



# Changes of Symptom Cluster Occurrence in Thai Women with Cervical Cancer from Pre to Post Treatment

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## Abstract

Purpose of this part of the longitudinal study was to examine the change of symptom cluster occurrence in Thai women from pre, during, and one month post treatment for cervical cancer. One hundred and ninety women were recruited from 4 hospitals: 1 hospital affiliated university, 2 military hospitals, and 1 hospital under the National Cancer Institute. The modified Memorial Symptom Assessment Scale and the Demographic, Disease, and Treatment Questionnaires were used to collect data at pre, during, and one month post treatment. Data were analyzed by factor analysis. Results reported that symptom cluster occurrences are different at each time of treatment. There were 3 clusters of symptom occurrence at pre treatment; emotion, response, and physical-related cancer. During treatment were gastro-intestinal symptoms, emotion, and side effects-related treatment. While there were 2 clusters of symptom occurrence at post treatment; emotion and side effects-related treatment.

These findings can be provided as evidenced base for appropriate care in Thai women with cervical cancer from pre to post treatment. Self care to relieve symptom cluster occurrence at each time of treatment is recommended for further study.

**Keywords:** cervical cancer, Thai women, symptom cluster occurrence

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## Introduction

Women with cervical cancer experience multiple symptoms occurring at pre, during, and post treatment.<sup>(1,2)</sup> These symptoms were usually caused by cancer, treatment, combination of cancer and treatment, or even psychological response. As the evidence based of top five symptoms before treatment in cervical cancer patients were vaginal discharge, worrying, difficulty sleeping, constipation, and weight loss.<sup>(1)</sup> Top five symptoms were also reported during treatment; fatigue, poor appetite, rectal irritation, diarrhea, and weight loss. Even one month after treatment, these women were also had the following symptoms; changes in skin, difficulty sleeping, sweating, worrying, and feeling irritable.<sup>(1)</sup> From the longitudinal study, evidence supported that there were multiple symptoms along the illness trajectory at each period time of treatment.<sup>(1,2)</sup> In addition, Sumdaengrit et al (2008)<sup>(2)</sup> also confirmed that these number of symptom occurring had changed over time from pre to post treatment. However, there was no research study in symptom cluster at each time of treatment. This study will fill the gap of knowledge in symptom cluster in women with cervical cancer receiving treatment.

From the concept of symptom cluster, Dodd et al (2001)<sup>(3-5)</sup> defined it as concurrent and 2 or more than 2 related symptoms with or without etiology. The symptom cluster was addressed in the concept of "symptom experience" in the symptom management model which was developed by faculties at the University of California at San Francisco School of Nursing.<sup>(3)</sup> To accrue reliability of measurement for the symptom cluster, it may need to collect symptoms in the same diagnosis and treatment.<sup>(6,7)</sup> This is because the symptoms or side effects occurring related with types of treatment.<sup>(8)</sup>

In Thailand, there was no research study in women with cervical cancer evaluated at different time points of cervical cancer treatment. It may need

to examine the symptom cluster occurring at different time of their cervical cancer treatments. Then, the purposes of this study were to determine the number and types of symptom clusters occurrence at pre, during, and one month after treatment in Thai women with cervical cancer. These result information from this study will assist health care providers know the symptom cluster occurrences at each time of cervical cancer treatment to provide appropriate information regarding to symptoms cluster occurrence to reduce symptom distress<sup>9</sup> in those women may experience.

## Purpose

Purpose of this part of the longitudinal study was to examine the symptoms cluster at each time of cervical cancer treatment.

## Method

**Design and setting:** This is a part of longitudinal descriptive design was used to obtain data pre, during, and one month post treatment for cervical cancer. Detailed procedural information can be found in Sumdaengrit et al.<sup>(1,9)</sup> A convenience sample of 205 women, with cervical cancer, was recruited from four hospitals (one university; two military; and one governed by the Thai National Cancer Institute). Data were collected in women with cervical cancer received treatment provided by radiologists and gynecologists during May 2006-July 2007. Approval to conduct the study, prior to data collection, was granted by the Institutional Review Board of Mahidol University and each respective hospital.

