Translation and validation of the Chinese version of the MD Anderson Symptom Inventory for measuring perioperative symptom burden in patients with gynecologic cancer

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Abstract

Background: Gynecologic cancers are among the most prevalent malignancies in China, and millions of gynecologic cancer patients are expected to undergo open abdominal surgery as initial treatment. The tumor- and surgery-related symptom burden are not well studied owing to a lack of a standardized and validated assessment tool in Chinese. The study was to translate and validate the MD Anderson Symptom Inventory for measuring perioperative symptom burden in gynecologic cancer patients (MDASI-PeriOp-GYN) and examine the utility of the Chinese version.

Methods: The MDASI-PeriOp-GYN was translated in a stepwise manner. First, two native speakers independently translated the 9 PeriOp-GYN symptom items. Then the 9 items were translated back into English by another two bilingual translators. After discussion and revision, the four translators reached an agreement. The finalized Chinese version was administered to women with three common gynecologic cancer types (cervical, ovarian, and endometrial cancers) recruited from the gynecological oncology department of Sichuan Cancer Hospital & Institute between July and October 2019. Reliability and validity of the translated version were assessed.

Results: Overall, 324 women with gynecologic cancers were enrolled. Cronbach's α values were 0.826 and 0.735 for the symptom severity and interference scales, respectively. Test-retest reliability values were 0.885, 0.873, and 0.914 for the symptom severity, PeriOp-GYN, and interference scales, respectively. Significant correlations were found between the MDASI-PeriOp-GYN-C and EORTC QLQ-C30 along with the QLQ-OV28 module (-0.608–0.871, P<0.001). Known-group validity was supported by significant differences in the scores of the four scales grouped by time intervals, surgery type, and functional status (all P<0.01).

Conclusions: The MDASI-PeriOp-GYN-C is a valid and reliable tool for measuring symptoms in Chinese patients undergoing surgery for gynecologic cancers. The tool could be used in clinical practice and clinical trials to instantly gather patients' health and quality of life data.

Introduction

Gynecologic cancers, particularly cervical, ovarian, and endometrial cancer, rank among the top 10 causes of female morbidity and mortality in China ([i]). Surgery is one of the main treatment options, particularly for early-stage gynecologic cancer patients. However, tumor- and surgery-related symptoms have negative effects on patients' functional status and quality of life ([ii],[iii]). Active management of the perioperative symptom burden can reduce or even prevent postoperative complications, prompt initiation of postoperative supplementary therapy, and avoid potential reduction in progression-free survival ([iv]). The key to effective symptom management is using a standardized and validated assessment tool. Nonetheless, no tools adapted for Chinese patients are currently available for assessing perioperative symptom burden of gynecologic cancers.

The MD Anderson Symptom Inventory (MDASI) is a reliable and validated instrument for measuring common cancer-related symptoms ([v]). Recently, MDASI modules for specific patient populations have been developed and psychometrically validated ([vi],[vii]). The MDASI for measuring perioperative symptom burden in

gynecologic cancer patients (MDASI-PeriOp-GYN) was developed for patients undergoing gynecologic surgery and found to be a valid, reliable, and concise tool ([viii]).

Therefore, this study aimed to translate and validate the MDASI-PeriOp-GYN and examine the utility of the Chinese version (MDASI-PeriOp-GYN-C) to assess perioperative symptom burden in Chinese gynecologic cancer patients.

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Methods

Translation and cultural adaption of the MDASI-PeriOp-GYN

The MDASI-PeriOp-GYN comprises the MDASI items and nine PeriOp-GYN symptom items (8). The MDASI items include 13 core items assessing symptom severity and six items assessing symptom-related functional interference (3). The MDASI-C was validated by Wang et al. in 249 Chinese cancer patients and used directly ([i]).

