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GYNECOLOGY

A consensus-based core feature set for surgical complexity at laparoscopic hysterectomy

Mathew Leonardi, MD; Kristy P. Robledo, MBiostat, PhD; Sanne J. Gordijn, MD, PhD; George Condous, MBBS, MD

BACKGROUND: There are no current standardized and accepted methods to characterize the surgical complexity of a laparoscopic hysterectomy. This leads to challenges when trying to understand the relationship between the patient and the surgical features and outcomes. The development of core feature sets for laparoscopic hysterectomy studies would enable future trials to measure the similar meaningful variables that can contribute to surgical complexity and outcomes.

OBJECTIVE: The purpose of this study was to develop a core feature set for the surgical complexity of a laparoscopic hysterectomy.

STUDY DESIGN: This was an international Delphi consensus study. A comprehensive literature review was conducted to identify the features that were reported in studies on laparoscopic hysterectomy complexity. All the features were presented for evaluation and prioritization to key experts in 3 rounds of online surveys. A priori consensus criteria were used to reach agreement on the final outcomes for inclusion in the core feature set.

RESULTS: Experts represented North America, South America, Europe, Africa, Asia, and Oceania. Most of them had fellowship training in minimally invasive gynecologic surgery. Sixty-four potential features were entered into round 1. Experts reached a consensus on 7 features to be included in the core feature set. These features were grouped under the following domains: 1) patient features, 2) uterine features, and 3) nonuterine pelvic features. The patient features include obesity and other nonobesity comorbidities that alter or limit the ability of a surgeon to perform the basic or routine steps in a laparoscopic hysterectomy. The uterine features include the size and presence of fibroids. The nonuterine pelvic features include endometriosis, ovarian cysts, and adhesions (bladder-to-uterus, rectouterine pouch, and other adhesions).

CONCLUSION: Using robust consensus science methods, an international consortium of experts has developed a core feature set that should be assessed and reported in all future studies that aim to assess the relationship between the patient features and surgical outcomes of laparoscopic hysterectomy.

Key words: complexity, core feature, Delphi, laparoscopic hysterectomy, outcomes, trial

Introduction

The epitome of gynecologic surgery is a hysterectomy, with multiple operative techniques, including vaginal, abdominal, laparoscopic-assisted vaginal, laparoscopic, and robotic. Minimally invasive techniques have become more popular for reasons such as a reduced hospital stay, reduced postoperative pain, and rapid return to normal activities.[1] A study in the United States showed the rates of laparoscopic hysterectomy (LH) between 2007 and 2010 increasing from 24.8% to 40%.[2]

There is increasing research on standardizing the reporting of the core outcomes and baseline characteristics in obstetrics and gynecology.[3] There are clearly defined minimum sets of outcomes and baseline characteristics that should be measured in a standardized manner and reported consistently.[4] A core outcome set (COS) for hysterectomy is underway.[5] In addition to a COS, there is a need to report exposure variables that may impact outcomes in a standardized fashion.

Broadly, the concept of identifying the exposure variables for surgical complications after hysterectomy is a popular area of research,[6–8] though it is usually limited to the retrospective analysis of data not necessarily collected intentionally for this purpose. Driessen et al have begun objectively studying what patient features affect the surgical outcomes after LH,[9,10] developing a dynamic quality assessment tool for outcomes.[10] The focus on patient features as an exposure variable is vital, as some may directly correlate to the outcomes. However, most patient features indirectly contribute to the outcomes via their impact on surgical complexity. The impact of some surgical features such as uterine size[8] and the presence of endometriosis[11] may be researched, but otherwise, there is a scarcity of what contributes to the spectrum of the complexity of an LH and how this complexity influences the outcomes. Currently, no standardized method exists to summarize the complexity of an LH.

The development of a core feature set (CFS) that should be reported in any prospective clinical research study on LH would enhance the consistency of the study design, independent of the primary hypothesis that is evaluated. This approach would enable future studies to measure similar meaningful features and ensure that findings from different studies can be compared and combined in individual patient-data meta-analyses and allow structured datasets to be merged. For practical purposes, it would be good to integrate these results in the local surgery protocols to allow future retrospective studies.

