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Can We Reach a Consensus on the Appropriate Use of Before and After Photos in Breast Surgery?

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Background: Breast surgery is an area of practice where patients value before and after photographs (BAPs). Consensus is needed to develop guidelines to address the deficit in the literature regarding appropriate use of BAPs, as these may ultimately play a significant role in the breast surgery consent process.
Methods: Expert breast reconstructive surgeons participated in a modified nominal group technique (NGT) to establish expert consensus on categories and criteria to be used when evaluating appropriate use of BAPs as part of informed consent. Endorsement rate of 75% and coefficients of variance within and between rounds were conducted to determine validity of each criteria item's rank order.
Results: Eight experts participated in the NGT in-person meeting and subsequent online survey. five of seven categories were endorsed for discussion: purpose, image type, anatomy, results, and photographic integrity. Overall consensus was obtained for six of 11 criteria. Criteria items found to have consensus were: patients considering surgery being the intended photograph audience (100% endorsement, CV1 – CV2 = 0.01), use of photographic images (75% endorsement, CV1 – CV2 = 0.04), defining the standard clinical photograph by having patients in the same body position (100% endorsement, CV1 – CV2 = 0.14), anonymizing images by removing all digital tags (88% endorsement, CV1 – CV2 = 0.03) and patient identifiers (75% endorsement, CV1 – CV2 = 0.00), not limiting the number of photograph sets needed for sufficient representation (100% endorsement, CV1 – CV2 = 0.07), and representing average outcomes (100%, CV1 – CV2 = 0.06).
Conclusions: Early use of this validated and effective technique helps identify potential consensus categories and criteria that surgeons recommend for the use of BAPs in the informed consent process. Further study is required. *(Plast Reconstr Surg Glob Open 2021;9:e3682; doi: 10.1097/GOX.0000000000003682; Published online 16 July 2021.)*

INTRODUCTION

The use of digital before and after photographs (BAPs) has helped surgeons with pre and postoperative documentation, comparison, follow-up, monitoring, education, and surgical planning.[1–5] In contemporary practice, BAPs are becoming an important component in the process of educating patients and ultimately may play a role in the patient consent process. However, there are few studies that examine how BAPs may impact the consent process. A prospective dermatologic study (n = 58) found that participants with preoperative access to a photographic booklet containing skin surgery images were more satisfied with their understanding of the procedure and their postoperative scarring.[6] Another study (n = 205) found that most patients (88%) would agree to have their photographs used for patient education purposes.[7] In a survey of aesthetic surgery patients, those participating in the breast augmentation group (n = 323) believed that photographs were the most important factor in choosing a surgeon.[8] Despite positive patient perceptions of BAPs, concerns continue

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to exist regarding medical-legal risks for plastic surgeons when using BAPs.[9] Ongoing legal and ethical concerns remain regarding the patient photographic consent process and the widespread use of third party BAPs.[10–14]

Governing bodies, including the College of Physicians and Surgeons of Ontario, and ASPS have provided limited guidance to surgeons on the use of BAPs in the patient consent process.[15,16] Furthermore, the newly proposed and drafted CPSO 2020 Advertising guidelines that address the use of BAPs do not discuss their use in the consent process.[17,18] An area of particular complexity for clinical photography is breast photography, as dissemination of these photographs can have additional social, privacy, and sexual implications for patients.[11]

The Canadian Society of Plastic Surgeons currently provides patients with artistic drawings to depict pre and postoperative results.[19] Despite the assumption that plastic surgeons are skilled artists, poorly illustrated hand-drawings can be misleading and have medical-legal implications.[20] Having an inaccurate depiction when more accurate digital comparisons are available could negatively impact patient safety in the informed consent process. Several studies have used computer morphed imaging to predict surgical outcomes and discuss the potential value of these as part of the informed consent process.[21,22] However, using these images can result in postoperative outcomes that are perceived to be worse than the morphed image.[21] We propose that related third party BAPs provide a more accurate portrayal of postoperative outcomes and can serve as an additional, more appropriate and useful tool in the informed consent process.