After obtaining consent from the original author, two native speakers of Chinese fluent in English independently translated the nine PeriOp-GYN symptom items into Chinese characters; one with a master's degree in nursing, who ensured accuracy and integrity of the items from a clinical perspective, and the other

with a master's degree in English, who kept the items concise from an ordinary person's perspective. After the first Chinese version was created, another two bilingual translators who had not seen the original items back-translated this version to English. Next, four translators modified "clouding of consciousness" to "confusion," and "fever" to "hot flashes" in Chinese. Therefore, each item was rendered in its most intelligible form and easier to understand in Chinese. The four translators reached a consensus on the Chinese version of the nine PeriOp-GYN symptom items, which was tested on 20 randomly selected postoperative patients. All items were clear and understandable; thus, the MDASI-PeriOp-GYN-C was finalized.

Design

In China, cervical, ovarian, and endometrial cancers are the three most common gynecologic cancers. Using a longitudinal design, a convenience sample completed the questionnaires before surgery and at 1, 5, and 7 days after surgery.

Participants

Patients were recruited between July and October 2019 from the Sichuan Cancer Hospital. The inclusion criteria were as follows: (a) age ≥18 years; (b) diagnosis of cervical, ovarian, or endometrial cancer; (c) awareness of cancer diagnosis; (d) scheduled surgery; and (e) ability to read and speak Mandarin. The exclusion criteria were (a) major psychiatric illness and (b) participation in other clinical trials that could affect this study, including trials of drugs for controlling symptoms.

Procedures

Patients were recruited on hospital admission. All patients who met the inclusion criteria were invited to participate. The investigators explained that the survey was conducted at several timepoints, and written informed consent to participate was obtained. Patients were given the questionnaire before surgery and retrieved it after completion. After surgery, patients were distributed questionnaires at scheduled timepoints (discharged patients completed online surveys), so that test-retest correlations could be calculated.

The study was approved by the Ethics Committee of Sichuan Cancer Hospital (IIT2019018). All efforts were made to protect patients' privacy and maintain data confidentiality.

Measurements

For descriptive purposes, we evaluated the following socio-demographic and disease characteristics using a self-developed questionnaire: age, ethnicity, education, marital status, employment, chronic disease, tumor site, metastatic disease, cancer diagnosis, tumor metastasis, prior treatment, and type of surgery. Patient's functional status was assessed using the Eastern Cooperative Oncology Group Performance Status (ECOG PS) Scale [ii].

The MDASI-PeriOp-GYN was developed by Wang et al. in 2019. It contains 28 items grouped into two subscales (symptom and interference). Each item is scored from 0 ("not present" or "does not interfere") to 10 ("the worst possible" or "interferes completely"). A score is reported for each item as well as an overall score

for each subscale. The higher the score, the greater the symptom burden. The original version has an internal consistency (Cronbach's alpha coefficient) of 0.86–0.89.

The European Organization for Research and Treatment of Cancer quality of life questionnaire-core 30 (EORTC QLQ-C30) is a cross-culturally accepted cancer-specific health-related quality of life (HRQL) questionnaire that comprises five functioning scales: three symptom scales, six single-item scales, and a global quality of life scale ([iii]). The ovarian cancer module (OV28) of the EORTC QLQ contains disease-specific items related to the quality of life of ovarian cancer patients and was developed in a multicultural setting ([iv],[v]). The EORTC QLQ-OV28 comprises 28 items and is scored according to the EORTC conventions. A higher score represents a higher symptom/problem levels. Both questionnaires should be used together. The Chinese version has been translated and validated by Chie et al. and had an internal consistency reliability of 0.74–0.89 ([vi]).

Statistical analysis

IBM SPSS Statistics 22.0 (IBM, Armonk, NY, USA) was used for statistical analysis. All reported *P* values are 2-tailed. Statistical significance was set at $P<0.05$. Following the method used in the original MDASI-PeriOp-GYN validation study, four scales were presented: MDASI-core (13 core items), PeriOp-GYN (nine items), symptom severity (22 items), and interference (6 items). The MDASI-PeriOp-GYN-C was examined for reliability and validity.