Accordingly, we aimed to develop consensus among international stakeholders on the CFS that should be used for research on the LH surgical complexity of an LH.

EDITORS' CHOICE

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AJOG at a Glance

Why was this study conducted?

The systematic evaluation of evidence from studies on laparoscopic hysterectomy surgical outcomes and complications is limited because of variation in the features that are assessed and reported. The development and implementation of a core feature set mimics the goals of the core outcome sets are standardization to improve clinical studies, minimize research waste and reporting bias, allow standardized data synthesis, and prepare evidence in a useful manner for policy and practice.

Key findings

We identified 7 features that are grouped under 3 domains (2 comorbidities 2 uterine features, and 5 nonuterine pathologies) that should be measured and reported in all the future studies on laparoscopic hysterectomy surgical complexity.

What does this add to what is known?

This core feature set for laparoscopic hysterectomy surgical complexity will enable future studies to measure the similar meaningful features and ensure that findings from different studies can be compared and combined.

Materials and Methods

The design of the study protocol was guided by the Core Outcome Set—Standards for Development.[12] We report the findings in accordance with the Core Outcome Set—Standards for Reporting Statement [13] and guidance from the Core Outcome Measures in Effectiveness Trials (COMET) Initiative.[4]

Design

The LH surgical complexity CFS was developed and confirmed in an electronic, 3-stage modified Delphi process. The study was completed using SurveyMonkey (San Mateo, CA). During the study design, a pilot administration was completed to ensure comprehensibility. Ethics approval for this study was obtained from the Nepean Blue Mountains Local Health District Human Research Ethics Committee (approval number 2018/ETH00590). Completion of the round 1 survey conveyed informed consent as outlined in the participant information sheet.

Participants

Eligible experts were identified on the basis of prespecified criteria, including any or all of the following: publication record in the field of gynecologic laparoscopy (no minimum number of publications was necessary, as quantity does not necessarily equate to expertise); being leaders in laparoscopic surgery according to peers (eg, as demonstrated by receiving invitations to speak at conferences); having an active involvement in advanced laparoscopic surgery training (eg, as fellowship directors or supervisors in advanced laparoscopic surgery fellowships); being identified as key opinion leaders among national or international organizations (eg, as demonstrated by holding positions on boards of organizations). Only experts for whom a valid email address was available were considered for participation. The list of identified experts represented all inhabited continents. The experts were given a chance to maintain anonymity if desired.

Delphi study

In the absence of precise analytical techniques to achieve the study aim and precedent literature,[14,15] expert consensus via an electronic, 3-round, modified Delphi approach was deemed to be a suitable methodology. The Delphi technique has been deemed to be an appropriate technique by the COMET Initiative.[4]

The Delphi process aims for the convergence of opinions, resulting in the consensus of participants by multiple rounds, wherein the statements are weighed, summarized, and fed back at the group level (the individual answers are anonymous).[16] The method offers reliability and generalizability of outcomes, ensured through iteration of rounds for data collection and analysis and guided by the principles of democratic participation and anonymity.[16]

Generally, the original Delphi method requires experts to suggest round 1 survey items in an open-ended fashion. However, we modified this approach by asking experts specific questions developed by the study team using current literature, local expertise in LH, and various surgical guidelines, including those used for surgical training[17,18] in gynecology and classification indices used by other specialties.[19,20]

In round 1 (Appendix 1), all the participants were asked to indicate their level of agreement on a 7-point Likert scale, anchored between 1 (completely disagree) and 7 (completely agree) for the patient and surgical factors that were hypothesized by the study team. A 7-point Likert scale (rather than a classic 5-point Likert scale) was chosen to distinguish subtle differences in whether the factors contribute to complexity. For each patient and surgical feature, the experts were allowed to provide comments regarding its impact on the surgical complexity of LH. For each patient and surgical feature, the experts were also allowed to evaluate the manner of the subdivision of the feature quantitatively and qualitatively (eg, age was divided by decade from 20—60 years of age and then all those who were ≥61 years were grouped). We inquired whether any additional patient or surgical features should be considered as factors in surgical complexity. We also provided experts with an opportunity to give feedback on the formulation of questions to optimize internal validity.