With currently available technology and the prevalence of social media, it would be naive to assume patients do not have access to BAPs beyond their consultation. The first result of a Google search of "plastic surgery before and after photographs" is the ASPS website.[23] ASPS and Plastic Surgery Foundations established photographic standards must be met for photographs to be uploaded to the ASPS photograph gallery.[24] However, BAP images on the ASPS website are linked to consultation information, and may serve as a form of advertising. The Canadian Medical Protection Agency has also expressed concern that online cosmetic surgery photograph galleries may be a biased sample containing the best surgical results.[25] Additionally, a study by Sanniec et al found that no ASPS and American Society for Aesthetic Plastic Surgery plastic surgeon members' websites completely adhered to the 2006 ASPS and Plastic Surgery Foundations photographic standards, and individual category adherence ranged from 39% to 87%.[26]

Studies analyzing social media content (from American Board and/or Royal College certified plastic surgeons) have found that most postings related to plastic surgery are composed of self-promotional content, and while plastic surgeons are more likely to post educational content, the majority of their postings remain self-promotional.[27,28] Montemurro et al found that almost all patients ($n = 500$) used the internet to collect information before their consultation with a plastic surgeon, with almost half using social media.[29] According to this study, surgeons felt that most patients had prior knowledge of the procedure or surgeon before consultation and believed information gathered on forums or blogs (eg, social media) by patients could be harmful.[29] The literature review further revealed that information gathered on the internet about aesthetic plastic surgery was of poor quality and could be inaccurate or misleading (34%–89%).[29] The authors also found that increasing numbers of plastic surgeons were using and engaging with social media platforms.[29] Website usage amongst Canadian plastic surgeons is comparable to their US and UK counterparts (40%–90%).[30]

Having guidance from surgeons when viewing photographs and ensuring patients are exposed to educational rather than to sensational or inaccurate content should be prioritized in the patient informed consent process. The purpose of using digital photographs remains "reproducibility through standardization."[1,31] "Reproducibility through standardization" applies to specifications for creating images (eg, camera equipment, lighting, positioning, storage, settings) and recommendations in the literature have been developed to achieve this standardization.[32,33] If there are established standards for creating these photographs, the next step should be formalizing rigorous standards for the content and use of these photographs to optimize informed consent. The evaluation process using the nominal group technique (NGT) represents one possible method to determine what constitutes an "appropriate" photograph. An NGT is a consensus-building process that brings together representative experts to establish consensus on the importance of criteria/items in a short period of time for a subject with limited background literature.[34–36]

The primary objective of this article is to experiment with a referenced process, to better define criteria that can be used to build consensus on a topic with broad interest among plastic surgeons that has little available literature. Ultimately, this method could be used to develop guidelines for informed consent using BAPs.

METHODS

Study Design and Setting

The study took place between December 3, 2019 and May 27, 2020. The in-person component of the NGT took place on December 3 from 6 to 8 pm EST in a conference room at the Hospital for Sick Children in Toronto, Ontario, Canada. Eight expert breast reconstructive surgeons (Experts: CF, KW, RS, JS, BB, GM, LK, TC), one observer (WJ), one scribe (EH), and one moderator (CV) were present. The follow-up survey was sent only to experts.

Ethics

As the study did not have any participants and the NGT included voluntary expert collaborators, ethical clearance from a local research ethics board was not warranted.

Nominal Group Technique

In-person (Round 1)

An open invitation to collaborate in the NGT was sent out to the Toronto Breast Special Interest Group, an organization of University of Toronto Plastic and

Reconstructive Surgery Faculty with specific interest in breast surgery. This group strategically includes experts from community and academic settings to ensure representation of viewpoints from a diversity of clinical practices. As smaller group sizes (eg, $n = 7$) are ideal for NGTs, the study aimed to have between 7 and 10 experts present to determine consensus.[36] Experts were provided a literature review before starting the NGT to provide a consistent baseline framework of understanding. Initial categories and criteria were preselected by NGT leaders (CV, EH, CF, RS) based on literature review, and were also distributed before the in-person NGT meeting. The room configuration was set up according to NGT standards.[36] The categories and criteria for evaluation were displayed at the front of the room to guide discussion and structure the meeting (Fig. 1). Pens and notecards were distributed to facilitate anonymous recording of responses. Consensus endorsement was sought for each category and relevant preselected criteria. Next, experts were asked to identify criterion items for each category and rank them. The ranking component consisted of the four typical phases of an NGT: Phase 1: Silent Generation, Phase 2: Round Robin, Phase 3: Clarification, and finally Phase 4: Ranking.[36] Experts were to pick up to five criterion items for each category and rank these in writing from the most important (5) to the least important (1). The moderator (CV) anonymously collected the rankings, and scores were tallied for all the ideas generated.

