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Shoulder surgeon perspective of surgical device representatives: a multinational survey

Ryan Lohre, MD [a,*], Jon J.P. Warner, MD [b], Danny P. Goel, MD, MSc, MBA, FRCSC [a]

[a] Department of Orthopaedics, University of British Columbia, Vancouver, BC, Canada
[b] Department of Orthopaedic Surgery, Harvard Medical School, Massachusetts General Hospital, Boston Shoulder Institute, Boston, MA, USA

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Background: This study aimed to determine the working relationships of shoulder surgeons and surgical device representatives, and benefits or detractors to the operating environment.
Methods: An electronic survey was distributed to all members of the Codman Shoulder Society, an international group of fellowship-trained shoulder surgeons.
Results: The response rate was 44% (59 of 134). Mean yearly case volume was estimated as 253.3 ± 126.7, with 205.7 ± 119.6 cases having a surgical device representative present (81.2%). Among respondents, 41.1% (23 of 56) expressed wishes for the increased presence of device representatives during cases. A majority, 78.6% (44 of 56), felt that the presence of a device representative improved the efficiency of the operating room, with 7.3% (4 of 55) identifying an inability to use certain equipment without instruction. Valued qualities of device representatives were identified as attentiveness, organized, knowledgeable, honest, and available, whereas qualities not valued were pushiness/salesmanship, unpreparedness, disengagement, and disorganized. Median working time with the same representative was 5 years (0.5-20 years) with 94.4% (53 of 56) of respondents identifying desire for familiarity. A large proportion, 42.9% (24 of 56), identified changing their implants based on qualities of device representatives. Only 26.8% (15 of 56) felt that the presence of a device representative should be disclosed to a patient.
Conclusions: High-volume shoulder surgeons partially dictate the use of surgically implanted devices and make decisions based on valued or disvalued surgical device representative traits. Working relationships between the shoulder surgeon and device representatives proceed longitudinally and are significant in establishing long-term company relationships.

The orthopedic medical device industry is estimated as an annual $25-billion US global market, or $10-billion US in the United States.[2] This is not surprising given that musculoskeletal trauma alone accounts for 16% of the world's total burden of disease.[12] Growth in orthopedic surgery volume has been reflected by improvements in available technology and similarly has accounted for increasing numbers of orthopedic-related companies and involvement by representatives with surgeons and surgical teams. The pharmaceutical industry has demonstrated that marketing and physician interaction changes prescribing habits and influences formulary requests by physicians.[8] This may be due to the fact that there is a difficult distinction between evidence for use and that of promotional material.[7] Interestingly, physicians feel that their colleagues are more likely to be affected by promotional material than themselves.[7] Patients are also aware of the increasing role of the pharmaceutical industry for physicians and, though feel that it is acceptable to receive small, nonmonetary gifts or contributions by physicians, develop a trend toward overall distrust of the profession as pharmaceutical company involvement increases.[7] Representation by the surgical device industry in regular practice has steadily increased with advances in technology of implants and is actually regarded more favorably by surgeons and patients alike compared with that of the pharmaceutical industry.[1,4,6,7,9,10,11] Public registers in the United States demonstrated that approximately 50% of orthopedic surgeons have a financial relationship with the surgical device industry.[5]

In the spine surgery literature, there is a favorable view of surgeon involvement with the surgical device industry, with 80% of 610 patient respondents identifying that it was ethical, beneficial, and of no influence to their quality of health care.[6] Similarly, a systematic review attempted to ascertain patient knowledge of

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* Corresponding author: Ryan Lohre, MD, Department of Orthopaedics, University of British Columbia, 11299-2775 Laurel Street, Vancouver, BC V5Z1M9, Canada.
E-mail address: ryan.lohre@gmail.com (R. Lohre).

