgery.
Greimel et al., 2009	To investigate treatment side effects on QOL and sexual functioning in cervical cancer survivors	121 cervical cancer survivors (63 surgery, 38 surgery and chemotherapy, and 20 surgery and radiotherapy) 7.3 months or longer since diagnosis	EORTC QLQ-C30 EORTC QLQ-Cx24	Cervical cancer survivors who were treated with surgery and radiotherapy had lower QOL scores than survivors treated with surgery or surgery and chemotherapy. 43% of cervical cancer survivors reported no sexual activities. Cervical cancer survivors who were treated with surgery and radiotherapy reported lower sexual activity rate and more symptoms of frequent urination and feelings of tight vagina.
Hodgkinson et al., 2007	To assess psychosocial outcomes and supportive care needs in gynecologic cancer survivors	40 cervical cancer survivors among 199 gynecologic cancer survivors 1–8 years postdiagnosis	SF-12 CaSUN	68% of survivors endorsed positive changes of views of life. Short-term survivors (1–3 years postdiagnosis) had higher levels of physical and mental QOL than long-term survivors (more than three years postdiagnosis).

*(Continued on the next page)*<sup>a</sup>All studies are cross-sectional unless otherwise noted.

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**Table 1. Summary of the Quantitative Quality-of-Life Studies With Cervical Cancer Survivors (Continued)**

Study	Design <sup>a</sup>	Sample	QOL Instruments	Findings
Hsu et al., 2005	To compare QOL in cervical cancer survivors with different types of treatment	261 cervical cancer survivors 25–218 months after treatment	EORTC QLQ-C30	Constipation and hot flash (also called hot flush) were common symptoms in cervical cancer survivors who were treated with surgery. Diarrhea and bloody stools were common symptoms in cervical cancer survivors who were treated with radiotherapy. Diarrhea, bloody stools, and urinary incontinence were common symptoms in cervical cancer survivors treated with surgery and radiotherapy.
Korfage et al., 2009	To assess QOL in cervical cancer survivors	291 cervical cancer survivors 2–10 years postdiagnosis	SF-36 EORTC QLQ-CX24	Cervical cancer survivors had lower QOL scores than the general population. Cervical cancer survivors in this sample had lower cancer-specific QOL scores than the validation study's sample. More anxiety and sexual worry were reported 2–5 years into cervical cancer survivorship.
Lai et al., 2009	To examine QOL and its age-specific factors in cervical cancer survivors	173 cervical cancer survivors a mean of 2.4 years postdiagnosis	WHOQOL-BREF (Chinese version)	Employment, education level, and absence of psychiatric morbidity were QOL predictors in younger cervical cancer survivors. Time since diagnosis, stage of cancer, religious beliefs, and having a partner were QOL predictors for midlife cervical cancer survivors. Age, the presence of a partners, and religious beliefs were QOL predictors for older adult cervical cancer survivors.
McCorkle et al., 2006	To explore depressive symptoms and associated factors in cervical cancer survivors	208 cervical cancer survivors 5–25 years postdiagnosis	SF-36	Cervical cancer survivors with depressive symptoms reported lower levels of physical function than cervical cancer survivors without depressive symptoms. Marital status and family income were depressive predictors.
Park et al., 2007	To identify long-term QOL and sexual function in cervical cancer survivors	860 cervical cancer survivors versus 494 controls a mean of 5.68 years postdiagnosis	EORTC QLQ-C30 EORTC QLQ-Cx24	Cervical cancer survivors reported more clinical symptoms, poorer body image, lower sexual function, and more sexual worry than controls. Cervical cancer survivors received chemotherapy with more dyspareunia and anxiety about sexual performance.
Rannestad et al., 2008	To investigate QOL in long-term gynecologic cancer survivors	160 gynecologic cancer survivors (61 cervical) 7–18 years after diagnosis versus 493 controls	Ferrans and Powers' QOL Index	Global QOL scores of cervical cancer survivors were 23 (± 3.8) versus 22.9 (± 4.1) for controls. More cervical cancer survivors than controls had consulted hospital physicians.
Shin et al., 2008	To investigate comorbidities and QOL in cervical cancer survivors	860 cervical cancer survivors 7.3–10.7 years after diagnosis	EORTC QLQ-C30 EORTC QLQ-Cx24	Cervical cancer survivors reported higher prevalence of comorbidities. Cervical cancer survivors with comorbidities reported lower levels of function and higher levels of symptoms.
Vaz et al., 2007	To evaluate QOL and associated factors in gynecologic cancer survivors	67 cervical cancer survivors versus 36 endometrial cancer survivors	WHOQOL-BREF	Cervical cancer survivors had lower QOL scores in general health. Advanced-stage survivors had lower QOL. Premenopausal women had lower QOL.