After round 1 had concluded, the scores for each feature were aggregated. The predefined cutoff for inclusion or reconsideration in the next round was adapted from Williamson et al.[4] The features that were planned for inclusion into the final round of the Delphi process required a median Likert score of 5 (equivalent to "agree") and a proportion of experts above 90% that selected a Likert score of 5 to 7. Features that were planned for re-evaluation in round 2 required a median Likert score of 5 and a proportion of experts between 60% and 90% that selected a Likert score of 5 to 7 and not more than 15% of experts selecting a Likert score of 1 to 3. Features that had a median Likert score of <5, or had >15% of experts selecting a Likert score of 1 to 3 were not considered for the next round. The qualitative responses were reviewed to consider adding additional features that had not been present in round 1. When a suggestion was proposed by at least 2 individual experts, the study authors incorporated the concept in the next round. In some cases, the features that were intended to be included or excluded on the basis of a priori criteria following round 1 were modified and re-evaluated on the basis of the same qualitative feedback of at least 2 experts.

In round 2 (Appendix 2), the results of round 1 were presented to the experts who responded to round 1. When necessary, supplementary information was provided to experts to understand how the qualitative responses evolved the concepts in round 1 to become the questions posed in round 2. In some cases, the experts were simply asked to agree or disagree with a proposed change. For this type of question, a minimum of 70% of experts needed to agree to be considered consensus. Otherwise, the same Likert scale and a priori criteria were utilized throughout round 2.

In the third round (Appendix 3), the results of round 2 were presented to the experts in the same manner as in round 2. Only those who completed round 2 were sent round 3. The same cutoff scores were used to determine the eligibility for inclusion. Round 3 fulfilled 2 purposes: 1) to clarify the outstanding concepts that remained unclear from round 2, and 2) to determine the final list of core features that determine complexity at LH. When necessary, the 7-point Likert scale was used. A simple agree or disagree response from experts was used to develop the final list of included and excluded core features. As above, a threshold of 70% agreement was used to warrant consensus. The experts were once again allowed to provide qualitative responses to use these concepts for the development of future studies relating to an LH complexity index.

Sample size

In a study using the Delphi method, the group error should decrease as the number of experts increases.[21] Ten to 15 experts have been described as a minimum number to yield sufficient results and ensure validity.[21,22] We aimed to achieve at least twice the optimal number of experts to provide increased certainty of the results. Considering the uncertainty of the response rate of round 1 and anticipated attrition from round to round, we invited 119 experts to respond to round 1.

Statistical analysis

The aggregated data were stored in Microsoft Excel for Mac (V16.16.16; Microsoft Corporation, Santa Rosa, CA). Analyses were performed using IBM SPSS Statistics, version 25.0.0.2 (SPSS Inc, Chicago, IL) or R.

Results

Of 119 experts from 39 countries across North America, South America, Europe, Africa, Asia, and Oceania were invited to participate in the modified Delphi process via email (Appendix 4). Round 1 was completed by 61 experts (51%), and all regions were represented. The names of experts who responded to round 1 and provided their consent to include their name in the final publication can be found in the Acknowledgments. Most of them had either formal or informal fellowship training in minimally invasive gynecologic surgery (MIGS) (Supplemental Table 1). The respondents had a median practice length of 20 years (range, 3–43). The median estimated number of LHs performed each year was 60 (range, 10–300). When quantifying the proportion of LHs that experts subjectively consider difficult or very difficult, the median response was 50% (range, 4–98).