**Sample:** A determination of 205 subjects were required using power analysis, based on the number of 25% attrition rate subjects in a previous longitudinal research in symptom severity.<sup>(10,11)</sup> Before data collection one week, the primary investigator (PI) reviewed each potential subject's chart, to determine if she met the inclusion criteria, while she was being

examined by her physician in gynecological-oncology clinic. The inclusion criteria were women who had; 20 year of age or older; newly diagnosed with cervical cancer; receiving standard care provided by radiologists and gynecologists; determined to have European Cooperative Oncology Group (ECOG) scores less than or equal to two (ambulatory, capable of all self-care, unable to carry out work activities, up and about more than 50% of waking hours); able to speak Thai; and, willing to participate. The PI informed the purposes and what would be involved by being in the study to those women who met the criteria. It included the confidentiality and anonymity of their data and they can withdraw from the study without negative repercussions at any time. Those 205 women initially signed consent form to participate a study but 15 (7.31%) dropped out because they felt fatigued. Then, 190 women left for this study.

**Instruments:** Data were collected from two self-report instruments. They were : the Demographic, Disease and Treatment questionnaire and the Modified Memorial Symptom Assessment Scale (MMSAS).

The PI created the Demographic, Disease and Treatment Questionnaire to obtain general information about each participant. It included subject's age, years of education, marital status, financial status, family caregiver and living arrangements. Additionally with each woman's history of medical record was reviewed to obtain information about the stage of cervical cancer and types of treatment.

The Memorial Symptom Assessment Scale (MSAS)<sup>(12)</sup> is a three-scaled, validated, multidimensional symptom assessment instrument that measures one's rate, severity, and distress associated with 32 prevalent symptoms. In addition, open-ended questions are provided for symptoms not listed. The MSAS has been used widely to assess symptom experience among cancer patients, is in the public domain and is open to use via registration at <http://www.mywhatever.com/cifwriter/content/41/pe1262.html>.<sup>(13)</sup>

In this study, the PI reviewed the literature and modified the MSAS by adding 4 prevalent symptoms (vaginal discharge, headache, rectal irritation and fever) found among cervical cancer patients receiving treatment. By so doing, this brought the list of symptoms to a total of 36. To determine the level of symptom occurrence, subjects were asked to respond "yes" or "no" as to whether they experienced the particular symptom. Subjects then were asked to respond on a 4-point Likert-like scale, ranging from "1= slight to 4 = very severe," as to the level of intensity of each symptom being experienced. In addition, they indicated how much distress they experienced, from each of the symptoms, by responding on a 5-point Likert-like scale, which ranged from "0 = not at all to 4 = very much." Overall symptom occurrence, severity, and distress were calculated by summing and averaging the scores of each of the three scales. In this study the PI focused on the number of symptoms occur at each time of treatment.

Content of the modified versions of the MSAS was validated, for use with cervical cancer patients, by five bilingual Thai experts (one gynecologic-oncology physician, three advanced practice oncology nurses, and one oncology nursing instructor). The item-level content validity index (I-CVI)<sup>(14)</sup> and the scale-level content validity index (S-CVI)<sup>(14)</sup> for this modified MSAS were found to be 1.00.

Reliability of symptom occurrence was determined among 20 subjects during treatment, via three days of test-retest, and found to be 0.78. These values are consistent with prior one day MSAS test-retest reliabilities<sup>(15)</sup>. Due to the fact one's symptoms may change over time, the stability of the instrument was tested via three days of test-retest.

**Procedure:** The PI collected data in a quiet and private location at each hospital, during the week before each subject began treatment, between the 3<sup>rd</sup> and 4<sup>th</sup> week of treatment, and one month after completion of treatment. Before treatment, samples



were asked to complete the Demographic, Disease and Treatment Questionnaire, and the modified MSAS, in that order. During and post treatment, administration of only the modified MSAS was carried out. It spent 30 minutes to complete all questionnaires during each data collection.