Reliability was evaluated based on internal consistency and test-retest reliability. The internal consistency was assessed using separate Cronbach coefficient α values for the four scales. For stability reliability, we established test-retest correlations by intra-class correlation (ICC) of data from two timepoints (day 5 and 7 after surgery) because the patients' condition was stable on these two days (8).

Methods for estimating validity included criterion validity and known-group validation. Criterion validity was examined by Spearman's rank correlation coefficient, and EORTC QLQ-C30 along with QLQ-OV28 was used as an external criterion. Known-group validation was examined by comparing the scores of the four scales between different time intervals, surgery type, and functional status. Independent two-sample t-tests and analysis of variance were used to compare the means between groups. When normality assumption was not satisfied, the Nonparametric tests (e.g., Kolmogorov-Smirnov and Kruskal–Wallis tests) were used .

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Results

Response rate

Overall, 330 questionnaires were distributed and returned preoperatively (response rate, 100%), without missing data. Surgery was cancelled for six patients due to different reasons (two-menses, three-hypertension, one-change of surgical intention in patient). The remaining 324 patients scheduled for surgery completed the survey with no missing data (effective response rate, 98.2%).

Patients' characteristics

Table 1 shows the demographic and disease-related patients' characteristics. The patients' age ranged from 22 to 75 years. Most patients were Han (97.5%), married or domestic partner (92.9%), with less than a high school degree (59.3%), and had no chronic disease (90.4%). The proportion of cervical, ovarian, and endometrial cancer was 46%, 31.2%, and 22.8%, respectively. Most patients (71.4%) underwent open surgery. Only 5.8% of patients had tumor metastasis, and most of them had a favorable functional status (ECOG PS 0 or 1).

Reliability

The results for internal consistency reliability are presented in Table 2. Cronbach's α ranged from 0.826 for the symptom severity scale to 0.735 for the interference scale. Cronbach's α was recomputed when each item was deleted, and the values were almost unchanged, indicating that each item made a contribution and should be retained.

The ICC was 0.922 for all items, 0.885 for the symptom severity scale, 0.873 for the PeriOp-GYN scale, 0.928 for the MDASI-core scale, and 0.914 for the interference scale (all P<0.001).

Validity

To assess the criterion validity, we examined the correlations between the MDASI-PeriOp-GYN-C and EORTC QLQ-C30 along with QLQ-OV28 (EORTC QLQ-OV58-C). Significant correlations were found for the symptom severity scale vs. the EORTC QLQ-OV58-C symptom scale, the MDASI-core scale vs. the EORTC QLQ-C30 symptom scale, the PeriOp-GYN scale vs. QLQ-OV28 symptom scale, and the interference scale vs. the EORTC QLQ-OV58-C functioning scale (all P<0.001; Table 3).

Table 4 shows the known-group validity. In the comparison of the scores of the four scales grouped by time intervals, surgery type, and functional status, the differences were statistically significant (P<0.01; Table 4). On

the first day after surgery, the scores for all scales were significantly higher than those before surgery (all $P<0.01$). Patients undergoing open surgery reported higher scores in all scales than patients undergoing minimally invasive surgery (all $P<0.01$).

Clinical application of the MDASI-PeriOp-GYN -C

Table 5 presents the severity of all items across the survey period. On postoperative day 1, fatigue, drowsiness, and poor appetite were rated as the top three severe core symptom items. Grogginess/confusion, hot flashes, and bloating were the most severe PeriOp-GYN items. On postoperative days 5 and 7, fatigue and poor appetite were the most severe core symptom items, while bloating and hot flashes were the most severe PeriOp-GYN items. After surgery, the interference scale scores decreased over time (all $P<0.001$).

Discussion

In this study, we successfully translated and validated a Chinese version of the MDASI-PeriOp-GYN using rigorous methodology in a sample of patients with three common gynecologic cancers at a cancer center in China. Our results provided support for the reliability and validity of the newly translated MDASI-PeriOp-GYN-C.