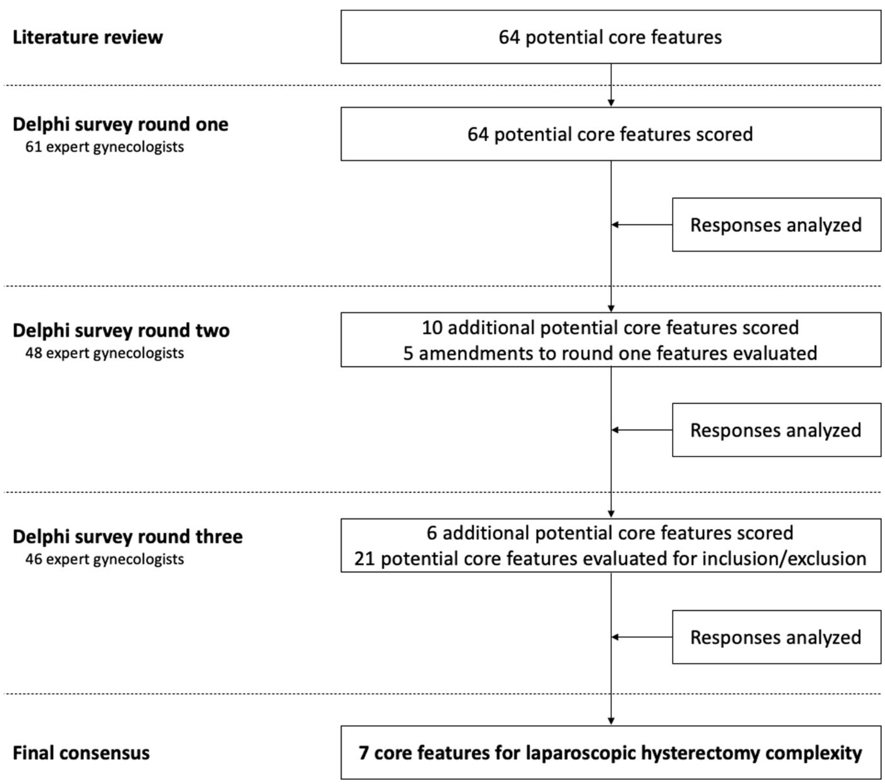
Round 2 was completed by 48 of the 61 experts who responded to round 1 (79%). Round 3, which yielded the final consensus list of features, was completed by 46 of the 48 experts who responded to round 2 (96%). The attrition rate was 25% from rounds 1 to 3. The study flowchart is outlined in the Figure.

Sixty-four potential features were presented for inclusion in the list in round 1 (Appendix 1). Of these, 19 had a median Likert score of at least 5 and a proportion of experts above 90% that selected a Likert score of 5 to 7. Of the features not included in round 2, 22 had a median score of ≤4; 5 had a median score of 5, but >15% of experts selected a Likert score of 1 to 3. The remainder had a median Likert score of at least 5 and a proportion of experts between 60% and 90% that selected a Likert score of 5 to 7.

On the basis of the qualitative feedback, it was apparent that certain features proposed in round 1 were predictive of surgical complexity (eg, a history of a cesarean delivery) rather than being an objective feature of surgical complexity (eg, bladder-to-uterus adhesions). Similarly, some proposed features were the consequence of an objective feature of surgical complexity (eg, the need to dissect rectouterine pouch obliteration) rather than being an objective feature of surgical complexity (eg, rectouterine pouch obliteration).

In round 2 (Appendix 2), 2 broad categories of features were added (adhesions and medical comorbidities using the American Society of Anesthesiologists [ASA] physical status classification system). Potential modifications to previous features were evaluated, including recording the uterine size in grams rather than gestational age, specifying the endometriosis stages (dichotomized into the American Society of Reproductive Medicine [ASRM] revised classification system [r-ASRM] stages 1–2 and 3–4), and considering fibroids for their impact on the basic or routine steps of an LH rather than presence, number, or size, all of which contribute to the uterine size and may duplicate contribution

FIGURE
Study flowchart



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to complexity if both are considered independently.

All the 4 questions in round 2 that were "agree vs disagree" achieved more than 70% agreement among experts. On the basis of qualitative feedback, the method of quantifying the uterine size could be either in gestational age on the basis of physical examination or weight that is based on a calculation using imaging measurements. For the additional questions that used the Likert scale, 0 features had a median Likert score of at least 5 and a proportion of experts >90% that selected a Likert score of 5 to 7. Two features had a median score of ≤4 and 0 had a median score of 5, but more than 15% of experts selected a Likert score of 1 to 3. However, 2 features (ASA class 4 and ASA class 5) had a high proportion of experts answering "not applicable." The remainder (6) had a median Likert score of at least 5 and a proportion of experts between 60% to 90% that selected a Likert score of 5 to 7.