## Results

Results from factor analysis demonstrated three symptom clusters at pre treatment; emotion, response, and physical-related cancer. During treatment, it also found three clusters; gastro intestinal (GI), emotion, and side effect - related treatment. While at post treatment, results revealed only two clusters; emotion-related cancer and side effect-related treatment. All result of symptom cluster occurrences were reported as in the Table 1-3.

**Extraction method:** Principal Component Analysis; **Rotation method:** varimax rotation with Kaiser Normalization

## Discussion

This study is the first study to describe symptom clusters in Thai women with cervical cancer at

each time of receiving treatment. There are three symptom clusters; emotional, response, and physical - related cancer. These are new symptom clusters findings at pre treatment, however, it can be explained for emotional related cancer: feeling sad, worrying, and feeling irritable. This is because when women were informed that they had cancer, they responded the "sad news" with emotional symptoms<sup>1</sup>. These women might concern about the cancer which is perceived as a bad news. In addition, they might extend their anxiety about their treatment side effects, financial support, and the ways to manage their lives. This is specialty for Thai women who do multiple roles such as mother, daughter, jobs or caregivers. For the second and third factor response and physical-related cancer. These two clusters might mix together between physical and emotional response to cancer. There is only one symptom-vaginal discharge - involve cervical cancer, however, another symptoms such as constipation, lack of energy, pain were not involve with cervical cancer. It might occur because these women concerned about their cancer and they cannot eat and sleep then, they had lack of energy. During treatment, there were three clusters: GI symp-

**Table 1** Demonstrated Symptom Cluster Occurrences at pre treatment (N=190)

Symptoms	Factor I (emotion - related cancer)	Factor II (response - related cancer)	Factor III (physical - related cancer)
Feeling sad	.871		
Worrying	.819		
Feeling irritable	.684		
Constipation		.704	
Feeling bloated		.612	
Weight loss		.596	
Lack of energy			.641
Vaginal discharge			.558
Pain			.557
Difficulty sleeping			.533

**Table 2** Demonstrated Symptom Cluster Occurrences during treatment (N=190)

<b>Symptoms</b>	<b>Factor I</b> (GI symptoms - related treatment)	<b>Factor II</b> (emotion- related treatment)	<b>Factor III</b> (side effect - related treatment)
Lack of appetite	.641		
Weight loss	.602		
Nausea	.543		
Diarrhea	.511		
Dizziness	.501		
Lack of energy	.447		
Feeling bloated	.435		
Rectal infection	.409		
Worrying		.701	
Vaginal discharge		.601	
Feeling irritable		.588	
Difficulty sleeping		.531	
Feeling nervous		.471	
Dry mouth		.430	
Problems with urination Itching			.670
Pain			.618
Feeling drowsy			.562
			.455

**Table 3** Demonstrated Symptom Cluster Occurrences at post treatment (N=190)

<b>Symptoms</b>	<b>Factor I</b> (emotion - related cancer)	<b>Factor II</b> (side effect - related treatment)
Worrying	.795	
Difficulty sleeping	.606	
Feeling bloated	.583	
Lack of energy		.726
Changes in skin		.725
Sweats		.551



toms, emotion, and side effects-related treatment. These findings are not congruent with previous study in patients undergoing radiation therapy<sup>(16)</sup>. This is because study conduct in different group of patients. Radiotherapy is a local treatment and it cause different side effect according to different areas. At one month post treatment, there were two factors; emotion-related cancer and side effect-related treatment. These findings are congruent with previous study in patients undergoing radiation therapy<sup>(16)</sup>. This is because patients usually concern about uncertainty after treatment.

Findings revealed the different numbers and the specific symptoms within each cluster across the three time points of treatment. This part of results was partly congruent with previous studies<sup>(16,17)</sup>. Two parts of symptom cluster were (1) emotion response symptom cluster and (2) side effects symptom cluster. These symptom clusters were found over time since pre until post treatment. In addition, emotion symptom cluster was found in other studies of patients who underwent radiation before and after treatment. It may note that even women did not have any side effects from treatment, they need health care team provide care and emotional support for them. This might be needed further study and explore what these women need.