*(Continued on the next page)*<sup>a</sup> All studies are cross-sectional unless otherwise noted.

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**Table 1. Summary of the Quantitative Quality-of-Life Studies With Cervical Cancer Survivors (Continued)**

Study	Design <sup>a</sup>	Sample	QOL Instruments	Findings
Vaz et al., 2008	A longitudinal study evaluating QOL and its predictors in gynecologic cancer survivors	68 cervical cancer survivors among 107 gynecologic cancer survivors	WHOQOL-BREF	All domains of QOL scores rose after completion of radiotherapy. Upper gastrointestinal toxicity and history of surgery were QOL predictors.
Vistad et al., 2007	To examine the prevalence of chronic fatigue and associated variables in cervical cancer survivors	79 cervical cancer survivors five years or more postdiagnosis versus Norwegian normative sample	SF-36	24% of cervical cancer survivors had chronic fatigue compared with 13% in the normal sample. 30% of cervical cancer survivors were sexually active versus 53% in the normal sample. Cervical cancer survivors with fatigue were more clinically depressed and anxious than those without fatigue.
Wenzel et al., 2005	To investigate QOL and psychosocial sequelae among cervical cancer survivors	51 cervical cancer survivors 5–10 years postdiagnosis versus 50 healthy controls	SF-36 QOL-Cancer Survivorship Scale	50% of cervical cancer survivors feared recurrence. Cervical cancer survivors had more reproductive concerns than healthy controls. Spiritual well-being, maladaptive coping, reproductive concerns, and cancer-specific distress were QOL predictors.

<sup>a</sup> All studies are cross-sectional unless otherwise noted.

CaSUN—Cancer Survivors' Unmet Needs; CI—confidence interval; EORTC QLQ-C30—European Organisation for Research and Treatment of Cancer Quality-of-Life Questionnaire—Core 30 items; EORTC QLQ-Cx24—European Organisation for Research and Treatment of Cancer Quality-of-Life Questionnaire—Cervical cancer 24 items; FACT-G—Functional Assessment of Cancer Therapy—General; QOL—quality of life; SF—Medical Outcome Study Health Survey Short Form; WHOQOL-BREF—World Health Organization Quality-of-Life Questionnaire—brief version

varying degree. One qualitative study (Burns, Costello, Ryan-Woolley, & Davidson, 2007) explored the impact of late treatment effects on women 2–3 years after cervical cancer treatment and found that urinary incontinence and bowel dysfunction were common late physical effects, which had an adverse effect on sexuality.

As for quantitative study findings, Hsu et al. (2005) examined the impact of different types of treatment on women's QOL and found that constipation, dyspareunia, and hot flushes were statistically higher among the surgically treated group; diarrhea and bloody stools were more frequent in the radiation therapy group; and significantly higher complications in the group receiving both surgery and radiation therapy were diarrhea, bloody stools, urinary incontinence, and edema of the lower extremities.

Greimel et al. (2009) found that women treated with surgery and radiation therapy had significantly more issues with frequency of urination, urine leakage, and the feeling of a tight vagina. In addition, they had lower scores in all function levels, in particular having a lower sexual activity rate compared with women in the surgery alone or surgery and chemotherapy groups. Similar study findings were reported by Korfage et al. (2009), who found that women with radiation therapy reported more symptoms relating to sexual or vaginal function and sexual worry. Within the radiation therapy group, the QOL of women after primary radiation therapy was

worse than after adjuvant radiation therapy. Korfage et al. (2009) concluded that radiation treatment is associated with reduced levels of QOL dimensions compared with surgery or chemotherapy.