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financial disclosures of surgeons and patient views regarding these relationships.[7] In a Canadian subset, 32% of patients in surgical follow-up were aware of their surgeon's interactions with device manufacturers. The study demonstrated that 72% of the same cohort felt that their surgeon would make the best choice for their care regardless of financial contribution or relationship with industry, whereas only 42% wished to have verbal disclosure perioperatively of said relationships.[3] Surgeons feel that the presence of industry and representatives in the operating room (OR) benefits patient care, improves efficiency, and mitigates deficiency of less familiar operative staff. They even identify the particular subset of knowledge by surgical representatives as occasionally superior to their own regarding implant functioning and technical specifications.[11] There have, however, been identified discrepancies on quality of knowledge, judgment of surgical representatives, and forthcoming information regarding limitations and faults of products by representatives. The qualitative study examining this described the relationship as "symbiotic."[7] A survey of 43 surgical device representatives with an average of 17 years of experience identified that 88% had provided direct surgical instruction during a procedure and 21% had direct involvement with a patient. In addition, 37% identified being present in a surgery and feeling that their involvement was excessive.[1]

Although viewed generally favorably by patients, the involvement of orthopedic surgeons and surgical device representatives remains poorly characterized. Literature examining this includes the involvement of multiple surgical specialties with small focus groups and qualitative questioning. As it pertains to orthopedic surgery, the focus has predominantly been in that of spine and hip and knee reconstructive surgery. Given the increasing complexity of surgical implants and the tenuously defined role of surgical device representatives in orthopedic surgical suites, it is important to characterize the surgeon's views of their role and relationship in order to allow for transparency and reduced conflict of interest. Such an enhanced understanding is likely to inform the collaborative relationship that will improve patient care. In addition, given increasing complexity of shoulder surgical implants, characterizing shoulder surgeon perspectives would provide valuable information to improve and standardize relationships with industry partners. We hypothesize that shoulder surgeons change implant use based on interactions with surgical device representatives. Our primary objective is to characterize the relationship between surgical device representatives and shoulder surgeons from multiple centers through examining volume of interaction, types of interactions, and resulting outcomes on implant use. Secondary objectives include qualitatively defining valued and disvalued device representative traits and perceptions of patient disclosure of involvement.

Materials and methods

Study design

A questionnaire of demographic information, surgeon perception of surgical device representative involvement in the OR, valued and disvalued qualities of surgical device representatives, feelings of efficiency with the presence of surgical device representatives, and feelings of disclosure requirements to patients was prepared based on consensus of the authors. This 36-question survey used nonvalidated questions in qualifying surgeon perspectives of surgical device representative involvement in the OR, as a validated metric has not previously been produced. After institutional review board approval, the questionnaire was administered to all (134) active members of the Codman Shoulder Society (CSS), an international group of fellowship-trained shoulder surgeons. The CSS is an openly recruited group consisting of shoulder surgeons from varied backgrounds with active interest in value-driven patient care. This organization represents shoulder surgeons trained in the use of different shoulder implant systems and also with a wide geographical variation. A consent form outlining anonymity was presented to respondents along with the questionnaire. Responses were collected anonymously through Qualtrics software (Provo, UT, USA). All responses included in analysis were fully completed.

Survey design

The administered survey identified demographics through 9 questions, including practice duration, type of shoulder practice, and academic involvement. Four questions pertained to perceptions of the presence of surgical device representatives in respondents' ORs. Five questions were asked regarding perceived benefits and detriments to the presence of surgical device representatives in ORs. Seven questions were asked pertaining to qualities of surgical device representatives, asking surgeons to identify which are valued and which are disvalued. Four questions asked respondents to identify the duration of relationships and importance of longitudinal working environment with surgical device representatives. Five questions involved surgeon identification of implant choice at their institution and if any perceived qualities of surgical device representatives influence implant use. Lastly, 2 questions were asked regarding surgeon views of informing patients of the involvement of surgical device representatives in their cases. Questions were a mix of the Likert scale, open-ended written responses, and interactive graphics for estimating percentages when asked. Demographic subanalyses were performed to determine correlating factors with surgical device representative involvement in ORs.