To our knowledge, this is the first study reporting reliability and validity data for the perioperative symptom burden in Chinese gynecologic cancer patients. The results of reliability and validity showed that the MDASI-PeriOp-GYN-C is a valid and reliable instrument for measuring symptom severity and related interference with functioning in perioperative Chinese gynecologic cancer patients, even with frequent measurement. Furthermore, the numeric rating scale could be integrated into the hospital information system or other computer systems, or an online questionnaire, so that this self-administered assessment was convenient and timely, and healthcare providers could offer timely intervention which contributed to better outcome ([i]).

The mean age of our participants was 51.95 years, consistent with the results of epidemiological studies on gynecologic cancers in China. The age-specific incidence of cervical cancer increases rapidly from the 35–39 years age group, with the peak incidence in the 45–49 years age group ([ii],[iii]). Ovarian cancer incidence increases after 40 years of age, reaching its peak in the 55–59 years age group ([iv]). Most of our participants (92.9%) had a spouse or domestic partner due to the traditional marriage and family in China.

Significantly, only 9.6% of participants had chronic diseases, including hypertension (n=18), diabetes (n=8), and hepatitis B (n=2), and three had both hypertension and diabetes. The incidence of hypertension and diabetes in Chinese adults was 27.9% and 10.9%, respectively; older adults, males, and urban residents had a higher prevalence ([v]). However, only 36.5% of diabetes patients and 30.5% of hypertension patients had been diagnosed by doctors ([vi],[vii]). Among the study participants, 144 (44.4%) were from rural areas, and 74 (22.8%) patients were diagnosed with endometrial cancer that closely related to hypertension and diabetes, which may be the reason for the small proportion of chronic disease patients among the participants.

The MDASI-PeriOp-GYN-C reliability was assessed via internal consistency and test-retest correlations. Internal consistency reliability was strongly supported with Cronbach's α well above 0.73 for the four scales. Test-retest correlations were assessed with a 2-day interval by completing the questionnaire on the fifth and seventh day postoperatively. The reason for choosing these timepoints was that the original study showed that

preoperative symptoms were less severe than postoperative symptoms, and symptoms were relatively stable on the fifth and seventh days after surgery (8).

Criterion validity was evaluated by comparing the responses on the MDASI-PeriOp-GYN-C with those on the Chinese version of the EORTC QLQ-C30 and its EORTC QLQ-OV28 module. The QLQ-C30 is the most widely used HRQL assessment in women with gynecologic cancers ([viii]). The use of QLQ-C30 and its QLQ-OV28 module could be recommended when the outcomes of interest are the core domains of HRQL or symptoms ([ix]), while the MDASI-PeriOp-GYN-C focused on symptoms and interference with functioning. Cancer-related symptoms greatly influence the patients' quality of life and might cause postoperative complications and delayed rehabilitation. However, the symptom burden may be related to personal circumstances, attitudes, and cultural differences. Our study showed high correlations between the symptom and interference scales of the two questionnaires, with values >0.6.

The results showed that within 7 days after surgery, symptom severity changed dramatically, which was consistent with the original study's findings (6). Professionals should conduct effective symptom management based on patient-reported outcomes to improve their quality of life and outcomes ([x],[xi]). Further studies are needed of symptom clusters in perioperative patients with different type of gynecologic cancers that affect the patients' quality of life to enable early treatment or prevention.

Within 1 week after surgery, fatigue was the most serious core symptom, followed by poor appetite, which was consistent with the results of previous studies (6,[xii]). There are numerous causes of fatigue, including poor appetite, which might result in inadequate dietary intake, particularly energy and protein intake. Fatigue might also be due to insufficient activity after surgery ([xiii]). Bloating and hot flashes were the most serious gynecologic symptoms. Hot flashes have been associated with hormone level changes after surgery, while bloating is caused by impaired gastrointestinal function. Patients reported that the symptoms interfered with their work and general activity, representing impaired physical function. Because of the deep-rooted traditional concept of patient or family caregivers, many postoperative patients rejected getting out of bed. After discharge, they stayed in bed, with little activity. Due to the above factors, multidisciplinary perioperative care including rehabilitation medicine is required for recovery and rehabilitation ([xiv],[xv]).