**Health efficacy:** Based on Ashing-Giwa's (2005) contextual model, health efficacy includes components of health practice and the use of medical care. Cervical cancer has long been known to be associated with the use of tobacco (Frumovitz et al., 2005; Gotay, Farley, Kawamoto, & Mearig, 2008). Cervical cancer survivors were more likely to be current smokers (21%) compared with ovarian (10%) and endometrial (6%) survivors (Beesley, Eakin, Janda, & Battistutta, 2008). Studies also have shown that cervical cancer survivors who smoked reported poorer mental health and more emotional distress (Frumovitz et al., 2005). Bradley et al. (2006) reported that 20% of cervical cancer survivors were current smokers, 35% of which reported having decreased the frequency of their smoking since diagnosis. Consequently, in this study, as many as 55% of cervical cancer survivors were smokers. As the association between smoking and depression has been well-documented, along with the high prevalence of smoking among cervical cancer survivors, Bradley et al. (2006) suggested that cervical cancer survivors may be vulnerable to negative mood resulting from unhealthy lifestyles.

Coping strategies are thought to play an important role in managing the physical and psychological sequelae

associated with a cancer diagnosis and treatment (Costanzo, Lutgendorf, Rothrock, & Anderson, 2006). In essence, effective coping may bring about positive QOL outcomes, and ineffective coping may lead to poor QOL outcomes among cervical cancer survivors. Coping by positive reframing and acceptance predicts better social well-being, less distress, and better QOL. In contrast, coping by avoidant strategies is more robustly associated with poorer QOL and more distressed mood (Costanzo et al., 2006). Ramanakumar, Balakrishna, and Ramarao (2005) investigated the coping mechanisms among long-term cervical cancer and breast cancer survivors and found that appropriate health-seeking behavior, positive thinking, and strong emotional support from friends and family members are essential factors for women to cope capably.

**Psychological well-being:** Cancer survivors experience a wide array of psychological changes. Changes can be positive and negative. Hodgkinson et al. (2007) found that 68% of survivors in their sample endorsed at least one positive change item, such as self-growth, precious life, and appreciation of the relationship with others. Similar findings were reported in two qualitative studies. Akyuz, Guvenc, Ustunsoz, and Kaya (2008) reported that about 50% of the women participants and their spouses had positive gains from the survivorship

experience. These positive outcomes of survivorship included viewing the cancer experience as a rebirth, a wake-up call, or a second chance for life (Clemmens, Knafl, Lev, & McCorkle, 2008).

With respect to negative changes, cervical cancer survivors reported significantly higher anxiety and more dysphoria, anger, and confusion than either endometrial cancer survivors or healthy controls (Bradley et al., 2006). de Groot et al. (2005) indicated that research, to date, has not addressed the stigma and blame associated with cervical cancer because of its etiologic link with the sexually transmitted human papilloma virus. Additional psychosocial issues identified among women with cervical cancer include health-related worries, such as fear of recurrence or concerns about reproductive ability (Wenzel et al., 2005); self-concept changes, such as reduced self-confidence, altered experience as a woman, and loss of attractiveness (Greimel et al., 2009); high rates of depression, anxiety, and adjustment disorders (McCorkle, Tang, Greenwald, Holcombe, & Lavery, 2006); and fatigue (Vistad, Fosså, Kristensen & Dahl, 2007).