Statistical analysis

Descriptive statistics were produced for demographic data of all respondents of mean and standard deviation, and medians and range when appropriate. Respondents were stratified into groups based on demographic variables. Specific demographic subanalyses included practice duration, yearly case volume, fellowship number, practice setting, practice type, and percentage of revision cases in practice with surgical device representative variables. These demographic variables were treated with surgical device representative questions as outcome variables, including percentage of time requesting a representative to be present, preference of increased presence, finding benefit to representative presence, ability to use equipment without a representative present, and if qualities of representatives have influenced implant choice. The χ^2 test, analysis of variance (ANOVA), ranked ANOVA, correlation, and effect size using Pearson's r and Spearman's ρ were used to determine correlation where appropriate. Results were reported with 95% confidence intervals and deemed significant at $P < .05$.

Results

Demographic results

The overall response rate was 44% (59 of 134), with 55 surgeons answering the questionnaire completely. Demographic features can be seen in Table I. Surgeons responding were predominantly male (94.6%, 53 of 56). The majority of respondents were from the United States (45), with additional contributions from Canada (4), Switzerland (2), Germany (1), France (1), Chili (1), Ireland (1), Australia (1), Portugal (1), and the British Virgin Isles (1). There was a large range in age and duration of practice. The majority of respondents completed 1 or 2 fellowships before practice, performed

Table I
Demographics of respondent shoulder surgeons

Variable	Shoulder surgeon responses
Sex	
Male:	94.6% (53/56)
Female:	5.4% (3/56)
Age (yr)	
Mean (standard deviation)	44.4 (8.01)
Median (range)	43 (33-66)
Number of fellowships completed	
1	50% (28/56)
2	41.1% (23/56)
3	8.9% (5/56)
Duration of practice (yr)	
Mean (standard deviation)	11.2 (8.07)
Median (range)	9 (1-31)
Practice type	
Open shoulder procedures	7.14% (4/56)
Arthroscopic shoulder procedures	30.36% (17/56)
Both	62.5% (35/56)
Practice modality	
Private practice	9.09% (5/56)
Private practice in group setting	27.27% (15/56)
Academic affiliated practice with training university	50.91% (28/56)
Community orthopedic surgeon, non-university training program affiliated	3.64% (2/56)
Community orthopedic surgeon with university training program affiliation	9.09% (5/56)
Size of practicing center	
Large tertiary or quaternary care facility	58.93% (33/56)
Urban surgery center	16.07% (9/56)
Community hospital	21.43% (12/56)
Rural/remote hospital	3.57% (2/56)
Percentage of practice as revision surgery (open or arthroscopic), mean (standard deviation)	21.23 (14.06)%
Yearly case volume, mean (standard deviation)	253.31 (126.73)

Table II
Perception and preference of surgical device representatives in the operating room (OR) by shoulder surgeons

Variables	Shoulder surgeon responses
Number of cases per year with a surgical device representative present, mean (standard deviation)	205.75 (119.64)
Percentage of time the surgeon had requested a surgical device representative to be present, mean (standard deviation)	52.49 (39.55)%
Percentage of time a surgical device representative is present without a request, mean (standard deviation)	57.57 (39.39)%
Preference of the increased presence of surgical device representatives in the OR	Definitely yes: 26.79% (15/56) Probably yes: 14.29% (8/56) Neutral: 28.57% (16/56) Probably not: 21.43% (12/56) Definitely not: 8.93% (5/56)
Perception of benefit in the presence of surgical device representatives in the OR	Definitely yes: 50.91% (28/56) Probably yes: 25.45% (14/56) Neutral: 18.18% (10/56) Probably not: 5.45% (3/56) Definitely not: (0/56)
Perception of improvement in efficiency with the presence of a surgical device representative	Definitely yes: 53.57% (30/56) Probably yes: 25% (14/56) Neutral: 14.29% (8/56) Probably not: 7.14% (4/56) Definitely not: (0/56)
Ability to use all surgical implantable devices without a surgical device representative present	Definitely yes: 29.09% (16/55) Probably yes: 41.82% (23/55) Neutral: 10.91% (6/55) Probably not: 10.91% (6/55) Definitely not: 7.27% (4/55)

both open and arthroscopic procedures, and worked in an academic and training institution. Only 2 respondents identified practice in a rural/remote setting.