This study had limitations. First, all participants were from the Chinese mainland and spoke Mandarin and simplified Chinese. Due to differences in the cultural background and mainstream languages in Hong Kong, Macao, and Taiwan, further study on using the MDASI-PeriOp-GYN-C in these populations is needed. Second, 97.5% of the participants were of Han nationality. Differences in beliefs and living habits between the Han and minority nationalities may lead to differences in expressing perioperative symptoms, which need further studies. Third, this study only included patients with three common gynecological tumors. Therefore, the MDASI-PeriOp-GYN-C should be validated in further studies enrolling patients with other gynecologic cancers and benign tumors.

In conclusion, we showed that the MDASI-PeriOp-GYN-C is a valid and reliable tool for measuring symptoms in Chinese patients undergoing surgery for gynecologic cancers. The tool could be used in clinical practice and clinical trials to instantly gather patients' health and quality of life data.

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Declarations

Ethics approval and consent to participate

The study was approved by the Ethics Committee of Sichuan Cancer Hospital (IIT2019018). All patients gave written informed consent before participation in this study. All methods were performed in accordance with the relevant guidelines and regulations (Declaration of Helsinki).

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analysed during this study are included in this published article (and its supplementary information files).

Competing interests

None of the authors have any conflicts of interest to declare.

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Authors' contributions

TZ and YYZ performed the data analyses and wrote the manuscript.

GRW, QLS and XSW contributed to the conception of the study.

CLW provided technical support to data analysis.

ZRY, JZ and MY helped in data collection.

All authors read and approved the final manuscript.

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Tables

Table 1. Demographic and disease characteristics (n=324)

Patient characteristics	n (%)
Age	
Mean±SD (years)	51.95±9.79
Ethnicity	
Han	316 (97.5)
minority	8 (2.5)
Education	
Below high school	192 (59.3)
High school	105 (32.4)
College and above	27 (8.3)
Marital status	
Married/domestic partner	301 (92.9)
Single/separated/divorced/widow	23 (7.1)
Employment	
Employed	114 (35.2)
Retired	72 (22.2)
Others	138 (42.6)
Chronic disease	
Yes	31 (9.6)
No	293 (90.4)
Cancer diagnosis	
Ovarian	101 (31.2)
Endometrial	74 (22.8)
Cervical	149 (46.0)
Tumor metastasis	
Yes	17 (5.8)
No	307 (94.2)
Prior treatment	
Yes	114 (35.2)
No	210 (64.8)
Type of surgery	
Open	232 (71.4)
MIS	92 (28.6)

ECOG PS	
0–1	301 (92.9)
2–3	23 (7.1)

Abbreviations: SD, standard deviation; MIS, minimally invasive surgery; ECOG PS, Eastern Cooperative Oncology Group Performance Status.

Table 2. Internal consistency reliability for the MDASI-PeriOp-GYN-C

Item	Cronbach's α	Cronbach's α if item deleted
Symptom severity (22)	0.826	
MDASI-core items (13)	0.740	
Pain		0.816
Fatigue		0.812
Nausea		0.814
Sleeping disturbance		0.824
Distress		0.812
Shortness of breath		0.818
Memory		0.826
Poor appetite		0.806
Drowsiness		0.829
Dry mouth		0.824
Sadness		0.814
Vomiting		0.823
Numbness/tingling		0.826
Periop-GYN items (9)	0.821	
Bloating		0.810
Abdominal cramping		0.828
Constipation		0.823
Diarrhea		0.826
Dizziness		0.829
Grogginess/confusion		0.825
Urinary urgency		0.811
Inability to urinate/difficulty urinating		0.821
Hot flashes		0.824
Interference (6)	0.735	
Activity		0.824
Mood		0.809
Work		0.817
Relations		0.826
Walking		0.827
Enjoyment of life		0.825

Abbreviations: MDASI-PeriOp-GYN-C, Chinese version of the MD Anderson Symptom Inventory for measuring perioperative symptom burden in patients with gynecologic cancer.