Questionnaire (Round 2)

Re-ranking of criterion items that did not reach consensus (ie, second round) was conducted through the secure online survey software modality REDCap. The survey questionnaire asked the same Experts to first substantiate or negate their endorsement of criteria with borderline consensus in the NGT (ie, 5/8 endorsement), followed by re-ranking of the criterion items for each endorsed category. Experts were provided a preliminary results document from the in-person NGT (first round) to inform their re-rank of criterion items. (**See appendix, Supplementary Digital Content 1,** which displays BAP results after the first round. **http://links.lww.com/PRSGO/B700**.)

Data Analysis

Before starting the NGT, the predefined threshold of approval from 75% of the experts for each category or criteria was set as the indicator of consensus. Results from the in-person NGT (first round) and online survey questionnaire (second round) were reported descriptively by category endorsement (identified by ≥ 75% agreement) and the sum of their weighted rank. Each rank number represented the weight each expert gave to an item (ie, a rank of 5 represented a weight of 5). Endorsement of criterion items was defined as 75% or more of experts ranking the item as 4 or 5 during the second round. Coefficient of variance (CV) was measured for each criterion, at each round and between

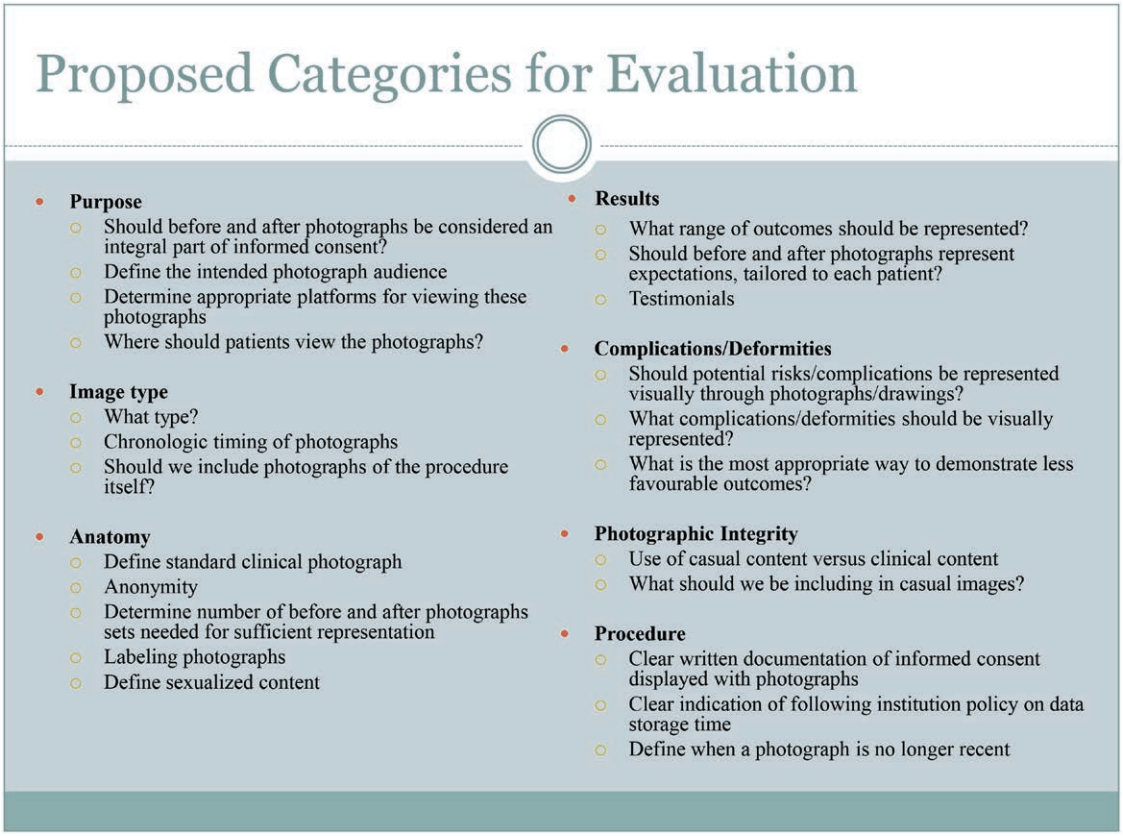

Fig. 1. Displayed categories during in-person component (first round) of NGT.

rounds, to determine the validity of the consensus. The conventionally accepted cutoff of less than 0.5 was used to determine reasonable internal agreement and more than 0.8 represented statements requiring modification and additional rounds.[37–39] If the absolute difference in CV between rounds was less than 0.2 and the CV of the second round was smaller, the consensus was considered stable in accordance with accepted standards.[37,39]

RESULTS

Eight experts participated in the NGT in-person meeting (first round) and subsequent survey questionnaire (second round) (100% response). The criteria in each category were ranked by the experts; however, ranking of all items was not required. As such, some experts ranked as few as one criterion item. Overall, fewer criterion items per round were ranked in the first round of the NGT. Categories were clearly and strongly endorsed or rejected in the first round and did not require subsequent reevaluation in the second round (Table 1). Categories endorsed for discussion included purpose, image type, anatomy, results, and photographic integrity. Categories not endorsed for discussion included complications/deformity, and procedure (see Table 1). Because the group did not endorse complications/deformity as a category, the group was asked to consider whether the NGT should discuss "What is the most appropriate way to demonstrate less favorable outcomes (eg, text, statistics, how