Shoulder surgeon preferences

Table II demonstrates the perception of surgical device representative OR involvement by polled shoulder surgeons and their preferences for working with the surgical device representatives. Mean yearly case volume was estimated as 253.3 ± 126.7, with 205.7 ± 119.6 of those cases having a surgical device representative present (81.2%). Respondents noted requesting a device representative to be present for 52.5% ± 39.6% of cases, though stated that 57.8% ± 39.4% of the time, one is present without request. A total of 41.1% expressed wishes for the increased presence of device representatives during cases, whereas 28.6% were neutral and 30.4% responded against the increased presence. Benefit for the presence of device representatives was noted by 76.4% of respondents, with no respondents identifying no potential benefit. A total of 78.6% felt that the presence of a device representative improved the efficiency of the OR, with 7.3% identifying that they would definitely not be able to use certain equipment without their presence.

Shoulder surgeon values

Responses to open-ended questions of valued and disvalued qualities of working with surgical device representatives were collected. When asked what surgeons found beneficial in working with surgical device representatives, themes of assistance to unfamiliar scrub nurses, organization of equipment and proper sequence of equipment, troubleshooting malfunctioning equipment, or assistance in opening and inserting/applying new designs were identified. In selected responses, surgeons noted: "They help our staff. There are so many products and so much variation between surgeons, the reps help our staff get the correct implants, the correct instruments to insert the implants and help troubleshoot (hand the correct instruments before they are needed) things before trouble begins. This is more important for untrained staff or during after hours," or "Particularly for the arthroplasty cases, it is good for someone familiar with the equipment to keep the scrub tech in the loop on what is happening, so that I can focus on the surgery." Similarly, surgeons were asked what was detrimental in having a surgical device representative present in an OR. Themes of conflict of interest and salesmanship, pressure to use devices due to their presence, or distraction and conversing with staff were identified. Surgeons noted: "For the arthroscopic cases, the reps aren't as helpful. I don't like when they try to push their products. I tend to use some products from different vendors and each company tries to push me to use all of their products," or simply that the surgical device representatives contributed "interruptions, inadequacy, confusion, and noise." Fig. 1 depicts the most identified valued and disvalued traits by shoulder surgeons for surgical device representatives. Surgeons identified product knowledge, organization, and attentiveness to the surgical procedure as most valued, including honesty and lack of salesmanship. Surgeons noted that surgical device representatives contributed most when they were aware of all of the surgical instrument trays required for the procedure, had them ready and available, and additionally had complements of other equipment in case of implant failure or additional unexpected requirements. Communication of the availability of these implants, how to open and assemble them, and the sequence of use to the scrub nurse and nursing team were additionally captured in the questioning as important and valued. Contrarily, a lack of organization or preparedness, coupled with pushiness to use products, and distraction to the OR environment

and surgical team were identified as the most disvalued traits. Two respondents additionally noted intrusiveness of conversation in the form of unsolicited surgical technique recommendations to the surgeon as inappropriate. Table III demonstrates Likert responses of surgeons to specific working qualities of surgical device representatives, including implant specific knowledge, collegiality, personality, availability, and the importance of gifting to surgeons. A total of 87.5% of surgeons responded positively to the importance of implant specific knowledge; 82.1% of surgeons identified the importance of surgical device representative collegiality with OR staff, with only 1 surgeon (1.79%) identifying this as not important; 75% of surgeons felt that agreeableness and personality were important attributes of surgical device representatives; 41.1% of surgeons described the availability of surgical device representatives including for after-hours cases as extremely important; and 91.1% of surgeons stated that gifts were not important.