Table 3. Correlations between the MDASI-PeriOp-GYN-C and the EORTC QLQ- OV58-C

EORTC QLQ-OV58-C	MDASI-PeriOp-GYN-C			
	Symptom severity	MDASI-core	PeriOp-GYN	Interference
Symptom scale (41)	0.871 [1]			
Symptom scale of QLQ-C30 (13)		0.795 [1]		
Symptom scale of QLQ-OV28 (28)			0.750 [1]	
Functioning scale (5)				-0.608 [1]

Abbreviations: MDASI-PeriOp-GYN-C, Chinese version of the MD Anderson Symptom Inventory for measuring perioperative symptom burden in patients with gynecologic cancer; EORTC QLQ-OV58, European Organization for Research and Treatment of Cancer Quality of Life Questionnaire EORTC QLQ-C30 along with EORTC QLQ-OV28.

[1] Significant at $P<0.001$.

Table 4. Known-group validity of the MDASI-PeriOp-GYN-C

Variable		n	Mean	SD	*t*	*P*
Comparison by time						
Symptom severity	Preoperative	324	20.92	13.12	−63.65	<0.001
	Postoperative day 1	324	62.61	12.29		
MDASI-core	Preoperative	324	15.99	9.53	−52.20	<0.001
	Postoperative day 1	324	43.10	9.63		
Periop-GYN	Preoperative	324	4.93	4.86	−45.44	<0.001
	Postoperative day 1	324	19.52	5.04		
Interference	Preoperative	324	1.17	2.26	−163.52	<0.001
	Postoperative day 1	324	25.24	2.87		
Comparison by surgery type (postoperative day 1)						
Symptom severity	Open	232	66.36	10.71	−9.94	<0.001
	MIS	92	53.17	10.89		
MDASI-core	Open	232	45.84	8.81	−9.11	<0.001
	MIS	92	36.18	8.83		
Periop-GYN	Open	232	20.52	4.86	−5.98	<0.001
	MIS	92	16.99	4.62		
Interference	Open	232	25.87	2.71	−6.61	<0.001
	MIS	92	23.67	2.64		
Comparison by functional status (preoperative)						
Symptom severity	0–1	301	61.93	12.34	−5.88	<0.001
	2–3	23	71.52	7.04		
MDASI-core	0–1	301	42.63	9.68	−3.19	0.002
	2–3	23	49.17	6.47		
Periop-GYN	0–1	301	19.30	5.09	−2.82	0.005
	2–3	23	22.35	3.2		
Interference	0–1	301	25.11	2.890	−4.45	<0.001
	2–3	23	26.96	1.821		

Abbreviations: SD, standard deviation; MDASI-PeriOp-GYN-C, Chinese version of the MD Anderson Symptom Inventory for measuring perioperative symptom burden in patients with gynecologic cancer; MIS, minimally invasive surgery.

Table 5. Percentage and means of the MDASI-PeriOp-GYN-C scores according to time of survey