In round 3 (Appendix 3), 6 additional Likert scale questions were posed to clarify concepts following round 2. These were focused on establishing a more appropriate manner to contextualize medical comorbidities into objective surgical complexity (and not complexity associated with the case overall including preoperative and postoperative issues), body mass index (BMI) categorization, and differentiating the various types of ovarian cysts and their impact on an LH. In the same round, the final consensus on a list of core features was assessed. This was divided into features that had been ranked highly and ranked lowly (that is, median score of ≤4 or median score of 5, but >15% of experts selected a Likert score of 1 to 3).

Ultimately, the experts reached a consensus on the features that should be captured when assessing the surgical complexity in an LH (Table). These can be grouped into the following 3 domains: 1) patient features, 2) uterine features, and 3) nonuterine pelvic features. The patient features include obesity and nonobesity comorbidity; the uterine features include uterine size and uterine fibroids; and the nonuterine pelvic features include endometriosis, rectouterine pouch obliteration, bladder-to-uterus adhesions, nonendometriosis ovarian cysts, and adhesions (not including rectouterine pouch obliteration or bladder-to-uterus adhesions).

Because of the immense spectrum of surgical findings and challenges in identifying a threshold at which point a feature contributes to complexity, a common principle was carried throughout the core features. In some cases, we applied a qualitative descriptor—the feature must "alter or limit the ability of a surgeon to perform the basic/routine steps in an LH." For example, medical comorbidities can vary greatly and may or may not have an influence on surgical complexity. Although hypothyroidism may not affect surgical complexity, a coagulopathy might, because it can necessitate additional surgical steps that would otherwise not be considered (eg, uterine artery ligation at origin). Similarly, anterior wall fibroids were not generally considered relevant to surgical complexity, but if an anterior wall fibroid "alters or limits the ability of a surgeon to perform the basic/routine steps in an LH," then it should be considered as a feature that contributes to complexity.

Discussion

Principal findings

Using well-established methods to develop consensus, international experts in laparoscopic gynecologic surgery have developed a CFS for use in studies on LH surgical complexity and surgical outcomes (Table). Although all the features identified in round 3 reached a consensus of over 70% of experts, there were variations in how strongly the experts agreed that a feature contributes to complexity (Supplemental Table 2). The principal study aim was to determine a CFS, which was achieved. The domains

TABLE
A consensus-based core feature set for surgical complexity at laparoscopic hysterectomy

Patient features
- Obesity
- Obese class I—II (30—39.9 kg/m^2)
- Obese class $\geq$III ($\geq$40.0 kg/m^2)
- Nonobesity comorbidity/ies that alter(s) or limit(s) the ability of a surgeon to perform the basic or routine steps in a laparoscopic hysterectomy

Uterine features
- Uterine size
- Equivalence to 12—16 weeks/300—600 kg
- Equivalent to 16—20 weeks/600—900 kg
- Equivalent to >20 weeks/>900 kg
- Uterine fibroids
- By location (>1 can apply); must alter or limit the ability of a surgeon to perform the basic or routine steps in a laparoscopic hysterectomy
- Cervical
- Lower segment
- Broad ligament
- Posterior
- Other location fibroid(s) that alter(s) or limit(s) the ability of a surgeon to perform the basic or routine steps in a laparoscopic hysterectomy

Nonuterine pelvic features
- Nonendometriosis ovarian cyst(s) that alter(s) or limit(s) the ability of a surgeon to perform the basic or routine steps in a laparoscopic hysterectomy
- Endometriosis classified as ASRM stages III or IV or involving deep endometriosis that is not captured by the ASRM system
- Rectouterine pouch obliteration
- Bladder-uterus adhesions
- Adhesions (not including endometriosis, bladder-to-uterus, or rectouterine pouch obliteration) that (only 1 can apply),
  - Require 45 mins or more of adhesiolysis
  - Pose a significant risk of morbidity (as determined by the surgeon) during adhesiolysis
  - Require the assistance of a nongynaecological surgeon to perform adhesiolysis

ASRM, American Society of Reproductive Medicine.