Shoulder surgeon relationships with surgical device representatives

Surgical device representatives demonstrated a median working relationship with surgeons of 5 years (0.5-20 years). This had a very strong correlation (Cohen's $f = 2.28$) with duration of practice ($P = .002$) by ranked ANOVA. Furthermore, surgeons identified working with the same surgical device representatives 83.93% of the time, and 94.64% of surgeons preferred this longitudinal relationship. Aside from the OR, office/clinic (21.4%), meetings (42.9%), industry events (19.6%), or personal outings (5.4%) were identified as other avenues of interaction by surgeons with surgical device representatives. A total of 10.71% of surgeons identified no other interaction besides the OR. This can be seen in Table III. Surgeons were subsequently asked questions of surgical implant choice, and if qualities of surgical device representatives were of influence. This can be seen in Table IV. Approximately 25% of surgeons self-identified as dictating what implants they typically use, with an additional 64.29% doing so in combination with hospital administration input. Over half (53.57%) of surgeons expressed that qualities of surgical device representatives directly influence their choice in implantable devices, and 42.85% of this group could identify an interaction with a device representative that has changed their implant choice in a single instance, or their caseload in general. Only 12.5% and 10.71% identified qualities and interactions with surgical device representatives not having any effect on their implant choices, respectively. The most noted qualities affecting choice of implants used by shoulder surgeons were attentiveness during OR, availability, knowledge of product, organization, and reliability/dependability, as shown in Fig. 1.

Surgeons identified that 35.05 (37.13%) of their patients were aware of the presence of a surgical device representative in their OR. Only 8.93% of surgeons felt that patients needed to know that a surgical device representative was present during their OR, and 21.43% felt that this disclosure was definitely not needed. This can be seen in Table IV. Duration of practice had a small effect (Pearson's $r = 0.128$) on feelings of promoting disclosure to patients of surgical device representative involvement in the OR; however, it was not significant ($P = .418$, confidence interval: −0.183 to 0.416) by regression. Other demographic variables including yearly case volume ($P = .89$), practice site ($P = .75$), practice type ($P = .74$), and number of completed fellowships ($P = .28$) were not significant to influencing thoughts on disclosure to patients.

Discussion

Our study is the first to characterize shoulder surgeon views and working relationships with surgical device representatives. Previous studies have predominantly used qualitative interviewing of orthopedic surgeons.[9,11] These studies identified an overall positive view of surgical device representative involvement in the OR. These studies previously highlighted surgeon views of improved efficiency and knowledge translation of implants to unfamiliar OR staff. Our survey of 55 shoulder surgeons demonstrated similar overall feelings of surgical device representative OR involvement. The benefit of this study over the previous ones is the defined primary and secondary outcome measures, obtained through both direct Likert questioning and qualitative and open-ended questions. Our results largely reflect sentiments of surgeons practicing in the United States; however, they do have international contribution. The majority (78.57%) of surgeons felt that surgical device representatives improved the efficiency of the OR. Open-ended questions revealed that they felt that surgical device representatives did this by imparting knowledge of opening and assembling instruments, sequence of use of instruments, and by having the appropriate and multiple other possible instrument trays available for use. The qualities aiding the improved efficiency were seen to be attentiveness, organization, knowledge, and honesty/dependability.

Our study also characterizes the influence of surgical device representative qualities on implant choice. Approximately 53.6% indicated that qualities of attentiveness, availability, knowledge, organization, and dependability directly influenced their choice of implantable device used. Given the number of competing companies in open and arthroscopic shoulder surgery, it is important to characterize the perceptions of surgeons in working relationships with these company representatives to create a beneficial working environment. Surgeons identified distraction of OR staff and surgeons directly by surgical device representatives through unnecessary conversation or frequent interjections. One surgeon noted potential influence of sterility factors with the presence of an additional person entering and exiting the OR suite while using personal devices such as smartphones. All shoulder surgeons polled demonstrated interaction with surgical device representatives. The presence of surgical device representatives appears to be pervasive regardless of elective procedure type, location or size of practice, and whether practice occurs in academic or community settings. A total of 18.18% of surgeons responding (10 of 55) indicated that they probably would not, or definitely would not be able to use some equipment without guidance by a surgical device representative. This question, and particularly noting the organization of instrument trays and proper assembly in an OR, most importantly demonstrates the previously noted "symbiosis" of the ever-increasing presence of surgical device representatives in the OR.[7,11] Given the similarity in responses of shoulder surgeons in identifying valued and disvalued qualities in working relationships with surgical device representatives, these qualities are important to characterize and refine to improve the OR working environment for patient care.