Item	Group 1: Pre-operation	Group 2: Postoperative day 1	Group 3: Postoperative day 5	Group 4: Postoperative day 7	*P*: All group comparison	*P:* Group 2 vs. 3 vs. 4
	Mean±SD	Mean±SD	Mean±SD	Mean±SD		
Symptom severity	20.97±13.15	62.62±12.29	22.67±10.37	20.77±8.07	<0.001	<0.001
MDASI-core items (13)	16.03±9.55	43.11±9.65	16.02±6.99	14.85±6.50	<0.001	<0.001
Pain	0.95±1.24	4.11±1.46	2.87±0.78	2.24±0.96		
Fatigue	3.13±2.13	8.26±1.34	4.26±1.08	4.10±1.10		
Nausea	0.68±1.52	1.02±1.37	0.13±0.65	0.12±0.51		
Sleeping disturbance	3.78±2.03	5.39±3.14	2.35±1.96	2.50±1.88		
Distress	1.71±1.66	0.85±1.35	0.80±1.17	0.77±1.05		
Shortness of breath	0.66±1.25	1.28±1.54	0.17±0.66	0.14±0.57		
Memory	0.37±0.84	0.08±0.60	0.03±0.36	0.06±0.34		
Poor appetite	2.32±2.48	6.90±2.91	3.11±2.26	3.04±2.21		
Drowsiness	0.43±1.02	7.51±1.76	0.68±1.09	0.56±0.97		
Dry mouth	0.30±0.73	5.79±1.86	0.27±0.62	0.28±0.57		
Sadness	1.09±1.53	0.45±0.93	0.67±1.14	0.60±1.10		
Vomiting	0.14±0.64	0.08±0.53	0.06±0.57	0.02±0.14		
Numbness/tingling	0.48±0.95	1.38±1.31	0.63±0.93	0.56±0.85		
Periop-GYN items (9)	4.93±4.88	19.51±5.03	6.65±4.97	5.78±2.85	<0.001	<0.001
Bloating	1.51±1.93	3.44±2.17	2.78±1.69	2.58±1.02		
Abdominal cramping	0.09±0.45	0.48±0.99	0.21±1.07	0.09±0.62		
Constipation	0.58±1.22	0.04±0.23	0.32±1.27	0.12±0.50		
Diarrhea	0.12±0.62	0.44±1.04	0.10±0.63	0.08±0.52		
Dizziness	0.70±1.21	3.17±1.60	0.99±1.26	0.78±0.09		
Grogginess/confusion	0.51±1.04	7.43±1.60	0.92±1.24	0.76±1.13		
Urinary urgency	0.96±1.54	0.06±0.42	0.07±0.45	0.44±0.94		
Inability to urinate	0.23±0.91	0.13±0.72	0.10±0.63	0.04±0.35		
Hot flashes	0.24±0.86	4.33±2.00	1.16±1.62	0.91±1.43		
Interference	1.24±2.44	25.48±3.59	18.02±2.79	11.80±3.69	<0.001	<0.001
Activity	0.09±0.42	7.75±1.30	4.45±1.23	4.09±1.66		
Mood	0.75±1.35	0.45±0.96	0.26±0.72	0.31±0.74		
Work	0.28±0.75	9.99±0.14	9.90±0.52	4.39±1.95		

Relations	0.06±0.36	0.28±1.53	0.08±0.41	0.03±0.24
Walking	0.01±0.08	6.86±1.57	3.31±1.19	2.96±1.18
Enjoyment of life	0.07±0.33	0.15±1.30	0.02±0.18	0.03±0.25

Abbreviations: SD, standard deviation; MDASI-PeriOp-GYN-C, Chinese version of the MD Anderson Symptom Inventory for measuring perioperative symptom burden in patients with gynecologic cancer.

Figures

中文版安德森症状评估量表-妇科恶性肿瘤围术期（MDASI-PeriOp-GYN）

第一部分：您的症状有多严重？

癌症患者常有疾病本身或治疗相关的各种症状。我们想知道您在 ***过去的 24 小时中*** 下列症状的严重程度。请将下列每一项从 0（无症状）至 10（能想象的最严重程度）之间 ***选择一数字*** 以表示症状的严重度。

	无症状										能想象的最严重程度
	0	1	2	3	4	5	6	7	8	9	10
14 您腹胀/腹部紧绷感最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
15 您腹部绞痛最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
16 您便秘最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
17 您腹泻最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
18 您头晕最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
19 您感觉昏昏沉沉/迷迷糊糊最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
20 您尿急最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
21 您排尿不能/困难最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10
22 您潮热最严重的程度为？	0	1	2	3	4	5	6	7	8	9	10

Figure 1

Figure 1 caption not available with this version.

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