### **Strength and Limitations**

The strength of this study was that symptom occurrences were measured only women with cervical cancer. All these women were treated with radia-

tion therapy as a principal treatment for cervical cancer. In addition, all symptoms occurrences were record at the same time over the radiation treatment. However, this study was conducted among a convenience sample receiving treatment for cervical cancer at one of four hospitals in Thailand. Therefore, the findings are generalizable only to those similar to the subjects in this study. In addition, since data obtained were self-report, all subject's responses were assume to be truthful.

### **Conclusions and Recommendations**

Symptoms cluster occurrence related to cervical cancer treatment are a major problem women experience prior to, during and after treatment. To know these symptoms cluster occurrence at each time of treatment may be helpful in guiding health care providers can provide effective self-care activities to use pre-treatment, during treatment and post-treatment. Future research needs to examine the combination of self-care activities used by women, with cervical cancer, pre-treatment, during treatment and post- treatment. Such examination could provide additional information on the effectiveness of the combined self-care activities used, as women contend with each symptom cluster.

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Original Articles/นิพนธ์ต้นฉบับ

# การเปลี่ยนแปลงชุดของอาการที่เกิดขึ้นในสตรีไทยที่เป็นมะเร็งปากมดลูกตั้งแต่ระยะก่อนจนถึงภายหลังรักษา

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## บทคัดย่อ

การศึกษานี้เป็นส่วนหนึ่งของการศึกษาแบบติดตามไปข้างหน้า มีวัตถุประสงค์เพื่อสำรวจชุดของอาการที่เกิดขึ้นในสตรีไทยที่เป็นมะเร็งปากมดลูกรายใหม่ ตั้งแต่ก่อน ระหว่างและภายหลังการรักษา 1 เดือน ในสตรีจำนวน 190 คนที่มีคุณสมบัติตามเกณฑ์ที่กำหนดและเข้ารับการรักษาในโรงพยาบาลสังกัดมหาวิทยาลัย 1 แห่ง กระทรวงกลาโหม 2 แห่ง และสถาบันมะเร็งแห่งชาติ 1 แห่ง เครื่องมือที่ใช้ในการวิจัยมี 2 ชนิดได้แก่ แบบบันทึกข้อมูลส่วนบุคคล โรคและการรักษา แบบประเมินอาการจากโรคและการรักษา เก็บข้อมูล 3 ครั้ง ตั้งแต่ก่อน ระหว่างและภายหลังรับการรักษาครบ 1 เดือน

ผลการศึกษาพบว่า ชุดของอาการที่เกิดขึ้นมีความแตกต่างกันในระยะก่อน ระหว่าง และภายหลังการรักษา โดยในระยะก่อนรักษามี 3 ชุดได้แก่ ภาวะอารมณ์ การตอบสนอง และการเปลี่ยนแปลงด้านร่างกายที่สัมพันธ์กับมะเร็งปากมดลูก ระยะระหว่างรักษามี 3 ชุดเช่นกันได้แก่ อาการของระบบทางเดินอาหาร ภาวะอารมณ์ และอาการข้างเคียงที่สัมพันธ์กับการรักษา ส่วนในระยะภายหลังรักษามีเพียง 2 ชุด ได้แก่ ภาวะอารมณ์ และอาการข้างเคียงที่สัมพันธ์กับการรักษา การเกิดชุดของอาการที่มีความแตกต่างกันในแต่ละช่วงของการรักษาจะช่วยให้บุคลากรในทีมสุขภาพสามารถใช้เป็นข้อมูลพื้นฐานในการช่วยเหลือและจัดหาวิธีการที่เหมาะสมเพื่อลดชุดของอาการข้างเคียงที่เกิดขึ้น พร้อมทั้งส่งเสริมให้ผู้ป่วยได้รับการดูแลอย่างเหมาะสมกับชุดของอาการที่เกิดขึ้นในแต่ละช่วงเวลาของการรักษาต่อไป

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