The established pervasiveness of surgical device representative involvement in shoulder surgeon elective ORs illustrates potential privacy and ethical considerations to patient care. Camp et al[3] previously demonstrated that both US and Canadian patients in hip and knee arthroplasty follow-up were not worried about financial relationships between surgeons and industry, and felt that it could benefit patients. Patients additionally acknowledged favor of oversight of industry involvement by either government or regulatory bodies.[3] The respondents, however, did not comment on direct involvement of surgical device representatives in patient care and OR settings. A previous study by Bedard et al[1] elicited that 37% of surgical device representatives polled (16 of 43) felt that they had excessive involvement in an OR. Our study further elaborates the views of shoulder surgeons in international practice in disclosure of the direct involvement of surgical device

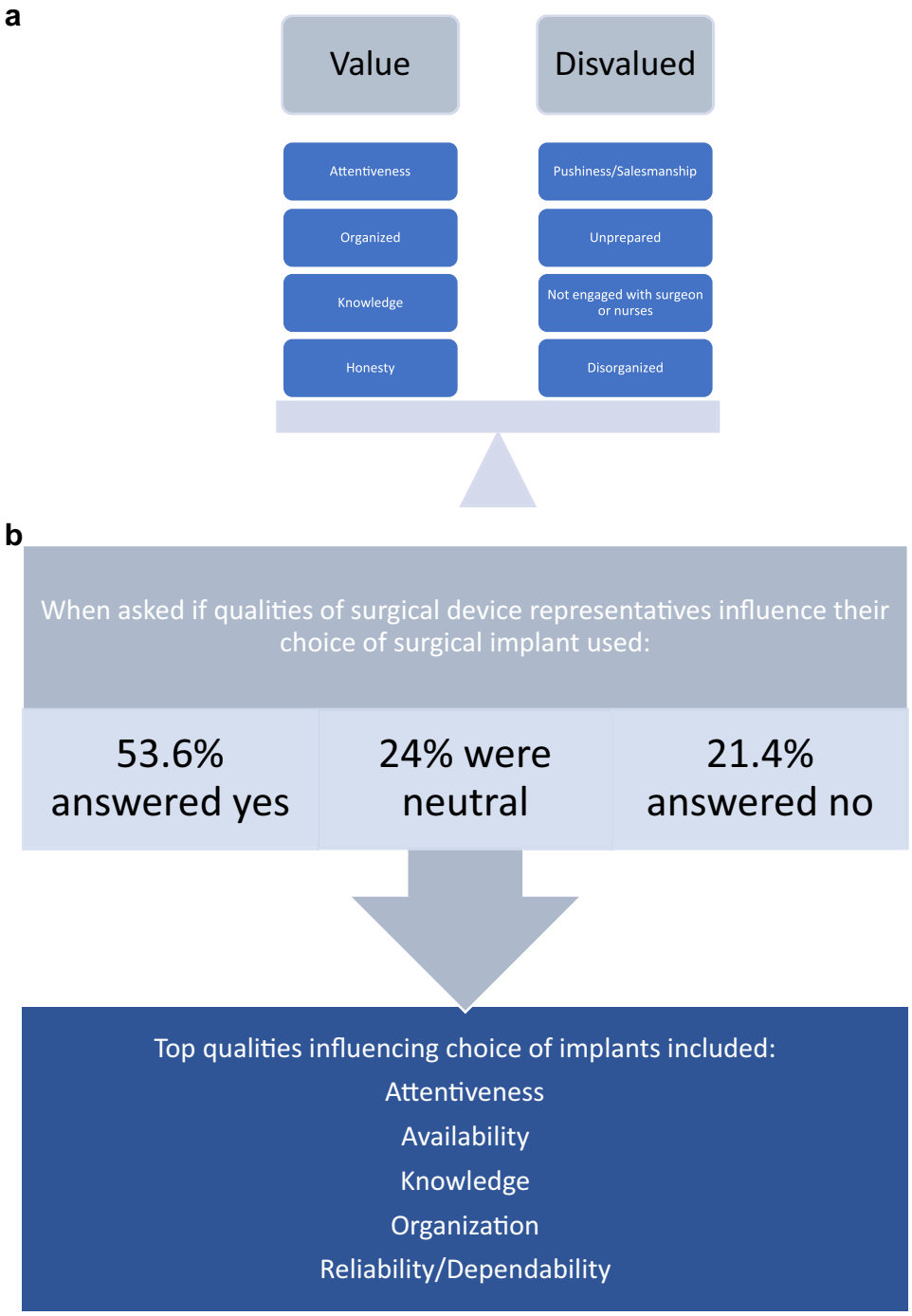

Figure 1 (**a**) Valued and disvalued qualities of surgical device representatives and (**b**) those qualities identified as the most influencing implant choice in the operating room.

representatives in patient care. Only 35.05% identified that their patients were aware of this presence, and similarly, only 26.79% responded favorably to the necessity of disclosure of this information. There were no discernible demographic factors contributing to views of disclosure to patients during analysis, though duration of practice had a small, nonsignificant correlation in favor of disclosure. Previous studies in pharmaceutical industry and orthopedic surgery demonstrate an unfavorable opinion of surgeons receiving gifts from industry, and our study reflects the corollary view of 91.1% (51 of 56) surgeons not valuing this in relationships with surgical device representatives.[3,4,6–8,10]

Our study limitations include inherent recall bias of survey methodology. Surgeons were asked to estimate yearly case volume and percentage of case volume as revision surgery, which may additionally suffer from recall bias and error. This is further seen with recall of interactions with device representatives influencing implant choice. The majority of respondents were from the United States, which