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that contribute to surgical complexity in an LH included the patient features (obesity and nonobesity comorbidities), uterine features (size and fibroids), and nonuterine pelvic features.

Results in the context of what is known

Driessen et al have published on the importance of developing tools to assess and improve the quality of care for patients undergoing LH[10] and on case-mix variables (patient features) and their association with surgical outcomes.[9] They identified 85 studies that reported an association between the specific patient characteristics and surgical outcomes. Many of the patient features that were identified by Driessen et al align with the consensus of the core features that we have identified in our study, including their 2 most relevant case-mix variables: uterine weight and BMI. The authors were limited in their ability to draw meaningful relationships between these other features and the surgical outcomes because of the broad variance of the severity of individual features (eg, adhesions) in the studies they identified. Our study greatly differs from that of Driessen et al[9], because it focused on the objective surgical complexity rather than surgical outcomes. The current literature relies on relationships drawn between patient features and the surgical outcomes without adequate and objective individual case complexity contextualization.

Research implications

Our study may permit overcoming a major flaw in the published literature, in that it encourages the use of the consensus-generated core features in future studies; this yields more refined analyses of how patient and surgical features influence surgical outcomes. This CFS can be used to standardize surgical data collection and nomenclature across future studies, evaluating the correlation of features to surgical events (eg, surgical time, blood loss, intraoperative complications, conversion to laparotomy) and surgical outcomes (eg, time to recovery, postoperative complications). Ultimately, this may allow the application of quality indicators in LHs, which are also currently being studied using a novel gynecology surgical scorecard.[23]

Clinical implications

Beyond using this list of core features in future studies to predict surgical outcomes, we must consider how we can reliably predict these features. For BMI and comorbidities, a clinical history and examination should suffice. However, the other features are tangible anatomic features. Imaging techniques can serve to identify and characterize the features. Uterine size and/or weight has been studied using ultrasound and physical examination,[24] and it is, of course, easily determined at surgery using a scale.

Uterine fibroids are visible on ultrasound or magnetic resonance imaging, but advancement in mapping and measuring the fibroids remains necessary if surgeons intend to use this information to predict complexity because of fibroids.[25] Nonuterine pelvic features are becoming increasingly easier to appreciate preoperatively; these include ovarian masses,[26,27] which have long been identifiable on imaging. However, determining when an ovarian cyst will alter or limit the ability of a surgeon to perform the basic or routine steps in an LH needs to be evaluated. Ovarian mass size, etiology, and associated adhesions may be all be factors that require further study. Reid et al have published on the "sliding sign," which is a dynamic ultrasound tool that assesses for rectouterine pouch obliteration;[28] it does contribute greatly to the ASRM endometriosis stage,[29] but it is in and of itself, a feature that contributes to complexity according to the experts involved in our study. Similarly, deep endometriosis and ASRM stages III and IV are predictable using ultrasound[30,31] and magnetic resonance imaging.[32] Finally, adhesions remain evasive on ultrasound, but there is early literature initiating the path to diagnose these noninvasively.[33–36] A better understanding of how surgical history yields intraabdominal adhesions may contribute to our ability to predict and prepare for this feature that contributes to surgical complexity.

Finally, there may be clinical value in the objective description of LH surgical complexity using the CFS for reasons including surgeon remuneration, allocation of educational opportunities,[15] and standardization of nomenclature between healthcare providers. These potential benefits warrant independent study.

Strengths and limitations

An electronic Delphi study is more than merely a form of data collection. Its iterative feedback method develops an insight from experts. Its electronic nature allowed for an international audience and a critical analysis of each round's results, compared with an in-person Delphi method, which would move from 1 round to the next more swiftly. The critical analyses done between each round in this study were relayed back to the experts, giving them a broad understanding of the concepts as they developed during the Delphi process.