do we do this with minimal bias/blame)?" The group did not endorse discussing this point (3/8 endorsement). With regards to the procedure category, general consensus from the group was that policies around written informed consent for photography, privacy, and confidential long-term storage of photographs were dependent on the respective clinician's individual institutional policies. The group did not endorse discussing the explanation of this point (0/8 endorsement).

Criteria suggested for each endorsed category were evaluated during the first round of the NGT (see Tables 2, 3). Endorsed criteria included BAPs and photographs of the procedure can be part of the informed consent process, and preoperative photographs should be included in image sets. Photographic integrity was an endorsed category for discussion, however the criteria "casual content can be used" was not endorsed discussion (5/8 endorsement in the first round and 1/8 endorsement in the second round). Casual content was defined as photographs of patients taken in everyday clothing, bathing suits, etc.

Table 1. Endorsement of Categories to Evaluate BAPs

Endorsed	No. of Members Endorsed	Not Endorsed	No. Members Endorsed
Purpose	6/8	Complications/ deformity	5/8
Image type	7/8	Procedure	1/8
Anatomy	7/8		
Results	7/8		
Photographic integrity	7/8		

Table 2. NGT Statements Endorsed within Categories*

Category	Statement	No. Members Endorsed
Purpose	BAPs can be part of informed consent	7/8
Image type	Preoperative photographs should be taken	8/8
Image type	Photographs of the procedure can be part of the informed consent	7/8
Anatomy	Visual representation in BAP should be anonymous	8/8
Anatomy	Photographs should be labeled	8/8

*These statements were not reendorsed in the follow-up survey, as endorsement was clear from NGT preliminary results.

Table 3. NGT Statements Not Endorsed within Categories*

Category	Statement	No. Members Endorsed
Results	Photographs should be tailored to each patient	1/8
Results	Testimonials should be used	2/8

*These statements were not reendorsed in the follow-up survey, as endorsement was clear from NGT preliminary results.

In the second round of the NGT, group members evaluated standard clinical photograph criterion items through definitive endorsement (see Tables 4, 5). Although "arms up view" was not endorsed as a criterion item for evaluating a standard clinical photograph, and was not ranked by any experts during either round of the NGT, it was mentioned by a collaborator in the section for narrative comments that "standard breast views should include arms up for completeness." The survey responses included identification of key stakeholders, such as the CPSO, by the group members. It also revealed positive feedback in terms of the experience members had in completing both rounds of the NGT. (**See appendix, Supplementary Digital Content 2**, which displays final BAP results. **http://links.lww.com/PRSGO/B701**.)