may contribute significantly to the presence and availability of surgical device representatives or implants compared with other countries. Similarly, surgeons may have ownership in surgical facilities, representing a potential conflict. We did not characterize conflicts of interest by respondents with industry through direct Likert questioning. Our survey only polled shoulder

Table III
Valued and disvalued qualities of surgical device representatives by shoulder surgeons and professional relationship questions

Variables	Shoulder surgeon responses
Importance of implant specific knowledge	Extremely important: 64.29% (36/56) Very important: 23.21% (13/56) Moderately important: 8.93% (5/56) Slightly important: 1.79% (1/56) Not at all important: 1.79% (1/56)
Importance of collegiality with OR staff	Extremely important: 57.14% (32/56) Very important: 25% (14/56) Moderately important: 12.5% (7/56) Slightly important: 3.57% (2/56) Not very important: 1.79% (1/56)
Importance of personality and agreeableness in social interactions	Extremely important: 41.07% (23/56) Very important: 33.93% (19/56) Moderately important: 21.43% (12/56) Slightly important: 1.79% (1/56) Not very important: 1.79% (1/56)
Importance of availability of surgical device representatives (including after-hours)	Extremely important: 41.07% (23/56) Very important: 28.57% (16/56) Moderately important: 19.64% (11/56) Slightly important: 5.36% (3/56) Not very important: 5.36% (3/56)
Importance of gifting	Extremely important: 1.79% (1/56) Very important: 1.79% (1/56) Moderately important: (0/56) Slightly important: 5.36% (3/56) Not very important: 91.07% (51/56)
Duration of working time with the same surgical device representative(s) (yr) Mean (standard deviation) Median (range)	5.95 (4.54) 5 (0.5-20)
Continued presence of the same surgical device representative(s)? Or varying?	Same: 83.93% (47/56) Varying: 16.07% (9/56)
Preference of working with the same surgical device representative?	Preferred same: 94.64% (53/56) No preference: 5.36% (3/56)
Other locations of interaction with surgical device representatives besides the OR	Office/clinic: 21.43% (12/56) Meetings/conferences: 42.86% (24) Industry sponsored events: 19.64% (11/56) Personal outings: 5.36% (3/56) Definitely no other interactions: 10.71% (6/56)