Cervical cancer survivors' family members also had worries about cancer and its related treatment. de Groot et al. (2005) found that cervical cancer survivors and their

**Table 2. Summary of the Qualitative Quality-of-Life (QOL) Studies With Cervical Cancer Survivors**

Study	Design	Sample	Findings
Akyuz et al., 2008	A phenomenologic study exploring the lived experience of gynecologic cancer survivors and their spouses	4 cervical cancer survivors in a group of 19 gynecologic cancer survivors 6–10 years postdiagnosis and their spouses	Positive changes included women and their spouses discovering positive gains, seeking psychological help, accepting the disease, and complying with treatment. Negative impacts included common physical side effects, such as pain, nausea, vomiting, and hair loss; and common psychological effects experienced by women and men, such as fatigue, insomnia, stress, anxiety, and fear.
Ashing-Giwa et al., 2006	A focus group investigating survivorship issues among Latinas with cervical cancer	20 cervical cancer survivors a mean of two years postdiagnosis and 6 healthcare providers	Pain; bladder, bowel, and sexual health problems; and relationship burdens affected QOL on an individual level. Language barriers, employment issues, difficulty accessing quality care, and poor patient-physician relationships affected QOL on a systemic level.
Burns et al., 2007	A phenomenologic study exploring women's lived experience and sexuality following treatment of cervical cancer	13 cervical cancer survivors 2–3 years after treatment	Physical side effects included urinary incontinence and bowel dysfunction. Cervical cancer survivors reported anxiety about sexual activity, reduced sexual desire, and negative perceptions of body image.
Clemmens et al., 2008	To explore the QOL of long-term cervical cancer survivors and factors promoting their adaptation	19 cervical cancer survivors 7–28 years postdiagnosis	Three survival patterns were identified: moving on, which described cancer as an awful experience; ongoing struggles, which reflected the ongoing struggle with negative outcomes; and renewed appreciation, which emphasized positive outcomes of survivorship.
Ramanakumar et al., 2005	To appraise coping mechanisms among Indian long-term breast cancer survivors and cervical cancer survivors	25 cervical cancer survivors and 27 breast cancer survivors at least five years postdiagnosis	Health-seeking behavior and emotional supports were essential factors for capably coping. Positive thinking, purpose in life, and strong family support played key roles in treatment completion.

spouses expressed equal intensities of concern regarding cancer and its treatment and intimate factors such as sexuality. In a qualitative study, Akyuz et al. (2008) reported that men also experienced psychological problems such as fatigue, insomnia, stress, anxiety, and fear because they were anxious about their wives' conditions. In addition, men stated that their sexual life was affected because their wives expressed little sexual desire during and after cancer treatment. Other effects on families included changing roles and responsibilities, such as women's household roles being taken over by their spouses or older family members (Akyuz et al., 2008).

Although cervical cancer survivors indicated that they experienced some positive psychological changes in their life, common sequelae that disrupt the psychosocial aspects of life for cervical cancer survivors include uncertainty in the future, loss of fertility, fear of recurrence, distress, anxiety, depression, and other depressive symptoms. Cervical cancer survivorship also has an impact on the whole family.

### Systemic Level of Quality of Life

According to Ashing-Giwa's (2005) contextual model, the systemic level of QOL contains the following four domains: socioecologic, cultural, demographic, and healthcare contexts.

**Socioecologic context:** Major socioecologic factors identified as influencing QOL among cervical cancer survivors were lack of social support, role limitations, and marital and employment status (Ashing-Giwa et al., 2009; Awadalla et al., 2007). In addition, a low education level also was associated with poorer QOL scores, particularly in the mental subscale of QOL (Chen, Yeh, Kung, & Ho, 2007). With respect to socioeconomic factors, McCorkle et al. (2006) found that the at-risk participants included those of a lower economic status. Korff et al. (2009) reported that cervical cancer survivors were less likely to have jobs than the general population, indicating their less favorable socioeconomic status.

**Cultural context:** Few studies have investigated cultural factors within the systemic level predicting the QOL of cervical cancer survivors, although one investigated the issues related to QOL among Chinese cervical cancer survivors. Lai et al. (2009) found that, within Chinese society, a diagnosis of cervical cancer was viewed as a social stigma. Social rejection of cervical cancer survivors is common because cervical cancer is considered to be a sexually transmitted disease related to early sexual activity and having multiple sexual partners. This rejection causes women to have long-term feelings of self-blame, thus affecting their emotional well-being (Lai et al., 2009). Studies conducted among multi-ethnic cervical cancer survivors found that language barriers influence Latina Americans' access to quality care, with other cultural factors such as faith in God also affecting cervical cancer survivors' ability to

cope with the illness (Ashing-Giwa et al., 2006, 2009). Ashing-Giwa et al. (2006) further indicated that faith in God promoted cervical cancer survivors' well-being and coping capabilities, but possibly delayed their care-seeking behaviors.