Of the criteria ranked, those that were endorsed and validated (had second round CV < 0.5, stable consensus between rounds, and endorsement) were patients considering surgery as the intended photograph audience, use

Table 4. Statements Endorsed as Criterion Items for Defining a Standard Clinical Photograph

Statement	No. Members Endorsed
Consistent lighting (pre and postoperative)	8/8
1:1 ratio	8/8
Views: AP, 2 lateral ± 2 oblique	6/8
Background	7/8
Nonaltered (no photoshop/filter)	6/8
Same body position (standardized position)	8/8
Consistent patient exposure	7/8

Table 5. Statements Not Endorsed as Criterion Items for Defining a Standard Clinical Photograph

Statement	No. Members Endorsed
Arms up view	4/8
Close-up of scars	5/8

Table 6. Final Condensed Data Set for NGT Results

Category and Related Criteria	CV1	CV2	CV1 – CV2 =	Final Endorsement by Rank (≥4)	Final Rank*	Consensus Stability†	Endorsement of Criteria after Re-rank
PURPOSE							
Define intended photograph audience							
Office patients	0.20	0.26	−0.06	0.75	4	N	Y
Patients' families	0.00	0.26	−0.26	0.125		N	N
The general public	0.61	0.56	0.04	0			
Patients considering surgery	0.11	0.10	0.01	1	5	Y	Y
General public excluding minors	0.52	0.53	−0.02	0.125			
What are appropriate platforms to use? [types, eg, online (web, social media), office photograph]							
Websites	0.16	0.17	−0.01	0.875	5	N	Y
In-office devices	0.26	0.47	−0.22	0.5		N	N
Private links sent to patients	0.38	0.35	0.03	0		Y	N
Brochures/print	0.35	0.33	0.02	0		Y	N
Social media	0.67	0.61	0.05	0.125			
Online (social media/web) everything	0.31	0.48	−0.16	0.5		N	N
Where should patients view the photographs? (eg, with physician, in office; if with clinician, then, brainstorm how to regulate)							
Anywhere	0.00	0.24	−0.24	0.875	5	N	Y
Office	0.17	0.31	−0.14	0.5		N	N
Home	0.35	0.14	0.20	0.25		N	N
Anywhere on a secure site	0.37	0.43	−0.06	0.375		N	N
IMAGE TYPE							
What type of images should be used? (eg, hand drawing, modified photographs versus thirrd party images, morphed images)							
Hand drawings	0.33	0.00	0.33	0		N	N
Photographic	0.31	0.27	0.04	0.75	5	Y	Y
Formal illustrations	0.54	0.38	0.16	0		Y	N
Videos	0.45	0.23	0.22	0.375		N	N
Any	0.35	0.35	0.00	0.375		Y	N
Simulations (3D/morphed)	0.35	0.46	−0.12	0		N	N
Peer-to-peer support (live)	0.61	0.71	−0.10	0			
Unedited photographs	0.19	0.47	-0.28	0.5		N	N
What should be included in the chronologic timing of photographs? [timing and number of follow-ups (eg, how far out postoperative, how many postoperatives)]							
2 weeks	0.39	0.00	0.39	0		N	N
6 weeks	0.37	0.42	−0.05	0.125		N	N
6 months	0.19	0.28	−0.09	0.5		N	N
1 year	0.18	0.27	−0.10	0.75	5	N	Y
3 months	Undefined	0.32	Undefined	0.375			
Intraoperative	Undefined	0.47	Undefined	0.125			
Immediate postoperative	0.50	0.84	−0.34	0.125			
ANATOMY							
Define standard clinical photograph [brainstorm which published standards to use (eg, Toronto/Kingston)]‡							
Consistent lighting (pre and postoperative)	0.43	0.20	0.23	1	4 (shared)	N	Y
1:1 ratio	0.24	0.44	−0.20	1	2	N	Y
Views: AP, 2 lateral ± 2 oblique	0.22	0.41	−0.19	0.75	3	N	Y
Background	0.50	0.41	0.09	0.875	Unranked	Y	Y
Nonaltered (no photoshop/filter)	0.35	0.43	−0.08	0.75	5	N	Y
Same body position (standardized position)	0.53	0.38	0.14	1	4 (shared)	Y	Y
Consistent patient exposure	0.28	0.84	−0.56	0.875	1		Y
Arms up view	Undefined	Undefined	Undefined	0.5			N
Close-up of scars	Undefined	Undefined	Undefined	0.625			N
What is considered anonymous? (eg removing tattoos and identifiers)							
Fuzzed out/blacked out/covered	0.27	0.34	−0.07	0.25		N	N
Erased/photoshopped out	0.25	0.37	−0.12	0.125		N	N
No patients with identifiers	0.08	0.08	0.00	0.75	4	Y	Y
All digital tags (name, location)/file name removed	0.17	0.13	0.03	0.875	5	Y	Y
Determine number of before and after photographs sets needed for sufficient representation (brainstorm number)							
No limit	0.07	0.00	0.07	1	5	Y	Y
3	0.14	0.16	−.02	0.25		N	N
10	0.25	0.15	0.10	0.375		Y	N