OR, operating room.

Table IV
Shoulder surgeon implant choices, influence of surgical device representative qualities on implant choices, and patient notification of the presence of surgical device representatives in the operating room (OR)

Variables	Shoulder surgeon responses
Determination of implant availability and available products at the surgeon's institution	Hospital administration: 10.71% (6/56) Surgeon dictated/preference: 25% (14/56) Combination: 64.29% (36/56)
Do qualities of surgical device representatives influence surgeon choice in implantable devices used?	Definitely yes: 19.64% (11/56) Probably yes: 33.93% (19/56) Neutral: 24% (14/56) Probably not: 8.93% (5/56) Definitely not: 12.5% (7/56)
Has an interaction with a surgical device representative influenced a change in the surgeon implantable device used in a single instance, or in general caseload?	Definitely yes: 16.07% (9/56) Probably yes: 26.79% (15/56) Neutral: 25% (14/56) Probably not: 21.43% (12/56) Definitely not: 10.71% (6/56)
Percentage of patients aware of the presence of a surgical device representative in the OR, mean (standard deviation)	35.05 (37.13)%
Surgeon views on the need for disclosure of the presence of surgical device representatives to patients	Definitely needed: 8.93% (5/56) Probably needed: 17.86% (10/56) Neutral: 14.29% (8/56) Probably not needed: 37.5% (21/56) Definitely not needed: 21.43% (12/56)

surgeons in relation to elective procedures and did not take into account trauma or other orthopedic surgical specialties. Historically, many members of the CSS have fellowship training affiliated with a single academic institution, and this may have impacted the views of certain questions. The CSS is an openly recruited group of shoulder surgeons, and likewise, many active members do not have direct training affiliations, though this was not asked. Fifty percent of respondents had completed more than 1 fellowship and, with a mean practice duration of 11 ± 8 years (range, 1-31 years), have had much time to determine individual practice patterns and views toward industry. Currently, members of the CSS have worldwide practice locations and use many different implant systems for open and arthroscopic surgery. Surgeons may have financial interests biasing their implant choice, however characterization of interpersonal relations for the functioning operative environment are important even for these surgeons and are important to characterize. Shoulder surgeons in administrative roles may be more attuned to implant costs, and our study did not characterize the influence on device representatives in influencing the use of more, or less costly implants. Perspectives of surgical device representatives were only gathered from attending surgeons and did not compare any views of other OR staff, patients, or from surgical device representatives themselves.

Conclusion

Our study characterizes shoulder surgeon perspectives of working relationships with surgical device representatives.

Shoulder surgeons frequently interact with surgical device representatives in the OR and other professional and nonprofessional settings. The presence of surgical device representatives in an OR is generally viewed favorably by shoulder surgeons, demonstrating perceived improvements in efficiency by OR staff. Shoulder surgeons value honesty, availability, knowledge, attentiveness, and organization in a working relationship with surgical device representatives, with approximately half of surgeons polled directly influencing implant choice based on these qualities. Distraction, disorganization, lack of preparation, and salesmanship were identified as detractors to the OR environment. There was direct and strong correlation with duration of surgeon practice and relationship with surgical device representatives, indicating the longitudinal working relationship present in elective shoulder ORs. A minority of polled shoulder surgeons felt that disclosure of the involvement of shoulder surgeons to their patients was required despite the identified role they play.

Disclaimer

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