**Demographic context:** In terms of age-related demographic factors, Wenzel et al. (2005) found that younger (childbearing age) cervical cancer survivors had more reproductive concerns than the healthy controls. Wenzel et al. (2005) further stated that more reproductive concerns were correlated with more cancer-specific distress and poorer QOL. Gotay et al. (2008) found that older cervical cancer survivors had better mental health and fewer intrusive stressors than their younger counterparts.

**Healthcare context:** Regarding healthcare context issues in multi-ethnic societies, Ashing-Giwa et al. (2006) found that Latina Americans had poor patient-physician relationships and difficulties accessing quality care, resulting in poor QOL among Latina cervical cancer survivors. In a later study, Ashing-Giwa et al. (2009) reported that the quality of the doctor-patient relationship is an important predictor of QOL among cervical cancer survivors; however, the study does not provide an explanation of how doctor-patient relationships predict cervical cancer survivors' QOL.

In summary, cervical cancer survivors reported that they had good levels of general health status, that advanced stages of diagnosis and treatment with radiation therapy had severe adverse effects on their QOL, and that unhealthy lifestyles such as smoking and negative health-related behaviors such as disengagement coping were factors related to the individual QOL level of cervical cancer survivors. Women reported both negative and positive outcomes of cervical cancer survivorship. In addition, education levels, marital status, socioeconomic factors, cultural factors (i.e., language barriers), and healthcare context-related factors (i.e., access to quality care) are contextual factors influencing the QOL of this target population.

### Instruments Used to Measure Quality of Life

Three types of QOL instruments (generic, cancer-specific, and cancer site-specific) are mainly used to assess QOL in cervical cancer survivors. The two most common generic QOL questionnaires are the World Health Organization's Quality of Life–Brief and the SF-36®. Most reviewed studies used generic instruments to assess the QOL of cervical cancer survivors; however, these generic instruments failed to identify cancer-specific QOL issues.

Although two common cancer-specific QOL questionnaires exist, including the European Organisation for Research and Treatment of Cancer's Quality-of-Life Questionnaire–Core 30 items (EORTC QLQ-C30) and the Functional Assessment of Cancer Therapy–General

(FACT-G), both instruments are designed to measure QOL among all types of adults with cancer, and they lack items to measure cervical cancer survivors' specific concerns. The EORTC QLQ-cervical cancer 24 items (Cx24) and FACT-G/cervical cancer (Cx) are site-specific instruments for women with cervical cancer. However, both site-specific instruments capture fewer of the long-term sequelae of cancer treatments, such as fear of recurrence, changes in body image, and generic risk to women's family members (Hewitt, Greenfield, & Stovall, 2006).

## Discussion

### Limitations

In searching for literature, five electronic databases provided comprehensive coverage of key English- and Chinese-language nursing, medical, and health-affiliated journals. The titles and abstracts of the articles were screened only by the first author. However, a checklist with clear inclusion and exclusion criteria was used for the screening process and agreed upon by the research team.

### Trends in Quality-of-Life Studies

This review is consistent with Bloom et al. (2007) and Vistad et al. (2006), which found that types of treatment are important predictors of cancer survivors' QOL. Both quantitative and qualitative studies were conducted to examine different aspects of cancer survivorship. Although very little research has examined the positive outcomes of cervical cancer survivors, Mellon, Northouse, and Weiss (2006) conducted a population-based study among different types of cancer survivors and found that surviving cancer can be positive and is generally linked to feelings of self-improvement, personal growth, appreciation of life, and an improvement in relationships. Therefore, a clear need exists to explore the positive aspects of cervical cancer survivorship experience in more detail.