(*Continued*)

Table 6. (*Continued*)

Category and Related Criteria	CV1	CV2	CV1 – CV2 =	Final Endorsement by Rank (≥4)	Final Rank*	Consensus Stability†	Endorsement of Criteria after Re-rank
Labeling photographs–brainstorm what details should images include (eg measurements, proportion, identified defects)							
Age	0.67	0.43	0.23	0		N	N
Time from surgery	0.12	0.21	−0.09	0.75	5	N	Y
All procedures performed (visible in photograph)	0.40	0.28	0.13	0.625		Y	N
Any device, all device information (ie, shape/size/position of implant)	0.19	0.35	−0.16	0.125		N	N
Incision	0.35	0.59	−0.25	0.125			N
Diagnosis, previous treatment	0.25	0.62	−0.37	0.375			N
Define sexualized content							
Alternate poses from common/standard	0.08	0.37	−0.29	0.625		N	N
Clothing	0.20	0.34	−0.13	0.375		N	N
Backgrounds (beaches, bathrooms)	0.22	0.34	−0.13	0.625		N	N
Face showing	0.49	0.54	−0.05	0.125			N
Other people	0.71	0.47	0.24	0.25		N	N
Nipple	Undefined	Undefined	Undefined	0			N
RESULTS							
What range of outcomes should be represented? (eg, including reasonable expectations patients should have of before and after photographs, best outcome, middle of the road)?							
Best	0.22	0.28	−0.06	0.25		N	N
Average	0.18	0.12	0.06	1	5	Y	Y
Achievable (reproducible)	0.12	0.20	−0.08	0.75	4	N	Y

*Data only included if CV2 has reasonable internal agreement and CV values are real numbers.
†Only included if criteria endorsed.
‡Endorsement based on survey response endorsement section, not rank data.

of photographic images, defining the standard clinical photograph by having patients in the same body position, anonymizing images by removing all digital tags (name, location, file name), having no patient identifiers, having no limit for the number of BAP sets needed for sufficient representation, and representing average result outcomes (see Table 6 for final condensed data set).

DISCUSSION

In this study, eight surgeon experts in the field of plastic surgery collaborated on a modified NGT consisting of both an in-person and a survey component. Given the limited literature available, this project achieved its main objective by developing preliminary and novel research in the field regarding the appropriate use of BAPs in the patient education process, serving as a resource for future studies. Amid our current diversity of standards and definitions, the results of this study moves us forward in developing criteria to evaluate which BAPs, intended for public consumption as patient educational content, are "appropriate" in the context of breast surgery; and perhaps, ultimately in the patient informed consent process.

Although the use of BAPs for informed consent does not technically fall under the term "advertising" as outlined by the newly proposed 2020 CPSO guidelines[17] the results of our study aligned with many of those recommendations. Both our study and these guidelines suggest that BAPs can be used for educational purposes and should portray a reasonable and typically expected outcome.[17] The guidelines list the importance of de-identifying data and using photographs with consistent lighting, photographic technique, and setting[17]; terminology used as the basis for creating a level of photographic "standardization." Viewing the photographs on websites, a platform that had clear endorsement and reasonable internal agreement from the NGT results, would comply with the newly proposed guidelines so long as patients are seeking out the physician/photographs themselves and the photographs are not promoted material (eg, not paid targeting posts).