The study is limited in several regards. Firstly, the number of experts who were approached and those who responded represent a very small percentage of the experts in MIGS internationally. There was a moderate response rate to round 1 and some attrition through to round 3, imparting some responder bias. In contrast, the response rate was above average for a survey involving physicians, and the absolute number of respondents far exceeded the minimum of 10 to 15 suggested in Delphi methodology.[21,22] Moreover, those who are recognized as experts may not represent the broad views and skills of gynecologists who perform LHs internationally. Despite an attempt to choose experts to invite objectively, there is inevitably some degree of subjectivity, imparting bias. In addition, those who have academic responsibilities, which is the case for many of the experts included, may spend less time operating than those with a higher volume of surgical experience. Despite our attempt to identify purely objective core features, subjectivity remains and warrants ongoing evaluation, in some cases. This pertains to those features that rely on the caveat that the feature must "alter or limit the ability of a surgeon to perform the basic/routine steps in an LH." Different surgeons may have unique views on what their routine LH involves, though we define the basic or routine LH as that described in TeLinde's Operative Gynecology,[37] requiring the minimum number of steps to complete it successfully. Our definition of a basic or routine LH was not clarified to the experts, but in future validation studies of this CFS, the specific definition of a basic or routine LH will be necessary to ensure the standardization of this nomenclature.

Conclusion

This study has produced an internationally-developed CFS that can be used in studies on LH and surgical outcomes, ensuring that the exposure variables, which are the patient and the surgical features, are standardized in their assessment and reporting. This list should be implemented in future studies that aim to assess the relationship between the patient and the surgical features and outcomes. To construct future retrospective studies, it is advised to implement the CFS in local surgery protocols for LH. ■

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SUPPLEMENTAL TABLE 1
Distribution of advanced training of round 1 experts

Training	n	%
Formal MIGS	25	41.0
Formal REI	6	9.8
Informal MIGS	28	45.9
Informal REI	8	13.1
MIGS Course	10	16.4
None	5	8.2
Other	3	4.9

A total of 59 respondents were considered. Respondents may have had >1 type of training, and as such, percentages do not add to 100%. Data were missing for 2 respondents.

MIGS, minimally invasive gynecologic surgery; *REI*, reproductive endocrinology and infertility.

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SUPPLEMENTAL TABLE 2

Core feature set for surgical complexity at laparoscopic hysterectomy and their associated survey scores

Core features	Median	Percentage agree, strongly agree, and completely agree
Patient features	5.0	71.7
■ Obesity	7.0	95.0
■ Obese class I—II (30—39.9 kg/m^2)	5.0	82.6
■ Obese class ≥III (≥ 40.0 kg/m^2)		
■ Nonobesity comorbidity/ies that alter(s) or limit(s) the ability of a surgeon to perform the basic or routine steps in a laparoscopic hysterectomy		
Uterine features	5.0	74.1
Uterine size	6.0	100.0
■ Equivalence to 12—16 weeks/300-600 kg	7.0	100.0
■ Equivalent to 16—20 weeks/600-900 kg	6.0	100.0
■ Equivalent to >20 weeks/>900 kg	5.0	98.2
Uterine pathology	5.0	92.9
■ By location (more than one can apply); must alter(s)	5.0	62.5
or limit(s) the ability of a surgeon to perform the basic or routine steps in a laparoscopic hysterectomy	5.0	75.8
■ Cervical		
■ Lower segment		
■ Broad ligament		
■ Posterior		
■ Other location fibroid(s) that alter(s) or limit(s) the ability of a surgeon to perform the basic/routine steps in a laparoscopic hysterectomy		
Nonuterine pelvic features	5.0	82.6
■ Nonendometriosis ovarian cyst(s) that alter(s) or	7.0	89.6
limit(s) the ability of a surgeon to perform the basic	7.0	100.0
or routine steps in a laparoscopic hysterectomy	6.0	98.3
■ Endometriosis classified as ASRM stages III or IV or	6.0	79.2
involving deep endometriosis that is not captured	6.0	89.6
by the ASRM system	6.0	85.4
■ Rectouterine pouch obliteration		
■ Bladder-uterus adhesions		
■ Adhesions (not including endometriosis, bladder-to-uterus, or rectouterine pouch obliteration) that (only one can apply),		
○ Require 45 mins or more of adhesiolysis		
○ Pose a significant risk of morbidity (as determined by surgeon) during adhesiolysis		
○ Require the assistance of a nongynaecological surgeon to perform adhesiolysis		

ASRM, American Society of Reproductive Medicine.

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