Most studies have reported QOL among cervical cancer survivors involving physical, psychosocial, and sexual well-being at the individual level. This review includes studies (Ashing-Giwa et al., 2006, 2009) that investigated QOL among cervical cancer survivors more broadly at both the individual and systemic levels of QOL. In addition, population-based studies also have investigated cervical cancer survivors' risky health behaviors and lifestyle issues. For example, Beesley et al. (2008) found that cervical cancer survivors were more likely to be current smokers than other gynecologic cancer survivors. Similar health behavior studies should aim at identifying which health-related behaviors and lifestyles contribute to the poor QOL of cervical cancer survivors.

Two quantitative studies investigated QOL issues among cervical cancer survivors' families. de Groot et al. (2005) investigated spouses' psychological concerns and found that cervical cancer survivors' spouses experienced equal intensities of concern about cancer, related treatment, and sexuality. Another study (Awadalla et al., 2007) investigated the QOL of cervical cancer survivors and their family caregivers and found that different types of family caregivers would influence the QOL of cervical cancer survivors. Therefore, a clear need exists to investigate QOL issues among cervical cancer survivors and their families.

### Future Research Directions

The trends in these reviewed studies shed light on the future directions for QOL research in cervical cancer survivors. The cancer survivorship literature indicates that negative as well as positive outcomes are inherent in the survivorship experience. More studies are needed to explore the positive aspects of cervical cancer survivorship in detail to optimize the positive outcomes for promoting cervical cancer survivors' QOL. In addition, health-related lifestyles (e.g., smoking) and behavior factors (e.g., coping strategies) are likely to explain some of the variance of QOL in cervical cancer survivors. More behavior intervention studies are needed to reduce the risk factors contributing to the poor QOL of cervical cancer survivors. In addition, cancer is viewed as a family disease because its impact is not isolated to an individual but, instead, affects the whole family (Hewitt et al., 2006). More exploratory studies are needed to determine the impact of survivorship on cervical cancer survivors' families in more detail.

The majority of studies examined in this review were cross-sectional. Prospective and longitudinal study designs can illuminate the dynamic nature of QOL and the treatment trajectory. For example, Vaz et al. (2008) chose a longitudinal study design and found that, 30 days after the initial radiation therapy, patients reported a notable elevation of all QOL scores. As the length of cervical cancer survivorship increases, longitudinal and prospective research into women's survival periods following treatment is necessary to document the ongoing changes of QOL.

Finally, because of the long-term and late effects of cancer treatment, cervical cancer survivors may still live with sequelae (e.g., changes in body image and fear of recurrence). These issues are not covered adequately in the six multidimensional QOL instruments used in these studies. In addition, the socioecological and cultural factors are essential components at the systemic level of QOL (Ashing-Giwa, 2005). None of the existing instruments adequately incorporate contextual factors into assessing QOL. This review demonstrates that a need exists to develop new instruments to evaluate the systemic level of QOL of cervical cancer survivors.

## Conclusions and Implications for Nursing

This review described the trends of QOL studies in cervical cancer survivors, including that researchers are starting to be concerned with the positive aspects of cancer survivors, behavior studies are examining unhealthy lifestyles and behaviors contributing to poor QOL among cervical cancer survivors, and studies are investigating the issues of QOL among cervical cancer survivors' families. In addition, three main types of instruments are used to measure cervical cancer survivors' QOL. However, none of the three adequately consider the systemic level of QOL.

Nurses play an important role in assessing and promoting QOL for cervical cancer survivors as well as all other types of cancer survivors. Assessing QOL among cervical cancer survivors could facilitate the communication between nurses, other healthcare professionals, and survivors in terms of seeking insights of health

status. The outcomes of these QOL assessments could guide the nurses in providing supportive care for cervical cancer survivors.

Current QOL research in cervical cancer survivors mainly focuses on an individual-centered paradigm, such as the impact of treatment and disease on women. More exploratory studies are needed to examine the socioecological and cultural domains at the systemic level of QOL. Expanding the understanding of QOL and related factors in cervical cancer survivors would enable nurses to develop innovative interventions to improve QOL and overall survival outcomes for this target population.

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