The main limitations of this study are lack of generalizability due to small sample size, variation in number of criterion items ranked between rounds, and lack of patient input. While the small size of the group is optimal for a NGT methodology, the consensus is limited in that members were from the same institution and geographic location of practice. Conducting a national Delphi study using the preliminary data collected from this study would be a potential next step to validate the findings and improve generalizability of the results. The variability between rounds in each category may be attributed to increased engagement by experts in the second round and greater clarity of the ranking system in the second round. While this study did not examine patient perspectives, the intention of our follow-up study is to include patient evaluation of criteria, to base the consensus in patient-centered care.

Using the NGT methodology we were able to identify several categories listed above with clear consensus of criterion items from surgeon experts (see Table 7), in addition to clarifying general consensus with regards to the "appropriate" use of BAPs for informed consent in breast surgery. A preliminary example of what these BAP images

Table 7. Criterion Items Found to Have Consensus (eg, Second Round CV < 0.5, Stable Consensus between Rounds, and Endorsement with ≥75% Agreement)

Category	Criteria	Endorsed Criterion	% Endorsed	CV1 – CV2
Purpose	Define intended photograph audience	Patients considering surgery	100	0.01
Image type	What type of images should be used?	Photographic	75	0.04
Anatomy	Define standard clinical photograph	Same body position (standardized position)	100	0.14
	What is considered anonymous?	All digital tags (name, location)/ file name removed	88	0.03
		No patients with identifiers	75	0.00
	Determine number of before and after photographs sets needed for sufficient representation	No limit	100	0.07
Results	What range of outcomes should be represented?	Average	100	0.06

may look like from the results of this study is included (Fig. 2). In this study the use of NGT methodology was integral in establishing consensus regarding a topic with limited literature in a short period of time with key stakeholders to guide preliminary recommendations. It also adds to the field by identifying items that future studies may focus on to establish more clear and concrete consensus. Specifically, the group chose not to endorse discussing complications/deformity as a category mainly due to the complexity of determining what and how complications/

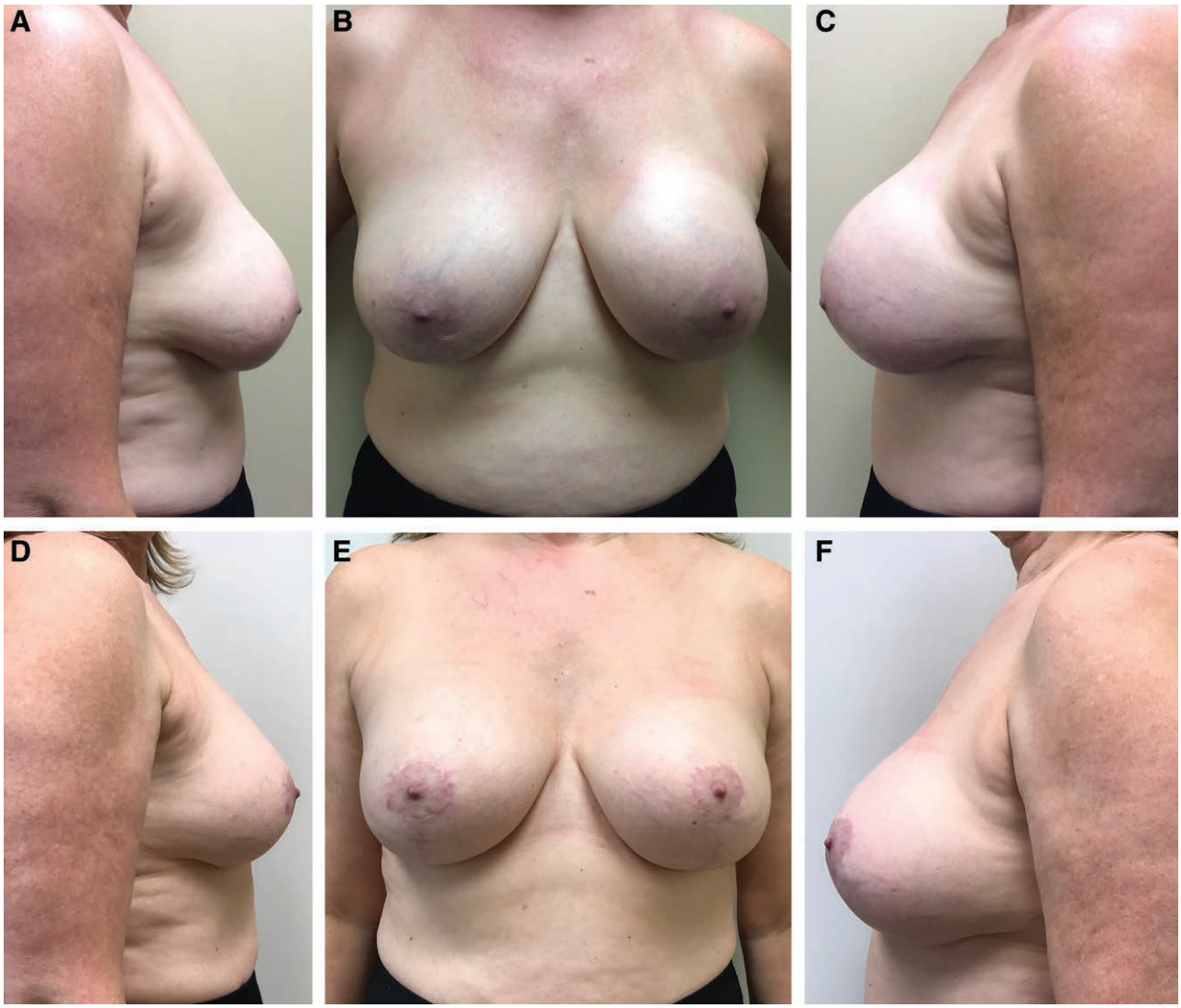

Fig. 2. Patient is shown pre procedure (A–C) and 6 months after breast procedure (D–F). Note the photographs incorporate the following criteria that have been suggested by preliminary NGT consensus: patients considering surgery are the intended photograph audience, the image is photographic, the patient is in the same body position, there are no digital tags or patient identifiers, there are no specified number of photograph sets needed for sufficient representation, and the images represent average outcomes.

deformities should be visually represented. Future studies may explore which common complications/deformities patients should be aware of and whether visual representation of these should be included upon patient request, if not part of the initial informed consent process. Additionally, multiple criterion items were identified that have potential for consensus in subsequent studies. The identification of criterion items that were endorsed with CV1–CV2 less than 0.2, but with larger variance in the second round (eg, using websites to show photographs) could imply these items need more clear explanations to prevent misinterpretation or may be too complex for consensus at this stage of analysis. Criterion items, which are endorsed with unstable consensus due to CV1–CV2 of 0.2 or more, are more difficult to achieve consensus on, and reframing the questions/statement may be necessary to achieve consensus in future studies. Lastly the outliers that may warrant complete reevaluation would be defining sexualized content, as there was no endorsement or consensus between rounds, despite covering an important subject. In such a case it may be beneficial to evaluate through definitive endorsement, not "rank endorsement," since the ranking remains split (similar to the second round evaluation of defining a standard clinical photograph).

CONCLUSIONS

Use of BAPs in the informed consent process, particularly in the context of breast surgery, remains an area that requires further evaluation and research. BAPs are being used (formally and informally) by patients considering surgery and therefore have a potentially important role in the informed consent process. Despite general "wisdom" taught in curricula, there are no current comprehensive standards/guidelines that can be used to evaluate which BAPs, intended for public consumption as patient educational content, are "appropriate." This study demonstrated the utility of NGT methodology to identify potential consensus categories and criteria that surgeons may use based on expert consensus. In the future, the NGT leaders and expert collaborators hope to further clarify consensus criteria using additional criteria and other stakeholder groups, including patients, to create more generalizable and validated results.

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